

Alan R. Franck  
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University of Florida Herbarium, Florida Museum of Natural History

BRYOPHYTES  
ADELANTHACEAE  
AMBLYSTEGIACEAE  
ANEURACEAE  
ANOMODONTACEAE  
ANTHOCEROTACEAE  
ARCHIDIACEAE  
AULACOMNIACEAE  
AYTONIACEAE  
BARTRAMIACEAE  
BRACHYTHECIACEAE  
BRUCHIACEAE  
BRYACEAE  
CALYMPERACEAE  
CALYPOGEIACEAE  
CEPHALOZIACEAE  
CEPHALOZIELLACEAE  
CONOCEPHALACEAE  
CRYPHAEACEAE  
DICRANACEAE  
DITRICHACEAE  
DUMORTIERACEAE  
ENTODONTACEAE  
EPHEMERACEAE  
ERPODIACEAE  
FISSIDENTACEAE  
FONTINALACEAE  
FOSSOMBRONIACEAE  
FRULLANIACEAE  
FUNARIACEAE  
GEOCALYCACEAE  
GRIMMIACEAE  
HEDWIGIACEAE  
HYPNACEAE  
JUNGERMANNIACEAE  
LEJEUNEACEAE  
LEPIDOZIACEAE  
LEPTODONTACEAE  
LESKEACEAE  
LEUCOBRYACEAE  
LEUCODONTACEAE  
LEUCOPHANACEAE  
MARCHANTIACEAE  
MEESIACEAE  
METEORIACEAE  
METZGERIACEAE  
MNIACEAE  
NECKERACEAE  
NOTOTHYLADACEAE  
ORTHOTRICHACEAE  
PALLAVICINIACEAE  
PILOTRICHACEAE  
PLAGIOCHILACEAE  
POLYTRICHACEAE  
PORELLACEAE  
POTTIACEAE  
PTEROBRYACEAE  
PTILIDIACEAE  
PTYCHOMITRIACEAE  
RACOPILACEAE  
RADULACEAE  
RHIZOGONIACEAE  
RICCIACEAE  
RUTENBERGIACEAE  
SCAPANIACEAE  
SEMATOPHYLLACEAE  
SPHAEROCARPACEAE

SPHAGNACEAE  
SPLACHNACEAE  
SPLACHNOBRYACEAE  
STEREOPHYLLACEAE  
THELIACEAE  
THUIDIACEAE  
TRICHOCOLEACEAE

LYCOPODS  
ISOETACEAE  
LYCOPODIACEAE  
SELAGINELLACEAE

FERNS  
ASPLENIACEAE  
ATHYRIACEAE  
AZOLLACEAE  
BLECHNACEAE  
CYATHEACEAE  
CYSTOPTERIDACEAE  
DAVALLIACEAE  
DENNSTAEDTIACEAE  
DRYOPTERIDACEAE  
EQUISETACEAE  
GLEICHENIACEAE  
HYMENOPHYLLACEAE  
LOMARIOPSISACEAE  
MARSILEACEAE  
NEPHROLEPIDACEAE  
ONOCLEACEAE  
OPHIOGLOSSACEAE  
OSMUNDACEAE  
POLYPODIACEAE  
PSILOTACEAE  
PTERIDACEAE  
SALVINIACEAE  
SCHIZAEACEAE  
TECTARIACEAE  
THELYPTERIDACEAE  
WOODSIACEAE

GYMNOSPERMS  
ARAUCARIACEAE  
CUPRESSACEAE  
CYCADACEAE  
PINACEAE  
PODOCARPACEAE  
TAXACEAE  
ZAMIACEAE

MONOCOTS  
AGAVACEAE  
ALISMACEAE  
ALLIACEAE  
ALSTROEMERIACEAE  
AMARYLLIDACEAE  
ARACEAE  
ARECACEAE  
ASPARAGACEAE  
ASPHODELACEAE  
BROMELIACEAE  
BURMANNIACEAE  
CANNACEAE  
COLCHICACEAE  
COMMELINACEAE  
COSTACEAE  
CYMODOCEACEAE

CYPERACEAE  
DIOSCOREACEAE  
ERIOCAULACEAE  
HAEMODORACEAE  
HELICONIACEAE  
HEMEROCALLIDACEAE  
HYACINTHACEAE  
HYDROCHARITACEAE  
HYPOXIDACEAE  
IRIDACEAE  
JUNCACEAE  
JUNCAGINACEAE  
LILIACEAE  
MARANTACEAE  
MAYACACEAE  
MELANTHIACEAE  
MUSACEAE  
NARTHECIACEAE  
ORCHIDACEAE  
PANDANACEAE  
POACEAE  
PONTEDERIACEAE  
POTAMOGETONACEAE  
RUPPIACEAE  
RUSCACEAE  
SMILACACEAE  
STEMONACEAE  
TOFIELDIACEAE  
TYPHACEAE  
XYRIDACEAE  
ZINGIBERACEAE  
ZOSTERACEAE

DICOTS

ACANTHACEAE  
AGDESTIDACEAE  
AIZOACEAE  
ALTINGIACEAE  
AMARANTHACEAE  
ANACARDIACEAE  
ANNONACEAE  
APIACEAE  
APOCYNACEAE  
AQUIFOLIACEAE  
ARALIACEAE  
ARISTOLOCHIACEAE  
ASTERACEAE  
BALSAMINACEAE  
BASELLACEAE  
BATAACEAE  
BEGONIACEAE  
BERBERIDACEAE  
BETULACEAE  
BIGNONIACEAE  
BORAGINACEAE  
BRASSICACEAE  
BURSERACEAE  
BUXACEAE  
CABOMBACEAE  
CACTACEAE  
CALYCANTHACEAE  
CALYCERACEAE  
CAMPANULACEAE  
CANELLACEAE  
CANNABACEAE  
CAPPARACEAE  
CAPRIFOLIACEAE  
CARICACEAE  
CARYOPHYLLACEAE  
CASUARINACEAE  
CELASTRACEAE  
CERATOPHYLLACEAE  
CHLORANTHACEAE  
CHRYSOBALANACEAE  
CISTACEAE  
CLEOMACEAE  
CLETHRACEAE  
CLUSIACEAE  
COMBRETACEAE  
CONVOLVULACEAE  
CORNACEAE  
CRASSULACEAE  
CUCURBITACEAE  
CYRILLACEAE  
DIPSACACEAE  
DROSERACEAE  
EBENACEAE  
ELAEAGNACEAE  
ERICACEAE  
ERYTHROXYLACEAE  
EUPHORBACEAE  
FABACEAE

FAGACEAE  
GELSEMIACEAE  
GENTIANACEAE  
GERANIACEAE  
GESNERIACEAE  
GISEKIACEAE  
GOODENIACEAE  
GROSSULARIACEAE  
HALORAGACEAE  
HAMAMELIDACEAE  
HYDRANGEACEAE  
HYDROLEACEAE  
HYDROPHYLLACEAE  
HYPERICACEAE  
ITEACEAE  
JUGLANDACEAE  
KRAMERIACEAE  
LAMIACEAE  
LARDIZABALACEAE  
LAURACEAE  
LENTIBULARIACEAE  
LINACEAE  
LINDERNIACEAE  
LOASACEAE  
LOGANIACEAE  
LYTHRACEAE  
MAGNOLIACEAE  
MALPIGHIACEAE  
MALVACEAE  
MARTYNIACEAE  
MAZACEAE  
MELASTOMATAACEAE  
MELIACEAE  
MENISPERMACEAE  
MENYANTHACEAE  
MOLLUGINACEAE  
MORACEAE  
MORINGACEAE  
MUNTINGIACEAE  
MYRICACEAE  
MYRTACEAE  
NELUMBONACEAE  
NYCTAGINACEAE  
NYMPHAEACEAE  
NYSSACEAE  
OCHNACEAE  
OLEACEAE  
ONAGRACEAE  
OROBANCHACEAE  
OXALIDACEAE  
PAPAVERACEAE  
PARNASSIACEAE  
PASSIFLORACEAE  
PAULOWNIACEAE  
PEDALIACEAE  
PENTAPHYLACACEAE  
PENTHORACEAE  
PETIVERIACEAE  
PHRYMACEAE

PHYLLANTHACEAE  
PHYTOLACCACEAE  
PICRAMNIACEAE  
PIPERACEAE  
PITTOSPORACEAE  
PLANTAGINACEAE  
PLATANACEAE  
PLUMBAGINACEAE  
POLEMONIACEAE  
POLYGALACEAE  
POLYGONACEAE  
PORTULACACEAE  
PRIMULACEAE  
PROTEACEAE  
PUNICACEAE  
PUTRANJIVACEAE  
RANUNCULACEAE  
RHAMNACEAE  
RHIZOPHORACEAE  
RORIDULACEAE  
ROSACEAE  
RUBIACEAE  
RUTACEAE  
SALICACEAE  
SANTALACEAE  
SAPINDACEAE  
SAPOTACEAE  
SARRACENIACEAE  
SAURURACEAE  
SAXIFRAGACEAE  
SCHISANDRACEAE  
SCHOEPIACEAE  
SCROPHULARIACEAE  
SIMAROUBACEAE  
SOLANACEAE  
SPHENOCLEACEAE  
STAPHYLEACEAE  
STYRACACEAE  
SURIANACEAE  
SYMPLOCACEAE  
TALINACEAE  
TAMARICACEAE  
TETRACHONDRACEAE  
THEACEAE  
THYMELAEACEAE  
TOVARIACEAE  
TROPAEOLACEAE  
TURNERACEAE  
ULMACEAE  
URTICACEAE  
VERBENACEAE  
VIBURNACEAE  
VIOLACEAE  
VISCACEAE  
VITACEAE  
XIMENIACEAE  
ZYGOPHYLLACEAE

# FOREWORD

## SCOPE

All species of native, naturalized, and commonly cultivated plants known to occur in Florida, USA are intended to be included. It is impossible to include all cultivated species and there is no intention here to do so (see [Franck & Farid 2020](#)).

## PURPOSE

To know the flora. The complex functions and immeasurable benefits of biodiversity ([Gascon et al. 2015](#); [Strayer 2017](#)) derive from a continuum of rare to common species ([Mouillot et al. 2013](#)).

CATEGORIES (see [Essl et al. 2018](#); [Pereyra 2019](#); [Warren 2021](#)).

Native species are those occurring in Florida due to natural (non-anthropogenic) dispersal or diversification. These are listed in bold italics without an asterisk nor caret.

\*Asterisks denote non-native, naturalized taxa (typically capable of continuing to form new populations) introduced to Florida via anthropogenic means (deliberately or inadvertently transported or established by humans, e.g. cultivated, escaped from cultivation, seed contaminant). These are in bold italics.

\*\*A superscript double-plus symbol indicates taxa for which determination of nativity is ambiguous, i.e. they may have dispersed naturally to Florida recently, possibly were introduced by humans long ago, or, perhaps, anthropogenic influence was minor or indirect relative to natural vectors. These are in bold italics.

^Carets denote non-native, cultivated taxa (occasionally very sparingly, locally naturalized but usually not continuing to form significant new populations) and these are in non-bold italics.

## EXAMPLE FORMAT

\****Genus species*** Authority {Hyperlink} Distribution in Florida (distribution outside Florida). Habitat. Endangered status. Notes.

## IDENTIFICATION KEYS

Characters of identification keys generally proceed in this order: habit, subterranean, aerial, stems, leaves, reproductive structure, male, female, phenology, and habitat (but there are deviations). The keys are optimized for use in Florida and may not work outside of Florida.

## SYNOPSIS of Embryophytes

~3422 Native taxa

~1164 \*Non-native, significantly naturalized taxa

~26 \*\*Taxa of ambiguous nativity

~738 ^Cultivated, non-native taxa (not naturalized or only very sparingly so)

~5350 TOTAL (includes ca. 100 subsp. and 200 var.)

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# EMBRYOPHYTES of Florida (Land Plants)

Possessing a waxy cuticle and usually sporophytic stomata, sporophytic zygote enveloped in gametophytic tissue, spores or pollen with sporopollenin [ASCL-type], mycorrhizal or mycorrhizal-like symbioses of fungi usually present in thalli, rhizoids, or roots).

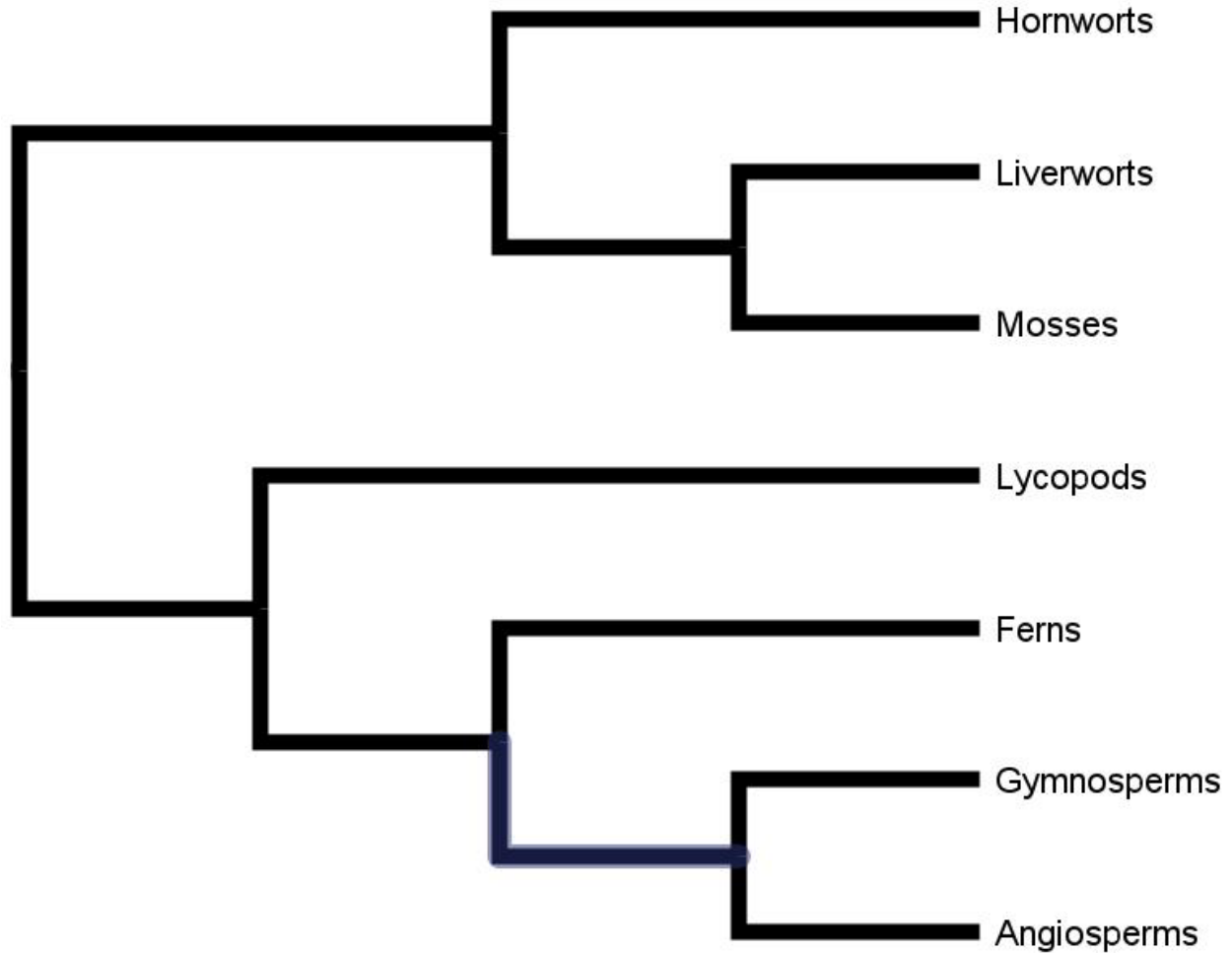


Figure: Estimated phylogeny of extant Embryophytes, see analyses by: [Puttick et al. 2018](#) (nuclear), [Gitzendanner et al. 2018](#) (plastid), [Sousa et al. 2020](#) (mitochondrial).

## Key to major groups of Embryophytes

1. Plants small, prostrate or erect to 10(70) cm tall, non-vascular or vascularity limited (of hydroids or perforate cells and leptoids or leptoid-like cells, lacking lignin), sometimes with rhizoids (lacking roots); dominant photosynthetic tissue gametophytic (haploid); sporophytic (diploid) tissue arising from the gametophyte and often non-photosynthetic, unbranched; dispersing by haploid spores..... Bryophyta
1. Plants tiny (a minute frond) to gigantic trees, to 30 m tall, with vascular roots (endodermis of lignified Casparian strip) and vascular stems (xylem of lignified tracheids and phloem of sieve elements), lignin sometimes present in other tissues; dominant photosynthetic tissue

sporophytic (diploid), often branching or dividing; dispersing by haploid spores or diploid seeds.....Tracheophyta

## BRYOPHYTA (bryophytes)

### Key to major groups of Bryophytes

1. Gametophyte thalloid, irregularly lobed, often with slime cavities hosting cyanobacteria, thallus often hosting mycorrhizal or mycorrhizal-like symbioses with fungi; sporophyte photosynthetic, from persistent basal meristem, lacking setae, often with stomata, dehiscing apically by 2 slits; cells with 1(-few) plastid (hornworts) ..... Anthocerotopsida
1. Gametophyte thalloid and usually dichotomously branching or gametophyte leafy, thallus or rhizoids sometimes hosting mycorrhizal or mycorrhizal-like symbioses with fungi; sporophytes intercalary meristem (at least partly or somewhat), with setae (capsule stalk); cells with several plastids; thallus or rhizoids often hosting mycorrhizal or mycorrhizal-like symbioses with fungi (Setaphyta).....[2]
2. Gametophyte thalloid or leafy (with leaves 2-ranked and sometimes abaxially with underleaves), non-vascular, usually dichotomously branching, with membrane-bound complex oil bodies; rhizoids unicellular; sporophyte stomata absent (air pores present); thallus or rhizoids often hosting mycorrhizal or mycorrhizal-like symbioses with fungi (liverworts)..... Marchantiopsida
2. Gametophyte leafy (leaves usually spirally arranged, infrequently 2-ranked), infrequently vascularized (hydroids, leptoids), branching usually lateral or sympodial, rhizoids multicellular; sporophyte stomata often present; thallus and rhizoids lacking mycorrhizal symbioses (mosses)..... Bryopsida

## ANTHOCEROTOPSIDA (hornworts, Anthocerotophyta)

### Key to orders of Hornworts

1. Sporophytes erect, more than 5 mm long, exerted from involucre and thallus with internal schizogenous horizontal mucilage-containing cavities; spores dark brown, brownish black, gray-black, to black..... Anthocerotales
1. Sporophytes horizontal on the thallus, less than 5 mm long, enclosed in involucre or scarcely exerted, or sporophytes erect, more than 5 mm long, exerted from involucre and thallus smooth and solid, non-cavernous (absence of internal schizogenous cavities); spores yellow to yellowish brown..... Notothyladales

## ANTHOCEROTALES

### ANTHOCEROTACEAE {AFP}

#### Anthoceros L. {AFP}

1. Spores spheroidal, 70-100  $\mu\text{m}$  wide, with reduced trilete marks, the proximal and distal connate-cristate surfaces indistinct; pseudoelaters usually <40  $\mu\text{m}$ , squarish to ovoid..... *A. adscendens*
1. Spores tetrahedral, <65  $\mu\text{m}$  wide, with a conspicuous trilete mark separating the triangular areas, well delimited at the equatorial region from the distal surface, often by a border free of

- ornamentations, ornamentation spinose, punctate, baculate, jagged, or lamellate; pseudoelaters usually >40 µm, elongate.....[2]
2. Thallus thickness of 10-20(30) cells, dorsal lamellae none to few; antheridial dimensions 100-150 µm long, 60-85 µm wide; sporophyte 20-100 mm long, 0.4-0.8 mm wide; spore distal face ornamentation of 15-18 spines and tubercles united at their base to form incomplete alveoli (perhaps non-native and possibly historically misapplied in some cases) ..... *A. punctatus*
2. Thallus thickness of 6-12(18) cells, dorsal lamella frequent, antheridial dimensions 56-88 µm long, 45-56 µm wide; sporophyte 8-20(30) mm long, 0.25-0.5 mm wide; spore distal face ornamentation with 7-12 spines.....[3]
3. Spore distal face ornamentation of 8-12 spines with irregularly curved tips, coarsely reticulate and unlike below ..... *A. agrestis*
3. Spore distal surface without reticulum, depressed areoles 3 µm high, 7-9 groups of 2-4-fid spines 3 µm high per diameter/spore; proximal trilete mark with aristae 2 µm high without margin; triangular areas with depressions, without warts; distal reticulum with areolas smaller than 4 µm ..... *A. scariosus*

***Anthoceros adscendens*** (Lehm. & Lindenb.) Hässel— {AFP}

***Anthoceros agrestis*** Paton— {AFP}

***Anthoceros punctatus*** L.— {AFP}

***Anthoceros scariosus*** Austin— {AFP}

## NOTOTHYLADALES

### NOTOTHYLADACEAE {AFP}

1. Thallus cavernous; sporophytes lateral or nearly horizontal on the thallus, less than 5 mm long ... *Notothylas orbicularis*

1. Thallus smooth and solid, non-cavernous (absence of internal schizogenous cavities); sporophytes erect, more than 5 mm long ... *Phaeoceros carolinianus*

**Notothylas** {AFP}

***Notothylas orbicularis*** (Schwein.) Sull.— {AFP}

**Phaeoceros** {AFP}

***Phaeoceros carolinianus*** (Michx.) Prosk.— {AFP}

## MARCHANTIOPSIDA

(liverworts, Marchantiophyta)

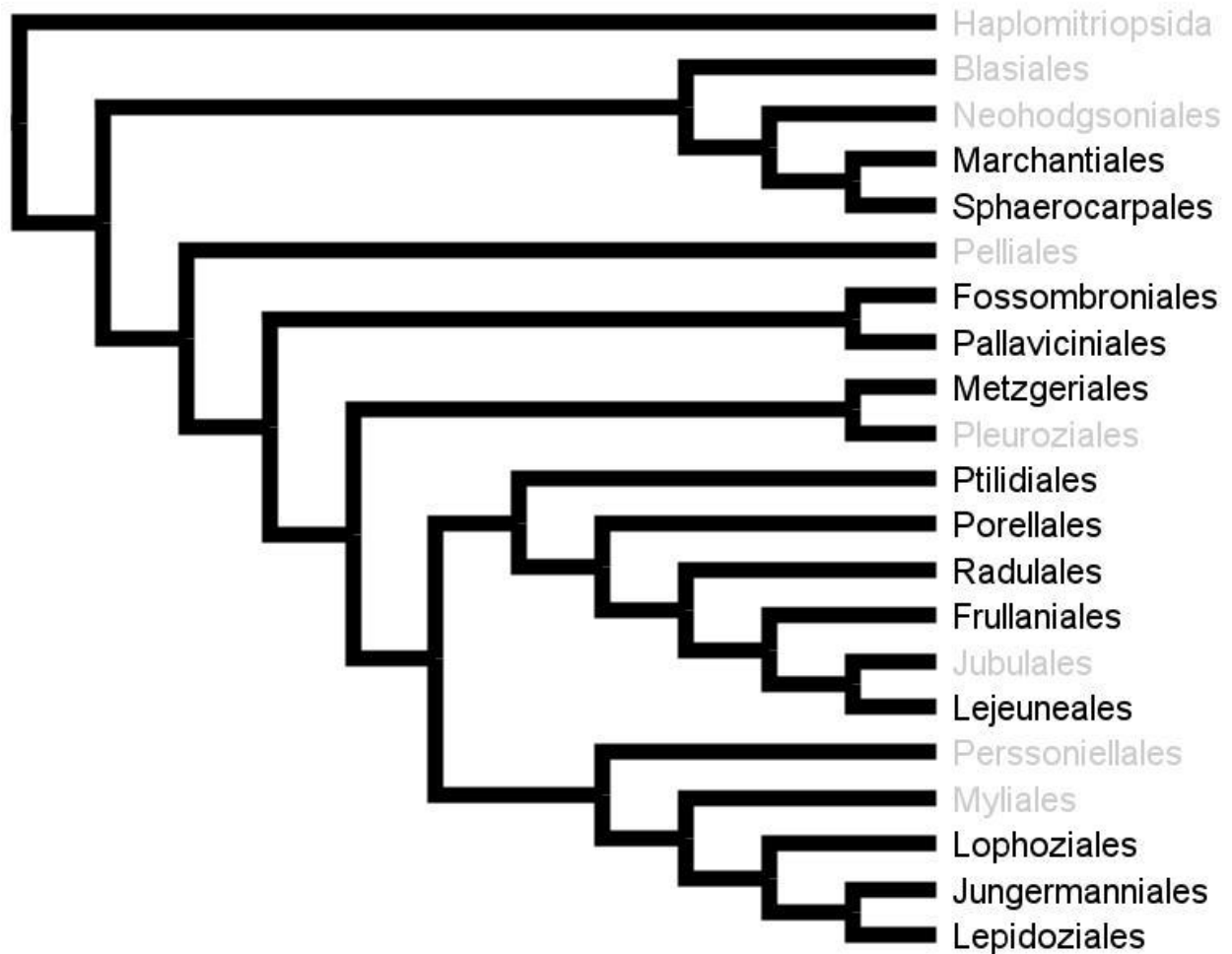


Figure: Estimated phylogeny of extant liverworts, see analyses by: [Bechteler et al. 2023](#) (nuclear), [Li et al. 2024](#) (plastid). Black font=contains taxa native to Florida; Gray font=not native, not included.

Key to groups (see [Kurz & Little 1933](#); [Dauphin et al. 2011](#); [Stotler & Crandall-Stotler 2017](#); [Vitt 2024](#)).

- 1. Plant thallose, without leaves or these irregular ... Key A
- 1. Plant leafy ... Key B

#### Key A

- 1. Thallus typically obscured by crowded involucre of included sporophytes ... Sphaerocarpaceae
- 1. Thallus conspicuous, sporophytes exerted or embedded [2]
- 2. Thallus with irregular, undulate leaf-like lobes ... Fossombronia
- 2. Thallus without leaves [3]
- 3. Sporophytes embedded in thallus ... Ricciaceae
- 3. Sporophytes exerted [4]
- 4. Thallus with a distinct medial line or midrib [5]
- 4. Thallus lacking a midrib or the medial region poorly differentiated [6]
- 5. Thallus margin with hairs ... Metzgeriaceae
- 5. Thallus margin lacking hairs ... Pallaviciniaceae
- 6. Thallus undifferentiated; sporophytes lateral ... Aneuraceae



- 6. Thallus differentiated into distinct layers; sporophytes dorsal and erect or ventral [7]
- 7. Thallus pores absent, air chambers represented only by low lamellae ... Dumortieraceae
- 7. Thallus with pores and air chambers [8]
- 8. Gemmae in cups (gemmae absent in some species outside the flora) ... Marchantiaceae
- 8. Gemmae absent [9]
- 9. Thallus generally lacking odor; air chambers subdivided by secondary walls; ventral scale appendages subulate, lanceolate, to circular ... Aytoniaceae
- 9. Thallus often odorous; air chambers not subdivided; ventral scale appendage reniform ... Conocephalaceae

Key B

## MARCHANTIALES

**AYTONIACEAE** {AFP}: Key adapted from [Whittemore & Hicks \(2023\)](#).

1. Carpocephalum dorsal on thallus; disk small, involucre spreading horizontally. Secondary walls of air chambers, if present, reaching epidermis, connected by perforations, thus secondary areoles complete and closed. Appendages of ventral scales subulate to circular ... *Plagiochasma*

1. Carpocephalum terminal on thallus (sometimes appearing lateral); disk moderate to large, involucre descending. Secondary walls of air chambers various. Appendages of ventral scales subulate to lanceolate ... *Reboulia*

### *Plagiochasma*

*Plagiochasma crenulatum* Gottsche—[Reported for Alachua Co.](#)

### *Reboulia* {AFP}

*Reboulia hemisphaerica* (L.) Raddi— {AFP}

### CONOCEPHALACEAE {AFP}

#### *Conocephalum* {AFP}

*Conocephalum salebrosum* Szweyk. et al.— {AFP}

### DUMORTIERACEAE {AFP}

#### *Dumortiera* {AFP}

*Dumortiera hirsuta* (Sw.) Nees subsp. *hirsuta*— {AFP} Probably subsp. *nepalensis* is misapplied in the flora ([Zander 2024](#)).

**MARCHANTIACEAE** {AFP} Key adapted from [Zander \(2023\)](#).

1. Female receptacles with 9 or more papillose tubular lobes, thallus with intramarginal scales present, pores surrounded by 4 rings of cells ... *M. polymorpha*

1. Female receptacles with 5-9 smooth flat lobes, thallus intramarginal scales absent, pores surrounded by 5-7 rings of cells [2]

2. Pores not stellate, ventral scales closely denticulate or ciliate, gemma cups not lobed, margins dentate to ciliate ... *M. inflexa*

2. Pores stellate, ventral scales entire or dentate, gemma cups with dentate triangular lobes ... *M. paleacea*

## Marchantia {AFP}

*Marchantia inflexa* Nees & Mont.— {AFP}

*Marchantia paleacea* Bertol.— {AFP}

*Marchantia polymorpha* L. subsp. *ruderalis* Bischl. & Boissel.-Dub.—

## RICCIACEAE {AFP}

Key adapted from Zander (2023)

1. Epidermis without visible pores or these simple openings among epidermal cells where species have polygonal air chambers; ventral scales in one row, with age splitting into two rows, nearly round, entire; oil cells absent (except in *R. campbelliana*); prostrate or submersed ...  
Riccia

1. Epidermis with small, scattered, distinct pores; ventral scales in multiple rows, lanceolate, rarely ligulate, dentate; oil cells present; usually floating, sometimes stranded and prostrate ...  
Ricciocarpos

**Riccia** {AFP}: Excluded name *R. howei*.

Key adapted from Zander (2023)

1. Thallus thin, 2-3 cells thick, translucent, ventral scales absent ... *R. membranacea*

1. Thallus thick, 4-10 cells thick medially, opaque to semi-translucent, ventral scales present or absent [2]

2. Thallus spongy, with air chambers and air spaces, ventral scales absent, evanescent or in 1 or 2 rows, pores present, conspicuous, surrounded by a ring of cells or opening irregularly [3]

2. Thallus compact, air chambers absent excepting as narrow channels, ventral scales in 2 rows; pores lacking or inconspicuous, not surrounded by a ring of cells [7]

3. Mature spores united in tetrads; heterothallic, male plants smaller than female, ventral scales absent [4]

3. Mature spores separating, not disbursed in tetrads; homothallic or heterothallic, male plants commonly same size as female, ventral scales in 1 or rarely 2 rows [5]

4. Plants in distinct rosettes, shortly dichotomous, male plants becoming red or purple, female remaining green; spores with blunt, crowded tubercles on a fine reticulum, spores 70-80(90)  $\mu\text{m}$  wide ... *R. curtisii*

4. Plants in elongated rosettes or irregularly crowded, male and female plants green; spores with blunt, conic spines not arising from a reticulum, spores 60-70(75)  $\mu\text{m}$  wide ... *R. leptothallus*

5. Mature sporangia protruding from dorsal surface of thallus, spores not fully areolate or with vermiform ridges ... *R. cavernosa*

5. Mature sporangia protruding from ventral surface of thallus, spores regularly and distinctly areolate on distal face [6]

6. Terrestrial or aquatic plants, often sterile, spores when present 80-100  $\mu\text{m}$  wide; dorsal epidermis smooth ... *R. fluitans*

6. Terrestrial plants, commonly sporangiate, spores 50-80  $\mu\text{m}$  wide; dorsal epidermis often lacunose when old ... *R. huebeneriana*

7. Dioicous; thallus unbranched or with only 1-2 dichotomies, segments (3)5-7 mm in wide, with thin wings, tubers forming at thallus apices; spores black, usually lacking winged margins ... *R. gougetiana*

7. Monoicous; thallus branching with usually 1-4 dichotomies, segments 1-4 mm in wide, without wings, tubers absent; spores variously colored, with or without winged margin [8]  
 8. Thallus usually with a deep groove centrally, margins acute and not ciliate ... *R. sorocarpa*  
 8. Thallus medially sharply grooved near the apex or not at all, margins rounded and ciliate [9]  
 9. Plants large, segments 1.5-2.5(3) mm in width, dorsal groove shallow, broadening, 0.3-0.7 of segment width; thallus margins often blackened ... *R. beyrichiana*  
 9. Plants small, segments 0.5-2 mm in width, dorsal groove narrow, not broadening, usually 0.3 or less of segment width; thallus margins often purple-green ... *R. hirta*

***Riccia beyrichiana*** Hampe— {AFP}

***Riccia cavernosa*** Hoffm.— {AFP}

***Riccia curtisii*** (Austin) Austin— {AFP}

***Riccia fluitans*** L.— {AFP}

***Riccia gougetiana*** Durieu & Mont.— {AFP}

***Riccia hirta*** (Austin) Underw.— {AFP}

***Riccia huebeneriana*** Lindenb. subsp. ***sullivantii*** (Austin) R.M. Schust.— {AFP}

***Riccia leptothallus*** R.M. Schust.— {AFP}

***Riccia membranacea*** Gottsche et al.— {AFP}

***Riccia sorocarpa*** Bisch.— {AFP}

***Riccia stenophylla*** Spruce— {AFP}

**Ricciocarpos** {AFP}

***Ricciocarpos natans*** (L.) Corda— {AFP}

## SPHAEROCARPALES

**SPHAEROCARPACEAE** {AFP}

**Sphaerocarpos** {AFP}

See [Anonymous \(2017\)](#)

1. Spores separating at maturity ... *S. donnellii*

1. Spores persistently united in tetrads ... *S. texanus*

***Sphaerocarpos donnellii*** Austin— {AFP}

***Sphaerocarpos texanus*** Austin— {AFP}

## FOSSOMBRONIALES

**FOSSOMBRONIACEAE** {AFP}

***Fossombronia*** {AFP}: Probably, *F. foveolata* and *F. wondraczekii* were misapplied in the flora.

Key adapted from [Crandall-Stotler & Bray, Jr. \(2019\)](#)

1. Stems never forming tubers; antheridia and archegonia intermixed; perigonial scales absent; elaters with 3-5 spiral thickening bands ... *F. porphyrorhiza*

1. Stems sometimes forming apical and/or ventral tubers; protandrous, with antheridia and archegonia spatially separated; large, persistent perigonial scales present; elaters with 2-3 spiral thickening bands ... *F. salina*

***Fossombronia porphyrorhiza*** (Nees) Prosk.— {AFP}

***Fossombronia salina*** Lindb. ex Evans— {AFP}

## PALLAVICINIALES

### PALLAVICINIACEAE {AFP}

#### Pallavicinia {AFP}

*Pallavicinia lyellii* (Hook.) A. Gray— {AFP}

## METZGERIALES

### ANEURACEAE {AFP}

Key adapted from [Faubert \(2015\)](#)

1. Thallus simple or irregularly pinnate, segments 2-8(10) mm wide, branches short and irregular; oil-bodies 2-4(6) µm wide, colorless, 5-55 per cell ... *Aneura*

1. Thallus 1-3-pinnate, segments 0.2-2 mm wide, branches generally elongate; oil-bodies 6-18 µm wide, at least those of the hypodermal cells opaque, 1-10(15) per cell, or absent in most cells ... *Riccardia*

#### *Aneura* {AFP}

Key adapted from [Faubert \(2015\)](#)

1. Thallus thin, herbaceous, multistratose in the central part, 1-stratose at margins, the thallus thus presenting a prominent, thick costal region bordered by strongly undulate wings 2--32 cells wide ... *A. maxima*

1. Thallus turgid, opaque, multistratose throughout, costal region not prominent, margins flat to slightly undulate (narrow wings may be present in specimens from very damp habitats) ... *A. pinguis*

*Aneura maxima* (Schiffn.) Steph.— {AFP}

*Aneura pinguis* (L.) Dumort.— {AFP}

#### *Riccardia* {AFP}

Key adapted from [Faubert \(2015\)](#)

1. Epidermal and hypodermal cells with 3-10 oil-bodies ... *R. stricta*

1. Epidermal or hypodermal cells with 1-2(3) oil-bodies [2]

2. Oil-bodies 1-2 in most epidermal and marginal cells ... *R. chamedryfolia*

2. Oil-bodies absent from most epidermal and marginal cells (abundant or rare in hypodermal cells) [3]

3. Thallus segments lacking distinct hyaline wings, branches and main axis with 1-stratose margins 1(2) cell wide; oil-bodies rare or absent in hypodermal cells [4]

3. Thallus segments with distinct hyaline wings, branches with 1-stratose margins 2-5 cells wide, main axis with 1-stratose margins 1-2(3) cells wide; oil-bodies abundant in hypodermal cells [5]

4. Monoicous; epidermal cells 35-55 µm wide, with their main axes obliquely pointing toward the margins ... *R. latifrons*

4. Dioicous; epidermal cells 20-30 µm wide, with their main axes parallel to the branch margins ... *R. palmata*

5. Autoicous; ultimate segments (3)4 cells thick medially; 1-stratose margins 2-3(4) cells wide ... *R. multifida* subsp. *multifida*

5. Synoicous; ultimate segments 3 cells thick medially; 1-stratose margins 4-5 cells wide ... *R. multifida* subsp. *synoica*

*Riccardia chamedryfolia* (With.) Grolle— {AFP}  
*Riccardia latifrons* Lindb. subsp. *latifrons*—  
*Riccardia multifida* (L.) Gray subsp. *multifida*— {AFP}  
*Riccardia multifida* (L.) Gray subsp. *synoica* R.M. Schust.— {AFP}  
*Riccardia palmata* (Hedw.) Carruth.— {AFP}  
*Riccardia stricta* R.M. Schust.— {AFP} Endemic.

## METZGERIACEAE {AFP}

### Metzgeria {AFP}

Key adapted from [Bakalain \(2019\)](#)

1. Marginal thallus hairs falcate or hooked, costa 2(3) cells wide ventrally ... *M. uncigera*
1. Marginal thallus hairs straight, costa 2-6 cells wide ventrally [2]
2. Marginal thallus hairs always solitary ... *M. furcata*
2. Marginal thallus hairs straight, costa 2-6 cells wide ventrally ... *M. myriopoda*

*Metzgeria furcata* (L.) Dumort.— {AFP}

*Metzgeria myriopoda* Lindb.— {AFP}

*Metzgeria uncigera* A. Evans— {AFP}

## PTILIDIALES

### PTILIDIACEAE {AFP}

#### Ptilidium {AFP}

*Ptilidium pulcherrimum* (Weber) Hampe— {AFP}

## PORELLALES

### PORELLACEAE {AFP}

#### Porella {AFP}

Key adapted from [Bakalain \(2019\)](#)

1. Underleaves flat to concave, to 0.25 of stem width; IKI reaction negative ... *P. pinnata*
1. Underleaves convex, widely ovate, 1.4-1.8 of stem width; IKI reaction positive ... *P. platyphylloidea*

*Porella pinnata* L. forma *involuta* (Hampe)R.M.Schust.— {AFP}

*Porella platyphylloidea* (Schwein.) Lindb.— {AFP} Probably the similar *P. platyphylloidea* is rare to absent from the flora.

## RADULALES

### RADULACEAE {AFP}

#### Radula {AFP}

Key adapted from [Krayesky et al. \(2018\)](#)

1. Plants epiphyllous; with a tendency to possess slender triradiate trigones; gemmae often present (large, 1/3--3/4 the size of the dorsal lobe of the leaf) ... *R. flaccida*
1. Plants terricolous, epicortical, epixylic, or epilithic; slender triradiate trigones never present; gemmae rare to copious (less than 1/5 the size of the dorsal lobe of the leaf) [2]
2. Dorsal lobes with a strong tendency to be caducous [3]
2. Dorsal lobes never caducous [5]

3. Thallus lacking or containing a few leaves with a falcate leaf stance; rhizoids often abundant; heteroicous ... *R. obconica*
3. Thallus containing many leaves with a falcate leaf stance; rhizoids absent to sporadic; dioicous [4]
4. Lobule subquadrate; androecia terminal; plants never yellow-green; plants occasionally with a brownish cast ... *R. floridana*
4. Lobule triangulate; androecia intercalary; plants sometimes yellow-green; plants never with a brownish cast ... *R. sullivantii*
5. Mature stems hidden in postical (ventral) view by lobules (ventral lobes) of thallus ... *R. quadrata*
5. Mature stems not hidden in postical (ventral) view by lobules (ventral lobes) of thallus [6]
6. Dioicous; thallus occasionally with a bronze to brownish cast ... *R. australis*
6. Monoicous (paroicous); thallus without a bronze or brownish cast ... *R. complanata*

***Radula australis*** Austin— {AFP}

***Radula complanata*** (L.) Dumort.— {AFP}

***Radula flaccida*** Lindenb. & Gottsche— {AFP}

***Radula floridana*** Castle—{AFP} (*R. javanica*, misapplied).

***Radula obconica*** Sull.— {AFP}

***Radula quadrata*** Gottsche— {AFP}

***Radula sullivantii*** Austin— {AFP}

## FRULLANIALES

### FRULLANIACEAE {AFP}

#### *Frullania* {AFP}

Key adapted from [Atwood \(2017\)](#)

1. Dorsal lobes with ocelli in a conspicuous median line, scattered, or confined to basal cells ... *F. cobrensis*
1. Dorsal lobes lacking ocelli or ocelli inconspicuous [2]
2. Inflated lobule wide-spreading, separated from the stem by a distance greater than its width, the lobule mouth oriented towards stem ... *F. taxodiocola*
2. Inflated lobule erect or obliquely spreading, contiguous or approximate with stem, separated by a distance that is less than or nearly equal to its width, the lobule mouth oriented towards shoot base or slightly toward or away from stem; or lobule frequently explanate [3]
3. Lobule with inflated distal portion and a ligulate proximal portion that extends to or beyond the basal lobe margin and is connected to the dorsal lobe by a keel that is parallel or sub-parallel to the stem; free lobule margin sinuous ... *F. riojaneirensis*
3. Proximal lobule portion triangular or not noticeably expanded, forming a short keel with dorsal lobe that is perpendicular or obliquely spreading from stem; free lobule margin plane; or lobule frequently explanate [4]
4. Inflated lobule cylindrical or sac-shaped, about two or more times longer than wide, not beaked on the external margin; or explanate lobule with strongly deflexed margins; ornamentation of perianth smooth [5]
4. Inflated lobule cap or helmet-shaped, about as long as wide, sometimes beaked on the external margin; or explanate lobule with plane or slightly decurved margins; ornamentation of perianth often tuberculate, sometimes smooth [7]
5. Ventral leaf margins reflexed, sometimes only at or above the sinuses ... *F. cucullata*

5. Ventral leaf margins plane, slightly recurved or contorted [6]  
 6. Lobules separated from the stem by a distance that is less than or nearly equal to its width; gynoecial bracts and bracteole dentate ... *F. donnellii*  
 6. Lobules mostly superimposed or contiguous with stem; gynoecial bracts and bracteole entire ... *F. kunzei*  
 7. Plants dioicous, androecia spicate, though sometimes abbreviated, or unknown  
 7. Plants autoicous or paroicous, androecia mostly capitate, occasionally short spicate [10]  
 8. Leaves deflexed and somewhat rolled around the stem when dry; squarrose when moist; gynoecia terminal on short lateral branches with no subfloral innovations ... *F. ericoides*  
 8. Leaves imbricate when dry; flattened, spreading, or wide-spreading when moist; gynoecia terminal on stem or main branch [9]  
 9. Shoots 1.0-1.2 mm wide; stylus lanceolate, 5-8 cells long and 2-3 cells wide; gynoecial bracts spreading; innermost bracteole free from bract; perianth beak elongate *F. brittoniae*  
 9. Shoots 0.7-0.9 mm wide; stylus filiform or subulate, 4-5 cells long and 1-2 cells wide; gynoecial bracts squarrose; innermost bracteole connate on one side with bract; perianth beak short ... *F. virginica*  
 10. Ventral leaf bases cuneate to slightly decurrent ... *F. gibbosa*  
 10. Ventral leaf bases cuneate to slightly decurrent  
 11. Tips of shoot spreading; dorsal face of perianth flattened or concave, beak lacking; gynoecial bracts often single, replaced by innovations ... *F. sabaliana*  
 11. Tips of shoots prostrate; dorsal face of perianth weakly to distinctly keeled, acuminate in a beak; gynoecial bracts multiple, not replaced by innovations [12]  
 12. Innermost gynoecial bracteole free from bract ... *F. inflata*  
 12. Innermost gynoecial bracteole connate with bract on one or sometimes both sides ... *F. rappii*

***Frullania brittoniae*** A. Evans— {AFP}

***Frullania caulisequa*** (Nees) Nees— {AFP}

***Frullania cobrensis*** Gottsche ex Steph.— {AFP}

***Frullania cucullata*** Lindenb. & Gottsche— {AFP}

***Frullania donellii*** Austin— {AFP}

***Frullania ericoides*** (Nees) Mont.— {AFP}

***Frullania gibbosa*** Nees— {AFP}

***Frullania inflata*** Gottsche— {AFP}

***Frullania kunzei*** (Lehm. & Lindenb.) Lehm. & Lindenb.— {AFP}

***Frullania rappii*** A. Evans— {AFP}

***Frullania riojaneirensis*** (Raddi) Spruce— {AFP}

***Frullania sabaliana*** R.M. Schust.— {AFP} Endemic. Hillsborough Co. River margins, on trees just above the mean water level.

***Frullania taxodiocola*** R.M. Schust.— {AFP} Endemic.

***Frullania virginica*** Gottsche— {AFP}

## LEJEUNEALES

LEJEUNEACEAE {AFP}

*Acrolejeunea* {AFP}

***Acrolejeunea heterophylla*** (A. Evans) Grolle & Gradst.— {AFP}

## Caudalejeunea {AFP}

*Caudalejeunea lehmanniana* (Gottsche) A. Evans— {AFP}

## Ceratolejeunea {AFP}

Key from [Thiers \(2016\)](#)

1. Ocelli forming a line extending from base to leaf midportion ... *C. ceratantha*

1. Ocelli basal or absent [2]

2. Perianth keels forming terete horns; plants autoicous or dioicous; leaf margins entire or irregularly dentate near leaf apex; utriculate lobules often present at branch bases, asexual reproduction absent ... *C. cubensis*

2. Perianth keels forming crests (rather than distinct horns); plants usually dioicous; leaf margins entire; utriculate lobules absent; asexual reproduction by regeneration from leaf margin or by dehiscent leaf lobes sometimes present ... *C. laetefusca*

*Ceratolejeunea cubensis* (Mont.) Schiffn.— {AFP}

*Ceratolejeunea laetefusca* (Austin) R.M. Schust.— {AFP} (*C. guianensis*, misapplied).

*Ceratolejeunea ceratantha* (Nees & Mont.) Schiffner— {AFP} (*C. rubiginosa*, misapplied).

*Cheilolejeunea* {AFP}: Expanded to include *Leucolejeunea* ([Ye et al. 2015](#)).

*Cheilolejeunea adnata* (Kunze ex Lehm.) Grolle— {AFP}

*Cheilolejeunea clausa* (Nees & Mont.) R.M. Schust.— {AFP} (*C. trifaria*, misapplied?).

*Cheilolejeunea clypeata* (Schwein.) W. Ye & R.L. Zhu— {AFP}

*Cheilolejeunea conchifolia* (A. Evans) R.M. Schust.— {AFP}

*Cheilolejeunea discoidea* (Lehm. & Lindenb.) Kachroo & R.M. Schust.— {AFP}

*Cheilolejeunea polyantha* A. Evans var. *polyantha*— {AFP} Endemic.

*Cheilolejeunea polyantha* A. Evans var. *caduciloba* R.M. Schust.— {AFP}

*Cheilolejeunea rigidula* (Nees & Mont.) R.M. Schust.— {AFP}

*Cheilolejeunea uncioloba* (Lindenb.) Malombe— {AFP}

*Cheilolejeunea xanthocarpa* (Lehm. & Lindenb.) Malombe — {AFP}

*Cololejeunea* {AFP}: Excluded: *C. sicaefolia*.

*Cololejeunea cardiocarpa* (Mont.) Steph.— {AFP}

*Cololejeunea clavatopapillata* Steph.— {AFP}

*Cololejeunea contractiloba* A. Evans— {AFP}

*Cololejeunea cornutissima* (R.M. Schust.) Stotler & Crand.-Stotl.— {AFP}

*Cololejeunea diaphana* A. Evans— {AFP}

*Cololejeunea minuscula* Pócs— {AFP}

*Cololejeunea minutissima* (Sm.) Schiffn. subsp. *minutissima*— {AFP}

*Cololejeunea minutissima* (Sm.) Schiffn. subsp. *myriocarpa* (Nees & Mont.) R.M. Schust.— {AFP}

*Cololejeunea ornata* A. Evans— {AFP}

*Cololejeunea setiloba* A. Evans— {AFP}

*Cololejeunea sintenisii* (Steph.) Pócs— {AFP}

*Cololejeunea subcristata* A. Evans— {AFP} Endemic.



### Diplasiolejeunea {AFP}

*Diplasiolejeunea rudolphiana* Steph.— {AFP}

### Drepanolejeunea {AFP}

*Drepanolejeunea sabaliana* R.M.Schust.— {AFP} (*D. mosenii*, misapplied).

### Frullanoides {AFP}

*Frullanoides bahamensis* (A. Evans) Slageren— {AFP}

*Frullanoides corticalis* (Lehm. & Lindenb.) Slageren— {AFP}

### Harpalejeunea {AFP}

*Harpalejeunea molleri* (Steph.) Grolle— {AFP} (*H. ovata*, misapplied).

*Harpalejeunea stricta* (Lindenb. & Gottsche) Steph.— {AFP}

### Lejeunea {AFP}

*Lejeunea adpressa* Nees— {AFP}

*Lejeunea aphanes* Spruce— {AFP}

*Lejeunea bermudiana* (A. Evans) R.M. Schust.— {AFP}

*Lejeunea calcicola* R.M. Schust.— {AFP}

*Lejeunea cancellata* Nees & Mont.— {AFP}

*Lejeunea cladogyna* A. Evans— {AFP}

*Lejeunea deplanata* (A. Evans) He—

*Lejeunea flava* (Sw.) Nees— {AFP}

*Lejeunea floridana* A. Evans— {AFP}

*Lejeunea glaucescens* Gottsche— {AFP}

*Lejeunea laetevirens* Nees & Mont.— {AFP}

*Lejeunea minutiloba* A. Evans— {AFP} (syn. var. *heterogyna*)

*Lejeunea monimiae* (Steph.) Steph.— {AFP} (*L. phyllobola*, misapplied)

*Lejeunea obtusangula* Spruce— {AFP}

*Lejeunea phyllobola* Nees & Mont.— {AFP} (*L. brittoniae*, syn.)

*Lejeunea spiniloba* Lindenb. & Gottsche— {AFP}

*Lejeunea trinitensis* Lindenb.— {AFP}

### Leptolejeunea {AFP}

*Leptolejeunea elliptica* (Lehm. & Lindenb.) Schiffn.— {AFP} strong anise-like odor

### Lopholejeunea {AFP}

*Lopholejeunea nigricans* (Lindenb.) Schiffn.— {AFP}

*Lopholejeunea subfusca* (Nees) Schiffn.— {AFP}

### Mastigolejeunea {AFP}

*Mastigolejeunea auriculata* (Wilson & Hook.) Schiffn.— {AFP}

### Microlejeunea {AFP}

*Microlejeunea epiphylla* Bischl.— {AFP}

*Microlejeunea globosa* (Spruce) Steph.— {AFP}

*Microlejeunea ruthii* A. Evans— {AFP}

*Microlejeunea ulicina* (T. Taylor) Steph. subsp. *bullata* (Taylor) R.M. Schust.— {AFP}

*Microlejeunea ulicina* (T.Taylor) Steph. subsp. *ulicina*— {AFP}

Neurolejeunea {AFP}

*Neurolejeunea breutelii* (Gottsche) A. Evans— {AFP}

Rectolejeunea {AFP}

*Rectolejeunea berteriana* (Gottsche) A. Evans— {AFP}

## LOPHOZIALES

ADELANTHACEAE

Syzygiella {AFP}

*Syzygiella autumnalis* (DC.) K. Feldberg et al.— {AFP}

CEPHALOZIACEAE {AFP}

Cephalozia {AFP}: Possibly misapplied: *C. bicuspidata*

Key from [Zander & McIntosh \(2020\)](#)

*Cephalozia catenulata* (Huebener) Lindb.— {AFP}

*Cephalozia connivens* (Dicks.) Lindb.— {AFP}

*Cephalozia lunulifolia* (Dumort.) Dumort.— {AFP}

*Cephalozia macrostachya* Kaalaas.—

Odontoschisma {AFP}

*Odontoschisma denudatum* (Nees) Dumort.— {AFP}

*Odontoschisma sphagni* (Dicks.) Dum.— {AFP} (syn. *O. prostratum*).

CEPHALOZIELLACEAE {AFP}

Cephaloziella {AFP}

Key from [Wagner](#)

*Cephaloziella hyalina* Douin— {AFP}

*Cephaloziella spinigera* (Lindb.) Jørg.— {AFP}

Chonecolea {AFP}

*Chonecolea doellingeri* (Nees) Grolle— {AFP}

Cylindrocolea {AFP}

*Cylindrocolea planifolia* (Steph.) R.M. Schust.— {AFP} (syn. *C. obliqua*).

*Cylindrocolea rhizantha* (Mont.) R.M. Schust.— {AFP}

SCAPANIACEAE {AFP}

Scapania {AFP}

Key adapted from [Whittemore \(2020\)](#)

*Scapania mucronata* Buch—

***Scapania nemorea*** (L.) Dumort.— {AFP}

Schistochilopsis {AFP}

***Schistochilopsis capitata*** (Hook.) Konstant.— {AFP}

## JUNGERMANNIALES

CALYPOGEIACEAE {AFP}

**Asperifolia**

***Asperifolia sullivantii*** (Austin) A.V. Troitsky.— {AFP}

**Calypogeia** {AFP}

***Calypogeia neesiana*** (C. Mass. & C. C. C. C. C. C. C.) Müll.—

***Calypogeia neogaea*** (R. M. Schust.) Bakalin.— {AFP}

***Calypogeia peruviana*** Nees & Mont.— {AFP}

**Cryptolophocolea**

***Cryptolophocolea martianus*** (Nees) L. Söderstr.— {AFP}

SOLENOSTOMATACEAE

**Solenostoma** {AFP}

***Solenostoma gracillimum*** (Sm.) R. M. Schust.— {AFP}

## LEPIDOZIALES

LEPIDOZIACEAE {AFP}

**Bazzania** {AFP}

***Bazzania trilobata*** (L.) Gray.— {AFP}

**Kurzia** {AFP}

***Kurzia makinoana*** (Steph.) Grolle.— {AFP} (syn. *K. sylvatica*, *K. setacea*, misapplied)

**Telaranea** {AFP}

***Telaranea nematodes*** (Gottsche ex Austin) M. A. Howe.— {AFP} (*T. longifolia*, misapplied)

LOPHOCOLEACEAE {AFP}

**Chiloscyphus** {AFP}

***Chiloscyphus apalachicolus*** (R. M. Schust.) J. J. Engel & R. M. Schust.— {AFP}

***Chiloscyphus profundus*** (Nees) J. J. Engel & R. M. Schust.— {AFP} (syn. subsp. *cladogyna*)

PLAGIOCHILACEAE {AFP}

**Plagiochila** {AFP}

Key adapted from Zander (2022)

***Plagiochila aspleniformis*** R. M. Schust.— {AFP}

***Plagiochila columbiana*** A. Evans—

***Plagiochila floridana*** A. Evans— {AFP}

- Plagiochila invis* (R.M. Schust.) R.M. Schust.— {AFP} Endemic.  
*Plagiochila micropteryx* Gottsche— {AFP}  
*Plagiochila miradorensis* Gottsche— {AFP}  
*Plagiochila montagnei* Nees— {AFP}  
*Plagiochila patula* (Sw.) Lindenb.— {AFP}  
*Plagiochila raddiana* Lindenb.— {AFP}  
*Plagiochila undata* Sull.— {AFP}

TRICHOCOLEACEAE {AFP}

Trichocolea {AFP}

*Trichocolea tomentella* (Ehrh.) Dumort.— {AFP}

**BRYOPSIDA**  
mosses

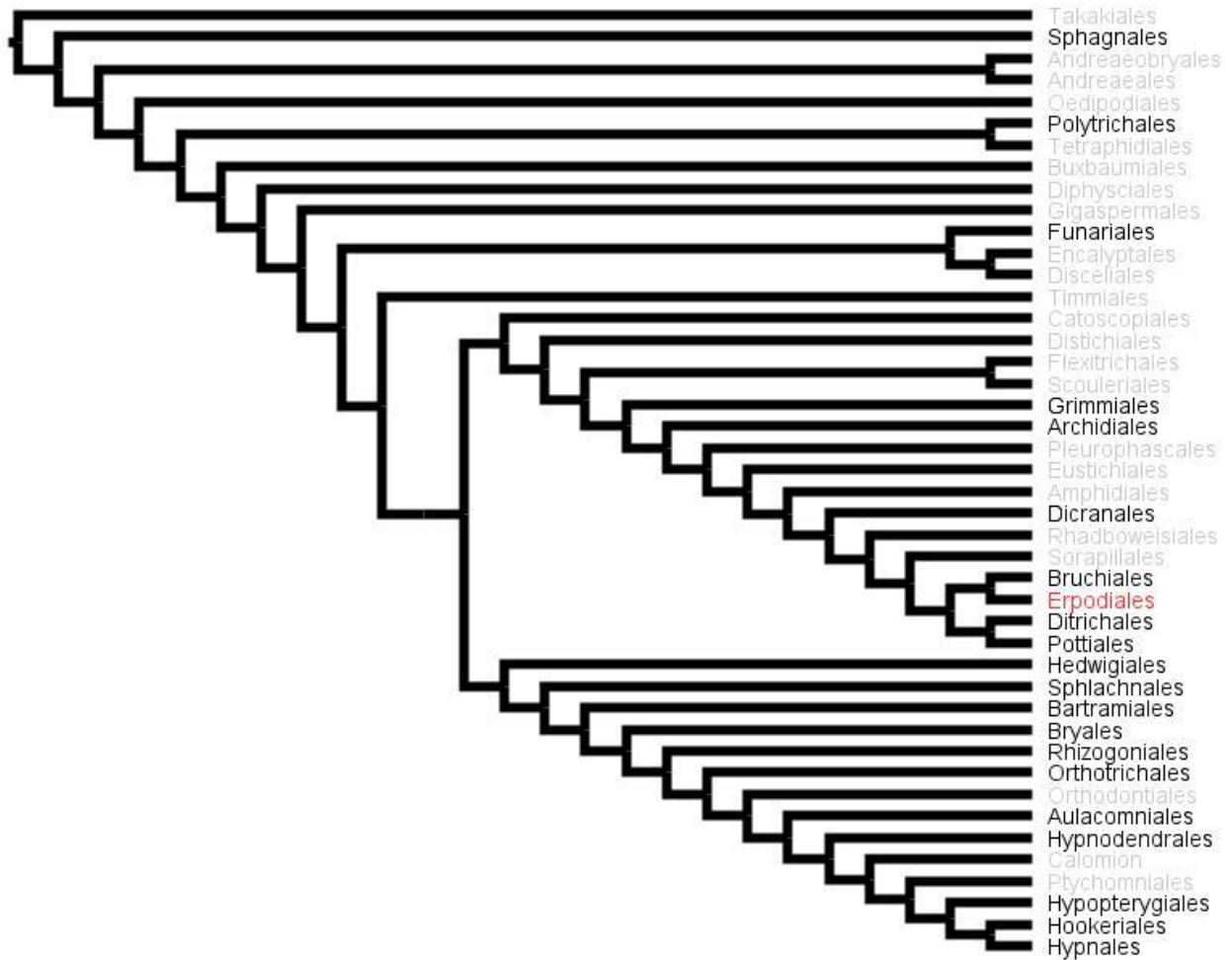


Figure: Estimated phylogeny of extant mosses, see analyses by: [Bechteler et al. 2023](#) (nuclear), [Li et al. 2024](#) (plastid). Black font=contains taxa native to Florida; Asterisk=non-native, naturalized; Gray font=not native, not included.

Key to groups (see [Vitt & Buck 1992](#))

## SPHAGNALES

### SPHAGNACEAE {AFP}

*Sphagnum* {AFP} Key adapted from [McQueen & Andrus \(2007\)](#).

1. Outer stem cortical cell walls reinforced with spiral fibrils (sect. *Sphagnum*) ... Key A
1. Outer stem cortical cell walls smooth [2]
2. Outer cortical cells of branches nearly all porose at distal end; branch leaves with denticulate margins and bordered with resorption furrow (sect. *Rigida*) ... Key B
2. Outer cortical cells of branches of two kinds, smaller aporose cells and larger retort-shaped cells with pore at apical end; branch leaf margins usually entire [3]
3. Branch leaf hyaline cells e fibrillose (sect. *Isocladus*) ... Key C
3. Branch leaf hyaline cells fibrillose [4]
4. Branch and stem leaves isophyllous; branches in fascicles of 2-3, spreading and pendent branches similar, or plants may have single or no branches; hyaline cells of branch leaves usually with numerous pores along the commissures, giving a bead-like appearance; chlorophyllous cells of branch leaves in transverse section barrel-shaped, truncate-elliptic to trapezoidal, exposed equally on both surfaces or slightly broader on the convex surface (sect. *Subsecunda*) ... Key D
4. Branch and stem leaves usually anisophyllous; 3-6 branches per fascicle, spreading branches clearly differentiated from pendent branches; hyaline cells of branch leaves with scattered pores along the commissures or free; chlorophyllous cells of branch leaves in transverse section triangular, truncate-trapezoidal to elliptical and may be more broadly exposed on either surface [5]
5. Branch leaf chlorophyllous cells lenticular, truncate-elliptic to trapezoidal; exposed more or less equally on both surfaces or slightly more broadly on convex surface (sect. *Subsecunda*) ... Key D
5. Branch leaf chlorophyllous cells triangular to trapezoidal, exposed much more broadly on concave or convex surface [6]
6. Chlorophyllous cells of branch leaves triangular to trapezoidal in transverse section, more broadly exposed on the concave surface; in plants with stellate capitula, the branches between the rays of the capitulum single; stem leaves upright on the stem (sect. *Acutifolia*) ... Key E
6. Chlorophyllous cells of branch leaves triangular to trapezoidal in transverse section, more broadly exposed on the convex surface; in plants with stellate capitula, the branches between the rays of the capitulum occur in pairs; stem leaves often hanging downward on the stem (sect. *Cuspidata*) ... Key F

Key A: sect. *Sphagnum*

1. Branch leaf chlorophyllous cells in transverse section  $\pm$  equilateral-triangular, often with conspicuous vertically oriented comb-fibrils on the hyaline cells where overlying chlorophyllous cells [2]
1. Branch leaf chlorophyllous cells in transverse section narrowly triangular, trapezoidal, truncate-elliptic, elliptic or lenticular; comb-fibrils if present horizontally oriented [3]
2. Branch cortical cells with flat end walls or with weak funnel-like projections extending less than halfway into the next cell; branches not clavate or if clavate, with pointed ends S. affine

- 2. Branch cortical cells with funnel-like projections often extending halfway or more into the next cell; branches strongly clavate and blunt ... *S. portoricense*
- 3. Branch leaf chlorophyllous cells in transverse section short-elliptic, and enclosed on both surfaces; plants purplish red when pigmented ... *S. magniae*
- 3. Branch leaf chlorophyllous cells in transverse section narrowly triangular, rectangular to truncate-elliptic, exposed equally on both surfaces or more broadly on the convex surface [4]
- 4. Superficial stem cortical cells with fibrils weak or lacking; chlorophyllous cells rectangular to truncate-elliptic, exposed equally on both surfaces ... *S. perichaetiae*
- 4. Superficial stem cortical cells with strong fibrils; chlorophyllous cells triangular, exposed more broadly on concave surface [5]
- 5. Branch leaf hyaline cells where overlying chlorophyllous cells often with irregular worm-like ridges, especially at the leaf base; pores on the convex surface numerous, small and round to elliptic ... *S. henryense*
- 5. Branch leaf hyaline cells smooth throughout; pores on the convex surface elliptic to flattened-elliptic, not numerous ... *S. palustre*

Key B: sect. *Rigida*

- 1. Chlorophyllous cells of branch leaves elliptic in transverse section and completely enclosed on both surfaces, adjacent hyaline cell walls smooth; stem leaves lingulate to oblong-triangular ... *S. compactum*
- 1. Chlorophyllous cells of branch leaves elongate-triangular to ovate-triangular, enclosed on the adaxial surface and exposed on the convex surface, adjacent hyaline cell walls minutely papillose; stem leaves bluntly deltoid ... *S. strictum*

Key C: sect. *Isocladus*

- 1. Branch leaves with 20-40 pores, each less than 0.25 width of cell, mostly in 2 rows, branch leaves ovate-ligulate with a broad, rounded, truncate apex ... *S. cribrosum*
- 1. Branch leaves with 8-12 pores, each more than 0.25 width of cell, mostly in 1 row, branch leaves lanceolate to linear-lanceolate with a narrow tubular apex ... *S. macrophyllum*

Key D: sect. *Subsecunda*

- 1. Stem cortex undifferentiated, superficial layer composed of small thick-walled cells ... *S. microcarpum*
- 1. Stem cortex differentiated with one or more superficial layers of enlarged thin-walled cells [2]
- 2. Stem cortex of more than 1 superficial layer of enlarged, thin-walled cells ... *S. carolinianum*
- 2. Stem cortex 1 superficial layer of enlarged, thin-walled cells [3]
- 3. Stem simple without branches ... *S. cyclophyllum*
- 3. Stems with branches arranged in fascicles ... *S. lescurii*

Key E: sect. *Acutifolia*

- 1. Branch leaves with denticulate margin along a resorption furrow ... *S. molle*
- 1. Branch leaf margins plain and bordered without a resorption furrow [2]
- 2. Branch leaves 5-ranked ... *S. bartlettianum*
- 2. Branch leaves unranked ... *S. tenerum*

Key F: sect. *Cuspidata*

- 1. Branch leaves with serrulate margins [2]
- 1. Branch leaves entire along margins [3]

2. Branch leaves with broad, rounded apex ... *S. fitzgeraldii*
2. Branch leaves with pointed involute apex ... *S. trinitense*
3. Stem leaves triangular to triangular-lingulate, acute to obtuse but rarely erose ... *S. cuspidatum*
3. Stem leaves lingulate to triangular-lingulate with more or less erose apex ... *S. recurvum*

*Sphagnum affine* Renauld & Cardot — {AFP}  
*Sphagnum bartlettianum* Warnst.— {AFP}  
*Sphagnum carolinianum* R. E. Andrus— {AFP}  
*Sphagnum compactum* Lam. and DC.— {AFP}  
*Sphagnum cribrosum* Lindb.— {AFP}  
*Sphagnum cuspidatum* Hoffm.— {AFP}  
*Sphagnum cyclophyllum* Sull. — {AFP}  
*Sphagnum fitzgeraldii* Lesq. & James— {AFP}  
*Sphagnum henryense* Warnst.— {AFP}  
*Sphagnum lescurii* Sull.— {AFP}  
*Sphagnum macrophyllum* Brid.— {AFP}  
*Sphagnum magniae* A.J. Shaw, Aguero, & Nieto-Lugilde— {AFP} Formerly known as the misapplied *S. magellanicum*.  
*Sphagnum microcarpum* Warnst.— {AFP}  
*Sphagnum molle* Sull.— {AFP}  
*Sphagnum palustre* L.— {AFP}  
*Sphagnum perichaetiale* Hampe— {AFP}  
*Sphagnum portoricense* Hampe— {AFP}  
*Sphagnum recurvum* P. Beauv.— {AFP}  
*Sphagnum strictum* Sull.— {AFP}  
*Sphagnum trinitense* Müll. Hal.— {AFP}  
*Sphagnum tenerum* Sull.— {AFP}

## TETRAPHIDALES

### TETRAPHIDACEAE

*Tetraphis pellucida* Hedw. —

## POLYTRICHALES

### POLYTRICHACEAE {AFP}

*Atrichum* {AFP}

*Atrichum angustatum* (Brid.) Bruch & Schimp.— {AFP}

*Atrichum crispum* (James) Sull.— {AFP}

*Atrichum cylindricum* (F. Weber) G.L. Sm.— {AFP}

*Pogonatum* {AFP}

*Pogonatum brachyphyllum* (Michx.) P. Beauv.— {AFP}

*Pogonatum pensilvanicum* (Hedw.) P. Beauv.— {AFP}

*Polytrichum* {AFP}

*Polytrichum commune* Hedw.— {AFP}

## FUNARIALES

## FUNARIACEAE {AFP}

### Aphanorrhagma {AFP}

*Aphanorrhagma serratum* (Wilson & Hook.) Sull.— {AFP}

### Entosthodon {AFP}

*Entosthodon drummondii* Sull.— {AFP}

### Funaria {AFP}

*Funaria flavicans* Michx.— {AFP}

*Funaria hygrometrica* Hedw.— {AFP}

*Funaria serrata* Brid.— {AFP}

### Physcomitrium {AFP}

*Physcomitrium collenchymatum* Gier— {AFP}

*Physcomitrium pyriforme* (Hedw.) Hampe— {AFP}

## 'DICRANIDS' GRIMMIALES

### GRIMMIACEAE {AFP}

#### Grimmia {AFP}

*Grimmia laevigata* (Brid.) Brid.— {AFP}

### PTYCHOMITRIACEAE {AFP}

#### Ptychomitrium {AFP}

*Ptychomitrium drummondii* (Wilson) Sull.— {AFP}

*Ptychomitrium incurvum* (Schwägr.) Spruce— {AFP}

## ARCHIDIALES

### ARCHIDIACEAE {AFP}

#### Archidium {AFP}

*Archidium hallii* Austin— {AFP}

*Archidium minus* Renault & Cardot) Snider— {AFP}

*Archidium ohioense* Müll. Hal.— {AFP}

*Archidium alternifolium* (Dicks. ex Hedw.) Mitt.— {AFP}

*Archidium tenerrimum* Mitt.— {AFP}

## DICRANALES

### CALYMPERACEAE {AFP}

#### Calymperes {AFP}

*Calymperes afzelii* Sw.— {AFP}

*Calymperes erosum* Müll. Hal.— {AFP}

*Calymperes palisotii* Schwaegr.— {AFP}

*Calymperes pallidum* Mitt.— {AFP}

*Calymperes tenerum* Müll. Hal.— {AFP}

### Syrrhopodon {AFP}



*Syrrhopodon gaudichaudii* Mont.— {AFP}  
*Syrrhopodon incompletus* Schwaegr.— {AFP}  
*Syrrhopodon ligulatus* Mont.— {AFP}  
*Syrrhopodon parasticus* (Brid.) Besch.— {AFP}  
*Syrrhopodon prolifer* Schwägr.— {AFP}  
*Syrrhopodon texanus* Sull.— {AFP}

## DICRANACEAE {AFP}

Campylopus {AFP}  
*Campylopus angustiretis* (Austin) Lesq. & James— {AFP}  
*Campylopus arctocarpus* (Hornschuck) Mitt.— {AFP}  
*Campylopus carolinae* Grout— {AFP}  
*Campylopus pyriformis* (Schultz) Brid.— {AFP}  
*Campylopus surinamensis* Müll. Hal. — {AFP}

## Dicranella {AFP}

*Dicranella heteromalla* (Hedw.) Schimp.— {AFP}  
*Dicranella hilariana* (Montagne) Mitt.— {AFP}  
*Dicranella lindigiana* (Hampe) Mitt.— {AFP}  
*Dicranella varia* (Hedw.) Schimp.— {AFP}

## Dicranodontium {AFP}

*Dicranodontium denudatum* (Brid.) E. Britton— {AFP}

## Dicranum {AFP}

*Dicranum condensatum* Hedw.— {AFP}  
*Dicranum flagellare* Hedw.— {AFP}  
*Dicranum scoparium* Hedw.— {AFP}

## FISSIDENTACEAE {AFP}

Fissidens {AFP}  
*Fissidens amoenus* Müll. Hal.— {AFP}  
*Fissidens bryoides* Hedw.— {AFP}  
*Fissidens bushii* (Cardot & Thér.) Cardot & Thér.— {AFP}  
*Fissidens dubius* P. Beauv.— {AFP}  
*Fissidens elegans* Brid.— {AFP}  
*Fissidens fontanus* (Bach. Pyl.) Steudl.— {AFP}  
*Fissidens hallianus* (Sull. & Lesq.) Mitt.— {AFP}  
*Fissidens leptophyllus* Mont.— {AFP}  
*Fissidens minutulus* Sull.— {AFP}  
*Fissidens obtusifolius* Wilson— {AFP}  
*Fissidens pallidinervis* Mitt. — {AFP}  
*Fissidens pellucidus* Hornsch.— {AFP}  
*Fissidens polypodioides* Hedw.— {AFP}  
*Fissidens santa-clarensis* Thér.— {AFP}  
*Fissidens serratus* Müll. Hal. — {AFP}  
*Fissidens subbasilaris* Hedw.— {AFP}  
*Fissidens taxifolius* Hedw.— {AFP}

*Fissidens adianthoides* Hedw.— {AFP}

*Fissidens zollingeri* Mont. — {AFP}

## LEUCOBRYACEAE {AFP}

*Leucobryum* {AFP}

*Leucobryum albidum* (P. Beauv.) Lindb.— {AFP}

*Leucobryum glaucum* (Hedw.) Ångström— {AFP}

## BRUCHIALES

### BRUCHIACEAE {AFP}

*Bruchia* {AFP}

*Bruchia drummondii* Hampe ex E. Britton— {AFP}

*Bruchia flexuosa* (Schwägr.) Müll. Hal.— {AFP}

*Bruchia ravenelii* Wilson ex Sull.— {AFP}

*Bruchia carolinae* Austin— {AFP}

*Trematodon* {AFP}

*Trematodon longicollis* Michx.— {AFP}

## ERPODIALES

### ERPODIACEAE {AFP}

*Erpodium* {AFP}

\*\**Erpodium domingense* (Spreng.) Müll. Hal.— {AFP} Miami-Dade Co. Known only from trunks of *Phoenix*.

*Solmsiella* {AFP}

*Solmsiella biseriata* (Austin) Steere— {AFP}

## DITRICHALES

### DITRICHACEAE {AFP}

*Ceratodon* {AFP}

*Ceratodon purpureus* (Hedw.) Brid.— {AFP}

*Ditrichum* {AFP}

*Ditrichum pallidum* (Hedw.) Hampe— {AFP}

*Ditrichum pusillum* (Hedw.) Hampe— {AFP}

*Eccremidium* {AFP}

*Eccremidium floridanum* H. A. Crum— {AFP}

*Pleuridium* {AFP}

*Pleuridium subulatum* (Hedw.) Rabenh.— {AFP}

*Pleuridium ravenelii* Austin— {AFP}

*Pleuridium sullivantii* Austin— {AFP} Known from one collection from 1876.

## POTTIALES

## EPHEMERACEAE {AFP}

### Ephemerum {AFP}

*Ephemerum crassinervium* (Schwaegr.) Hampe— {AFP}

*Ephemerum cohaerens* (Hedw.) Hampe— {AFP}

*Ephemerum spinulosum* Bruch & Schimp.— {AFP}

### Micromitrium {AFP}

*Micromitrium megalosporum* Austin — {AFP}

*Micromitrium synoicum* (James) Austin— {AFP}

*Micromitrium tenerum* (Bruch & Schimp.) Crosby — {AFP}

## POTTIACEAE {AFP}

### Acaulon {AFP}

*Acaulon muticum* (Hedw.) Müll. Hal.— {AFP}

### Ardeuma {AFP}

*Ardeuma aurantiacum* (Mitt.) R.H. Zander & Hedd.— {AFP}

### Barbula {AFP}

*Barbula convoluta* Hedw.— {AFP}

*Barbula indica* (Hook.) Spreng. var. *indica*— {AFP}

*Barbula unguiculata* Hedw.— {AFP}

### Didymodon {AFP}

*Didymodon rigidulus* Hedw— {AFP}

### Eucladium {AFP}

*Eucladium verticillatum* (Brid.) Bruch & Schimp.— {AFP}

### Gymnostomiella {AFP}

*Gymnostomiella orcuttii* E. B. Bartram— {AFP}

### Hyophila {AFP}

*Hyophila involuta* (Hook.) A. Jaeger — {AFP}

### Hyophiladelphus {AFP}

*Hyophiladelphus agrarius* (Hedw.) R.H. Zander — {AFP}

### Luisierella {AFP}

*Luisierella barbula* (Schwägr.) Steere— {AFP}

### Plaubelia {AFP}

*Plaubelia sprengelii* (Schwegrichen) R. H. Zander— {AFP}

### Pleurochaete {AFP}

*Pleurochaete luteola* (Besch.) Thér.— {AFP}

Tortella {AFP}

*Tortella flavovirens* (Bruch.) Broth.— {AFP}

*Tortella humilis* (Hedw.) Jenn.— {AFP}

Tortula {AFP}

*Tortula acaulon* (With.) R.H. Zander—

*Tortula muralis* Hedw.— {AFP}

*Tortula plinthobia* (Sull. & Lesq.) Broth.— {AFP}

Trichostomum

*Trichostomum crispulum* Bruch—

Tuerckheimia {AFP}

*Tuerckheimia svihlae* (E. B. Bartram) R.H. Zander— {AFP}

Weissia {AFP}

*Weissia controversa* Hedw.— {AFP}

*Weissia jamaicensis* (Mitt.) Grout— {AFP}

*Weissia ludoviciana* (Sull.) W.D. Reese & B.A.E. Lemmon— {AFP}

*Weissia muhlenbergiana* Swartz) W.D. Reese & B.A.E. Lemmon — {AFP}

SPLACHNOBRYACEAE {AFP}

Splachnobryum {AFP}

*Splachnobryum obtusum* (Brid.) Müll. Hal.— {AFP}

## 'HYPNIDS'

### BARTRAMIALES

BARTRAMIACEAE {AFP}

Philonotis {AFP}

*Philonotis gracillima* Ångstr.— {AFP}

*Philonotis longiseta* (Michx.) E. Britton — {AFP}

*Philonotis marchica* (Hedw.) Brid.— {AFP}

*Philonotis sphaerocarpa* (Hedw.) Brid.— {AFP}

*Philonotis fontana* (Hedw.) Brid.— {AFP}

*Philonotis uncinata* (Schwägr.) Brid.— {AFP}

### HEDWIGIALES

HEDWIGIACEAE {AFP}

Hedwigia {AFP}

*Hedwigia ciliata* (Hedw.) P. Beauv.— {AFP}

### SPLACHNALES

MEESIACEAE {AFP}

Leptobryum {AFP}

*Leptobryum pyriforme* (Hedw.) Wilson— {AFP}

## SPLACHNACEAE {AFP}

### Splachnum {AFP}

*Splachnum pensylvanicum* (Brid.) Grout ex H. A. Crum— {AFP}

## BRYALES

### BRYACEAE {AFP}

#### Brachymenium {AFP}

*Brachymenium macrocarpum* Cardot — {AFP}

#### Bryum {AFP}

*Bryum argenteum* Hedw.— {AFP}

#### Gemmabryum {AFP}

*Gemmabryum apiculatum* (Schwägr.) J. R. Spence & H. P. Ramsay— {AFP}

*Gemmabryum coronatum* (Schwägr.) J. R. Spence & H. P. Ramsay— {AFP}

*Gemmabryum exile* (Dozy & Molk.) J. R. Spence & H. P. Ramsay— {AFP}

#### Rosulabryum {AFP}

*Rosulabryum capillare* (Hedw.) J. R. Spence— {AFP}

*Rosulabryum pseudocapillare* (Besch.) Ochyra— {AFP}

## MIELCHHOFERiaceae

### Pohlia

*Pohlia nutans* (Hedw.) Lindb.

### MNIACEAE {AFP}

*Mnium* {AFP} In FNA (vol. 28), *M. hornum* was reported by McIntosh & Newmaster, but no specimens are known.

*Mnium thomsonii* Schimp.— {AFP}

#### Plagiomnium {AFP}

*Plagiomnium ciliare* (Müll. Hal.) T.J. Kop. — {AFP}

*Plagiomnium cuspidatum* (Hedw.) T.J. Kop.— {AFP}

*Plagiomnium floridanum* R. E. Wyatt & Odrzyk. — {AFP}

## RHIZOGONIALES

### RHIZOGONIACEAE {AFP}

#### Pyrrhobryum {AFP}

*Pyrrhobryum spiniforme* (Hedw.) Mitt.— {AFP}

## ORTHOTRICHALES

### ORTHOTRICHACEAE {AFP}

#### Groutiella {AFP}

*Groutiella tomentosa* (Hornschuck) Wijk & Margad.— {AFP}

*Groutiella tumidula* (Mitt.) Vitt.— {AFP}

Macromitrium {AFP}

*Macromitrium richardii* Schwägr.— {AFP}

Orthotrichum

*Orthotrichum ohioense* Sull. & Lesq.—Panhandle, rare.

*Orthotrichum pusillum* Mitt.—Reported from three collections, rare.

Schlotheimia {AFP}

*Schlotheimia rugifolia* (Hook.) Schwaegr.— {AFP}

## AULOCOMNIALES

AULACOMNIACEAE {AFP}

Arrhenopterum {AFP}

*Arrhenopterum heterostichum* Hedw.— {AFP}

Aulacomnium {AFP}

*Aulacomnium palustre* (Hedw.) Schwägr.— {AFP}

## HYPNODENDRALES

RACOPILACEAE {AFP}

Racopilum {AFP}

*Racopilum tomentosum* (Hedw.) Brid.— {AFP}

## HOOKERIALES

PILOTRICHACEAE {AFP}

Callicostella {AFP}

*Callicostella pallida* (Hornsch.) Ångstr.— {AFP}

Cyclodictyon {AFP}

*Cyclodictyon varians* (Sull.) Kuntze— {AFP}

## Incertae Sedis

RUTENBERGIACEAE {AFP}

Pseudocryphaea {AFP}

*Pseudocryphaea domingensis* (Sprengel) W. R. Buck— {AFP}

## HYPNALES

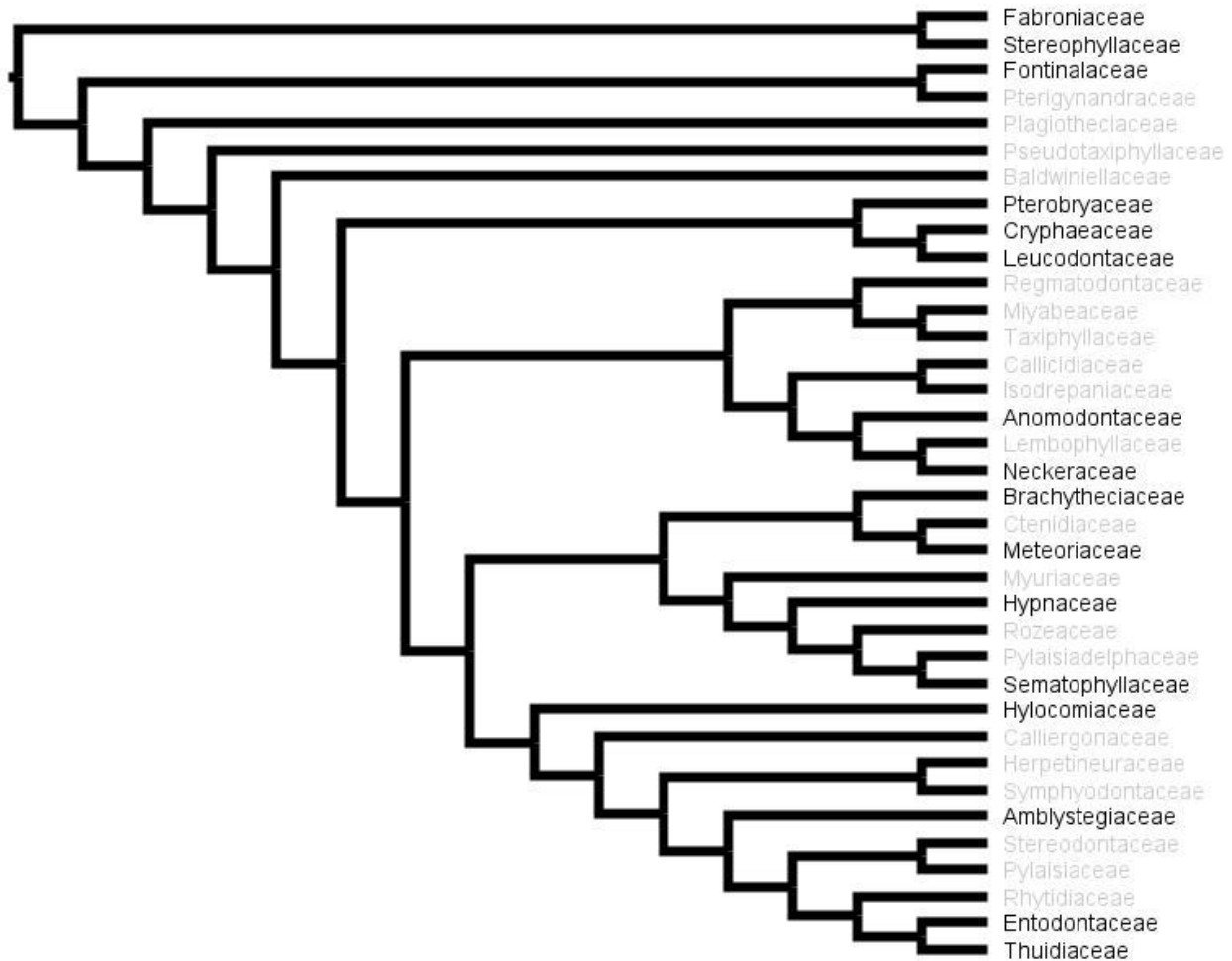


Figure: Estimated phylogeny of extant Hypnales, see analyses by: [Bechteler et al. 2023](#) (nuclear), [Li et al. 2024](#) (plastid). Black font=contains taxa native to Florida; Gray font=not native, not included.

## FABRONIACEAE

*Schwetschkeopsis* {AFP}

*Schwetschkeopsis fabronia* (Schwägr.) Broth.— {AFP}

## STEREOPHYLLACEAE {AFP}

*Entodontopsis* {AFP}

*Entodontopsis leucostega* (Brid.) W. R. Buck— {AFP}

*Stereophyllum* {AFP}

*Stereophyllum radiculosum* (Hook.) Mitt.— {AFP}

## FONTINALACEAE {AFP}

*Brachelyma* {AFP}

*Brachelyma subulata* (P. Beauv.) Cardot— {AFP}

*Dichelyma* {AFP}

*Dichelyma capillaceum* (With.) Myrin— {AFP}

Fontinalis {AFP}

*Fontinalis novae-angliae* Sull.— {AFP}

*Fontinalis sphagnifolia* (Müll. Hal.) Wijk & Margad.— {AFP}

*Fontinalis sullivantii* Lindb.— {AFP}

PTEROBRYACEAE {AFP}

Henicodium {AFP}

*Henicodium geniculatum* (Mitt.) W. R. Buck— {AFP}

Jaegerina {AFP}

*Jaegerina scariosa* (Lorentz) Arzeni— {AFP}

Pireella {AFP}

*Pireella cymbifolia* (Sull.) Cardot— {AFP}

*Pireella pohlii* (Schwägr.) Cardot — {AFP}

CRYPHAEACEAE {AFP}

Cryphaea {AFP}

*Cryphaea filiformis* (Hedw.) Brid.— {AFP}

*Cryphaea glomerata* Schimp. ex Sull.— {AFP}

*Cryphaea nervosa* (Hook. & Wilson) Müll. Hal.— {AFP}

Schoenobryum {AFP}

*Schoenobryum concavifolium* (Griff.) Gangulee— {AFP}

LEUCODONTACEAE {AFP}

Forsstroemia {AFP}

*Forsstroemia trichomitria* (Hedw.) Lindb.— {AFP}

Leucodon {AFP}

*Leucodon julaceus* (Hedw.) Sull.— {AFP}

Octoblepharum {AFP}

*Octoblepharum albidum* Hedw.— {AFP} Peninsula, parts of the panhandle (pantropical). Most common on *Sabal* trunks.

ANOMODONTACEAE {AFP}

Anomodon {AFP}

*Anomodon attenuatus* (Hedw.) Huebener— {AFP}

*Anomodon minor* (Hedw.) Lindb.— {AFP}

*Anomodon rostratus* (Hedw.) Schimp.— {AFP}

*Anomodon tristis* (Ces.) Sull. & Lesq. Ex Sull. — {AFP}

Herpetineurum {AFP}

*Herpetineurum toccoae* (Sull. & Lesq. Ex Sull. In Gray) Card.— {AFP}



## NECKERACEAE {AFP}

### Neckeropsis {AFP}

*Neckeropsis undulata* (Hedw.) Reichardt— {AFP}

*Neckeropsis disticha* (Hedw.) Kindb.— {AFP}

## BRACHYTHECIACEAE {AFP}

### Brachythecium {AFP}

*Brachythecium acuminatum* (Hedw.) Austin— {AFP}

*Brachythecium laetum* (Brid.) Schimp.— {AFP}

*Brachythecium rotaeantum* De Not.— {AFP}

### Bryhnia {AFP}

*Bryhnia graminicolor* (Brid.) Grout— {AFP}

### Bryoandersonia {AFP}

*Bryoandersonia illecebra* (Hedw.) H. Rob.— {AFP}

### Clasmatodon {AFP}

*Clasmatodon parvulus* (Hampe) Sull.— {AFP}

### Homalotheciella {AFP}

*Homalotheciella subcapillata* (Hedw.) Broth.— {AFP}

### Oxyrrhynchium {AFP}

*Oxyrrhynchium hians* (Hedw.) Loeske — {AFP}

### Rhynchostegium {AFP}

*Rhynchostegium serrulatum* (Hedw.) A. Jaeger— {AFP}

### Sciuro-hypnum {AFP}

*Sciuro-hypnum plumosum* (Hedw.) Ignatov & Huttunen— {AFP}

### Zelometeorium {AFP}

*Zelometeorium patulum* (Hedw.) Manuel— {AFP}

## METEORACEAE {AFP}

### Papillaria {AFP}

*Papillaria nigrescens* (Hedw.) A. Jaeger— {AFP}

## HYPNACEAE {AFP}

### Chryso-hypnum {AFP}

*Chryso-hypnum diminutivum* (Hampe) W. R. Buck— {AFP}

### Hypnum {AFP}

*Hypnum imponens* Hedw.— {AFP}

*Hypnum lindbergii* Mitt.— {AFP}

Isopterygium {AFP}

*Isopterygium tenerum* (Sw.) Mitt.— {AFP}

Platygyrium {AFP}

*Platygyrium repens* (Brid.) Schimp.— {AFP}

Pylaisia {AFP}

*Pylaisia intricata* (Hedw.) Schimp.— {AFP}

*Pylaisia selwynii* Kindb.— {AFP}

Taxiphyllum {AFP}

*Taxiphyllum alternans* (Cardot)Z. Iwats.— {AFP}

*Taxiphyllum cuspidifolium* (Cardot)Z. Iwats.— {AFP}

*Taxiphyllum taxirameum* (Mitt.) M. Fleisch.— {AFP}

Vesicularia {AFP}

*Vesicularia vesicularis* (Schwagrichen) Broth.— {AFP}

SEMATOPHYLLACEAE {AFP}

Acroporium {AFP}

*Acroporium smallii* (R. S. Williams) H. A. Crum & L. E. Anderson— {AFP}

Donnellia {AFP}

*Donnellia commutata* (Müll. Hal.) W. R. Buck— {AFP}

Sematophyllum {AFP}

*Sematophyllum adnatum* (Michx.) E. Britton— {AFP}

*Sematophyllum demissum* (Wilson) Mitt.— {AFP}

*Sematophyllum subpinnatum* (Brid.) E. Britton— {AFP}

Taxithelium {AFP}

*Taxithelium planum* (Brid.) Mitt.— {AFP}

HYLOCOMIACEAE {AFP}

Climacium {AFP}

*Climacium americanum* Brid.— {AFP}

Thelia {AFP}

*Thelia asprella* (Schimp.) Sull. & Lesq.— {AFP}

*Thelia hirtella* (Hedw.) Sull. & Lesq.— {AFP}

*Thelia lescurii* Sull.— {AFP}

AMBLYSTEGIACEAE {AFP}

Amblystegium {AFP}

*Amblystegium serpens* (Hedw.) Schimp.— {AFP}

Anacamptodon {AFP}

*Anacamptodon splachnoidea* (Froel. ex Brid.) Brid.— {AFP}

Campyliadelphus {AFP}

*Campyliadelphus chrosphyllus* (Brid.) Kanda— {AFP}

Campylophyllum {AFP}

*Campylophyllum hispidulum* (Brid.) Hedenäs— {AFP}

Drepanocladus {AFP}

*Drepanocladus polygamus* (Schimp.) Hedenäs— {AFP}

Hygroamblystegium {AFP}

*Hygroamblystegium varium* (Hedw.) Mönk.— {AFP}

Leptodictyum {AFP}

*Leptodictyum riparium* (Hedw.) Warnst.— {AFP}

Platylomella {AFP}

*Platylomella lescurii* (Sull.) A. L. Andrews— {AFP}

Pseudocampylium {AFP}

*Pseudocampylium radicale* (P. Beauv.) Vanderp. & Hedenäs— {AFP}

ENTODONTACEAE {AFP}

Entodon {AFP}

*Entodon challengerii* (Paris) Cardot— {AFP}

*Entodon cladorrhizans* (Hedw.) Müll. Hal.— {AFP}

*Entodon macropodus* (Hedw.) Müll. Hal. — {AFP}

*Entodon seductrix* (Hedw.) Müll. Hal. — {AFP}

LESKEACEAE {AFP}

Haplocladium {AFP}

Key from [Magill \(2014\)](#)

1. Stem leaves 2-plicate basally; paraphyllia filamentous, infrequently branched; branch leaves somewhat distant ... *H. microphyllum*

1. Stem leaves not plicate; paraphyllia filamentous to subfoliose, frequently branched; branch leaves crowded ... *H. virginianum*

*Haplocladium microphyllum* (Hedw.) Broth.— {AFP}

*Haplocladium virginianum* (Brid.) Broth.— {AFP}

Leskea {AFP}

Key from [Redfearn, Jr. \(2014\)](#)

1. Branch leaves 0.2-0.5 mm; distal laminal cells 4-7  $\mu\text{m}$  ... *L. australis*

1. Branch leaves 0.4-0.8 mm; distal laminal cells 6-11  $\mu\text{m}$  [2]

2. Branches ± tightly foliate; leaf apices acute or sometimes narrowly blunt; leaves ± 2-plicate; margins irregularly revolute proximally, especially when dry; endostome segments as long as exostome teeth; operculum ± pointed ... *L. gracilescens*

Branches loosely foliate; leaf apices rounded-obtuse to sometimes acute or acuminate; leaves not plicate (stem leaves occasionally slightly plicate); margins not revolute; endostome segments less than 1/3 exostome teeth length; operculum blunt ... *L. obscura*

***Leskea australis*** Sharp— {AFP}

***Leskea gracilescens*** Hedw.— {AFP}

***Leskea obscura*** Hedw.— {AFP}

## THUIDIACEAE {AFP}

### Cyrto-hypnum {AFP}

Key adapted from [Buck \(2014\)](#)

1. Stems 1-pinnate; branch leaves 0.5 mm long, strongly incurved when dry ... *C. involvens*

1. Stems 2-pinnate (sometimes inconspicuous); branch leaves 0.1-0.3 mm long, erect to somewhat incurved when dry [2]

2. Stems and branches papillose ... *C. pygmaeum*

2. Stems and branches smooth [3]

3. Stems weakly and irregularly 2-pinnate; paraphyllia cells 2:1; setae smooth; perichaetial leaf margins serrulate distally ... *C. minutulum*

3. Stems regularly 2-pinnate; paraphyllia cells 1:1; setae papillose; perichaetial leaf margins ciliate ... *C. schistocalyx*

***Cyrto-hypnum involvens*** (Hedw.) W. R. Buck— {AFP}

***Cyrto-hypnum minutulum*** (Hedw.) W. R. Buck & H. A. Crum— {AFP}

***Cyrto-hypnum pygmaeum*** (Schimp.) W. R. Buck— {AFP}

***Cyrto-hypnum schistocalyx*** (Müll. Hal.) W. R. Buck— {AFP}

### Thuidium {AFP}

Key adapted from [Crum \(2014\)](#)

1. Stem leaf apices short-pointed, margins plane or sometimes reflexed basally; distal laminal cells appearing 1-3-papillose because papillae 2-fid ... *T. alleniorum*

1. Stem leaf apices acuminate, margins revolute throughout; laminal cells coarsely 1-papillose, not appearing multipapillose, papillae sometimes 2-fid ... *T. delicatulum*

***Thuidium alleniorum*** Austin— {AFP}

***Thuidium delicatulum*** (Hedw.) Schimp.— {AFP}

## TRACHEOPHYTES

1. Stems with microphylls, with a singular vascular trace or vein, rarely branching, lacking a leaf gap ... Lycopods

1. Stems with megaphylls, with branched veins, with a leaf gap ... Euphyllophytes

## LYCOPODIOPSIDA

## LYCOPODIALES

### LYCOPODIACEAE {AFP}

1. Terrestrial; horizontal stems present; upright shoot systems alternating along rhizome; roots originating and emerging at same place; sporangia borne in axils of highly modified, reduced sporophylls aggregated into upright or nodding or pendent strobili; spores reticulate or rugulate ... *Lycopodiella*

1. Epiphytic; horizontal stems absent; upright parts of shoots clustered; roots traveling in stem cortex some distance before emerging; sporangia borne in axils of unmodified leaves; spores pitted to small-grooved ... *Phlegmariurus dichotomus*

### *Lycopodiella* {AFP}

1. Upright shoots with numerous branches; leaves linear to needlelike; strobili 4-10 mm long, nodding or pendent at lateral shoot tips (*Palhinhaea*) ... *L. cernua*

1. Upright shoots unbranched or sparingly branched; leaves linear-lanceolate to lanceolate; strobili 10-90 mm long, erect on upright shoots [2]

2. Horizontal stems with lateral leaves larger than median leaves and lying flat on substrate, the leaves entire; peduncles with scattered, scalelike leaves, rachis clearly visible; sporophylls shorter than leaves of peduncles (*Pseudolycopodiella*) ... *L. caroliniana*

2. Horizontal stems with monomorphic, supine, or arching leaves, the leaves entire or with marginal ciliate teeth; peduncles leafy with crowded unmodified leaves, rachis hidden; sporophylls subequal or longer than leaves of peduncles (*Lycopodiella* s.str.) [3]

3. Horizontal stem leaves with marginal teeth absent or sparse; peduncular leaves mostly strict to appressed; strobilus 3-4(5) mm wide, 0-2 mm thicker than upright shoot ... *L. appressa*

3. Horizontal stem leaves commonly with marginal teeth; peduncular leaves mostly spreading to ascending; strobilus (5)6-26 mm wide, 3-6 mm thicker than upright shoot [4]

4. Horizontal stems (excluding leaves) (1.5)2.2-4.5 mm wide; peduncle (2.1)2.4-3.7 mm wide; largest leaves 0.5-0.7(1.2) mm wide [5]

4. Horizontal stems (excluding leaves) 0.8-2.2(2.7) mm wide, prostrate to weakly arching; peduncle 1-2(2.3) mm wide; largest leaves 0.8-1.8 mm wide [6]

5. Horizontal stems strongly arching; peduncle erect; sporophylls spreading; strobilus (8)10-18 mm wide ... *L. alopecuroides*

5. Horizontal stems weakly arching; peduncle lax; sporophylls ascending; strobilus 4-11(15) mm wide ... *L. ×copelandii*

6. Sporophylls ascending; strobilus 5-10(12) mm wide ... *L. ×brucei*

6. Sporophylls divergent to spreading; strobilus (11)13-26 mm wide [7]

7. Horizontal stems prostrate; peduncles 1(2), stiffly erect; aerenchyma absent in stems ... *L. prostrata*

7. Horizontal stems somewhat arching; peduncles (1)2-3(4), flexible; aerenchyma well developed in stems ... *L. alopecuroides* × *L. prostrata*

***Lycopodiella alopecuroides*** (L.)Cranfill— {AFP}

***Lycopodiella appressa*** (Chapm.)Cranfill— {AFP}

***Lycopodiella ×brucei*** Cranfill— {AFP}

***Lycopodiella caroliniana*** (L.)Pic.Serm.— {AFP}

***Lycopodiella cernua*** (L.)Pic.Serm.— {AFP} Commercially Exploited.

***Lycopodiella ×copelandii*** (Eiger)Cranfill— {AFP}

***Lycopodiella prostrata*** (R.M.Harper)Cranfill— {AFP}

## Phlegmariurus {AFP}

*Phlegmariurus dichotomus* (Jacq.)W.H.Wagner— {AFP} State Endangered.

## ISOETALES

### ISOETACEAE {AFP}

#### Isoetes {AFP}

1. Megaspores of variable size, shape, and ornamentation; sterile hybrids ... *Isoetes* hybrids
1. Megaspores of uniform size, shape, and ornamentation; fertile species [2]
2. Velum covering 80-100 percent of sporangium; megaspores 250-500 um wide, with low, broad tubercles or ridges, girdle smooth; 2n=22 [3]
2. Velum covering 10-30(50) percent of sporangium; megaspores 400-610 um wide, cristate to reticulate with thin ridges, girdle obscure; 2n=44 or 66 [4]
3. Leaves 1.25-1.5 mm wide; megaspores ca. 500 um wide, with dense ornamentation pattern of small tubercles ... *I. flaccida* var. *chapmanii*
3. Leaves ca. 1.0 mm wide; megaspores 250-450 um wide, with coarse ornamentation pattern of broad tubercles or loosely interconnected vermiform mounds ... *I. flaccida* var. *flaccida*
4. Megaspores (460)575-610 um wide, cristate to reticulate with thick-walled reticulate ornamentation; 2n=66 ... *I. boomii*
4. Megaspores 400-580 um wide, distinctly reticulate with dense pattern of tall, short-crested, almost echinate muri; 2n=44 [5]
5. Leaves 1-2.5 mm wide at mid-length, dark green to bright green or dull olive-green with whitish to pale brownish green bases; megaspore ornamentation moderately to evenly reticulate with few or no stand-alone short muri or tubercles, usually with equatorial band absent or a plain band with few spines ... *I. appalachiana*
5. Leaves 0.5-1.5 mm wide at mid-length, blackish-green to olive green in age or upon drying; megaspore ornamentation broken-reticulate to almost spiny with numerous tubercles often with short, mostly stand-alone muri or with broken ridges, usually with an equatorial band of numerous spines ... *I. hyemalis*

*Isoetes appalachiana* D.F.Brunt. & D.M.Britton— {AFP} State Endangered.

*Isoetes boomii* Luebke— {AFP} State Endangered.

*Isoetes flaccida* Shuttlew. ex A.Braun— {AFP}

*Isoetes hyemalis* D.F.Brunt.— {AFP} State Endangered.

## SELAGINALES

### SELAGINELLACEAE {AFP}

#### Selaginella {AFP}

1. Leaves on aerial stems monomorphic, not in distinct ranks, axillary leaves absent at branching points (Bryodemsa or sect. Homoeophyllae or subgenus Tetragonostachys) [2]
1. Leaves on aerial stems dimorphic, arranged in 4 ranks (2 median, 2 lateral), axillary leaves present at branching points [3]
2. Underground (rhizomatous) stem leaves not scalelike; rhizophores mostly aerial; sporophyll base pubescent; leaf and sporophyll apices often puberulent ... *S. arenicola* var. *acanthonota*
2. Underground (rhizomatous) stem leaves scalelike; rhizophores mostly subterranean; sporophyll base glabrous; leaf and sporophyll apices glabrous ... *S. arenicola* var. *arenicola*
3. Stems and branches generally stiff; megaspores tuberculate to verrucate, often interconnected, or smooth; microspores verrucate, blunt-spiny, cristate, and lamellate; non-native, escaped from cultivation (Didiclis or ser. Sarmentosae) [4]

3. Stems and branches generally weak, lax; megaspores Stachygynandrum-type of more or less open and irregular meshes or few tuberculate on surface; microspores baculate, bluntnely spiny, verrucate, papillate, or coarse etc.; native species (*Selaginella* s.str.) [6]
4. Stems covered with stiff hairs; base of lateral leaves truncate or rounded; median leaves long-acuminate to bristled ... *S. braunii*
4. Stems glabrous; base of lateral leaves with auricles; median leaves obtuse to acuminate [5]
5. Plants with rather short-branched, prostrate or creeping stems; median leaves 2.2-3.5 mm long, 1.2-1.8 mm wide, apex acuminate ... *S. uncinata*
5. Plants with large aerial, erect, vinelike (high climbing) stems; median leaves 2.4-2.7 mm long, 0.9-1.3 mm wide, apex rounded or obtuse ... *S. willdenowii*
6. Plant forming a mat usually <6 cm wide; lateral leaves 1-1.5 mm long, 0.5-0.9 mm wide; median leaves linear or narrowly lanceolate, 0.7-1.2 mm long, 0.3-0.4 mm wide; apex long-bristled ... *S. eatonii*
6. Plant forming a mat usually >6 cm wide; lateral leaves 1.3-2.3 mm long, 0.7-1.6 mm wide; median leaves ovate to ovate-lanceolate, 1-2 mm, 0.4-0.8 mm wide; apex acute to acuminate; [7]
7. Leaf margins undifferentiated in color or with 1(2) rows of slightly paler cells; stomates of lateral leaves scattered over adaxial surface; lateral branches usually prostrate; microspores verrucose ... *S. apoda*
7. Leaf margins with 3-5 rows of transparent cells; stomates of lateral leaves confined to midrib region on adaxial surface; lateral branches usually ascending to erect; microspores smooth ... *S. ludoviciana*

***Selaginella apoda*** (L.)C.Morren var. ***apoda***— {AFP}

***Selaginella arenicola*** Underw. var. ***acanthonota*** (Underw.)Waterfall— {AFP} Sometimes treated as a subspecies or species, but "In less extreme condition [*acanthonota* and *arenicola*] seem to intergrade imperceptibly and to be poorly differentiated" (Clausen 1946).

***Selaginella arenicola*** Underw. var. ***arenicola***— {AFP}

***Selaginella eatonii*** Hieron. ex Small— {AFP} Accepted as a species by Buck (1978); sometimes treated as a variety of *S. armata*. State Endangered.

***Selaginella ludoviciana*** A.Braun— {AFP} Hybrids with *S. apoda* very rarely form apparently and these have a high proportion of aborted spores (Somers & Buck 1975; Buck & Lucansky 1976); sometimes treated as a variety of *S. apoda*.

^ *Selaginella uncinata* (Desv. ex Poir.)Spring— {AFP}

^ *Selaginella willdenowii* (Desv. ex Poir.)Baker— {AFP}

## EUPHYLLOPHYTES

1. Dispersing by haploid spores that germinate into tiny, free-living, usually photosynthetic gametophytes; chloroplasts in epidermal cells; bluish anthocyanins lacking ... Ferns

1. Dispersing primarily by seeds with diploid embryos that germinate into free-living, usually photosynthetic sporophytes; maternal spore retained on plant, paternal spore dispersed as pollen; epidermal chloroplasts restricted to guard cells; bluish anthocyanins present ... Spermatophytes

## POLYPODIOPSIDA

(ferns, Monilophyta, Pteridopsida):

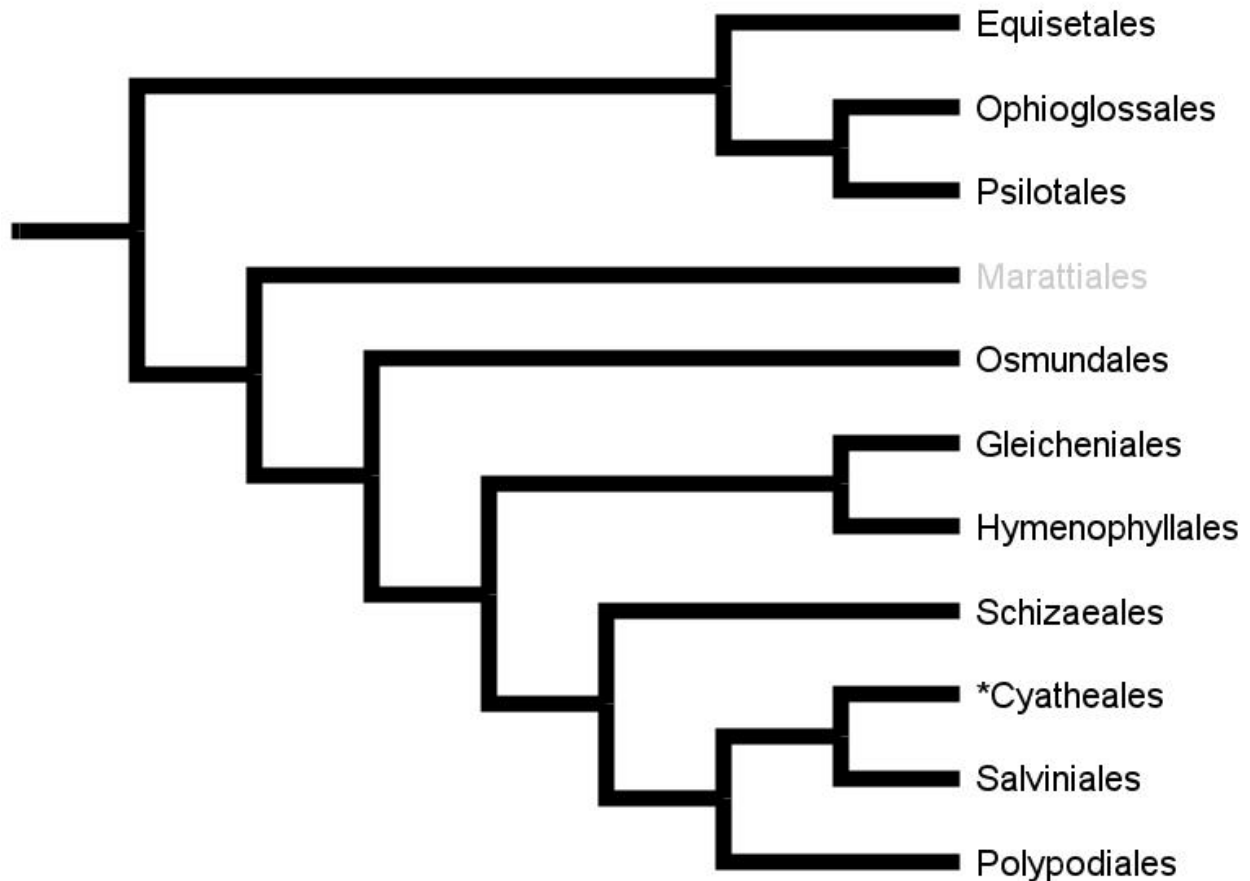


Figure: Estimated phylogeny of extant ferns, see analyses by: [Nitta et al. 2022](#). Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## EQUISETALES

### EQUISETACEAE {AFP}

#### *Equisetum* {AFP}

1. Erect stem usually unbranched; leaf sheath ridges not convex; stomata in 1 line ... *E. praealtum*
1. Erect stem usually with 2-6 branches per node; leaf sheath ridges convex; stomata in (1)2(3) lines ... *E. ramosissimum*

***Equisetum praealtum*** Raf.— {AFP} Often treated as a infraspecific (as *affine*) of *E. hyemale*.  
Phylogeny available with a few samples utilizing 3 plastid loci ([Christenhusz et al. 2019](#)).

\****Equisetum ramosissimum*** Desf.— {AFP}

## OPHIOGLOSSALES

### OPHIOGLOSSACEAE {AFP}



1. Leaves mostly pinnately divided or lobed, veins free, margins entire to dentate or lacerate; sporangial clusters pinnately branched, sporangia sessile or terminating short stalks ... Botrychium

1. Leaves undivided or palmately lobed, veins anastomosing, margins entire; sporangial clusters with sporangia embedded in compact linear spikes ... Ophioglossum

### **Botrychium** {AFP}

1. Petiole of fertile leaf long-exserted from the ground, the sterile green branches subsessile and attached at the base of the rachis of the fertile blades; leaves generally finely dissected with the pinnules mostly lanceolate; leaves present mostly Mar-Oct (Botrypus) ... *B. virginianum*

1. Petiole of fertile leaf short, the rachis of the sterile green blade long and forking distant from where the base of the rachis of the fertile blade; leaves moderately dissected with the pinnules mostly suborbicular, elliptic, or rounded; leaves present year-round or present mostly Oct-Apr (Sceptridium) [2]

2. Roots pale or yellowish, up to 30 main roots; leaves prostrate or nearly so, present mostly Oct-Apr, commonly 2 per plant; sporophore stalks and midrib broadly flattened, fleshy; leaves ... *B. lunarioides*

2. Roots dark or brownish, up to 15 main roots; leaves erect to ascending, present year-round, commonly 1-2 per plants; sporophore stalks and midrib only slightly flattened, not fleshy [3]

3. Basal pinnae mostly subopposite; pinnule venation pinnate, with strong midrib; blades bluish green or green to dark green ... *B. biternatum*

3. Basal pinnae remotely alternate; pinnule venation nearly like ribs of fan but with short midrib; blades dull gray-green ... *B. jenmanii*

***Botrychium biternatum*** (Savigny)Underw.— {AFP}

***Botrychium jenmanii*** Underw.— {AFP}

***Botrychium lunarioides*** (Michx.)Sw.— {AFP}

***Botrychium virginianum*** (L.)Sw.— {AFP}

### **Ophioglossum** {AFP}

1. Epiphyte, lax or pendent; sterile leaf simple or palmately lobed [2]

1. Terrestrial, erect; sterile [3]

2. Sterile blade palmately lobed (young leaves sometimes unlobed) (Cheiroglossa) ... *O. palmatum*

2. Sterile blade linear, sometimes forked (Ophioderma) ... *O. pendulum*

3. Stems spheric, cormlike, fleshy, 3-12 mm wide; leaves arising from deep cavity in top of stem; sterile blades usually lying flat on ground, deltate to cordate ... *O. crotalophoroides*

3. Stems upright, 1-5(10) mm wide; leaves arising at top of stem; sterile blades erect to spreading, mostly ovate to lanceolate [4]

4. Sterile blade veins forming only branching or nonbranching, free, included veinlets within larger areoles ... *O. petiolatum*

4. Sterile blade veins in larger leaves forming small areoles within larger areoles [5]

5. Roots 0.5-1.5 mm wide; sterile blades often folded, ovate to ovate-lanceolate, to 10 cm long, to 4.5 cm wide; sporophore (including stalk) 1.3-2.5 times as long as sterile blade; dried blades uniformly green without pale central band ... *O. engelmannii*

5. Roots 0.2-0.8 mm wide; sterile blades plane, ovate to lanceolate, to 4.5 cm long, to 1.7 cm wide; sporophore (including stalk) 2-6 times length of sterile blade; dried blades commonly with pale central band ... *O. nudicaule*

*Ophioglossum crotalophoroides* Walter— {AFP}  
*Ophioglossum engelmannii* Prantl— {AFP}  
*Ophioglossum nudicaule* L.f.— {AFP}  
*Ophioglossum palmatum* L.— {AFP} State Endangered.  
\**Ophioglossum pendulum* L.— {AFP}  
*Ophioglossum petiolatum* Hook.— {AFP}

## PSILOTALES

PSILOTACEAE {AFP}

*Psilotum* {AFP}

*Psilotum nudum* (L.)P.Beauv.— {AFP}

## POLYPODIIDAE

(Leptosporangiates)

## OSMUNDALES

OSMUNDACEAE {AFP}

1. Sterile leaves 2-pinnate, nearly all pinnules unlobed, abaxially without tufts of hairs near base; fertile leaves similar to sterile leaves except the terminal pinnae completely covered in sporangia ... *Osmunda spectabilis*

1. Sterile leaves 1-pinnate, the pinnae deeply lobed, abaxially with tufts of hairs near base; fertile leaves completely covered in sporangia, lacking green blades ... *Osmundastrum cinnamomeum*

*Osmunda* {AFP}

*Osmunda spectabilis* Willd.— {AFP} Commercially Exploited.

*Osmundastrum* {AFP}

*Osmundastrum cinnamomeum* (L.)C.Presl— {AFP} Commercially Exploited.

## GLEICHENIALES

GLEICHENIACEAE {AFP}

*Dicranopteris* {AFP}

\*\**Dicranopteris flexuosa* (Schrad.)Underw.— {AFP} The earliest Florida records appear in the 1950s.

## HYMENOPHYLLALES

HYMENOPHYLLACEAE {AFP}

*Trichomanes* {AFP}

1. Roots present; leaves cespitose, clustered; leaf margin without stellate or branched hairs (*Trichomanes* s.str.) ... *T. holopterum*

1. Roots absent or with root-like shoots only; leaves separated along a long-creeping rhizome; leaf margins with dark, stellate hairs (*Didymoglossum*) [2]

2. Leaves pinnately lobed, with strong pinnate venation ... *T. krausii*

2. Leaves entire to irregularly palmately lobed, with weak pinnate venation or veins repeatedly forking from the base [3]

3. Midrib extending to apex of blade; venation weakly pinnate; indusium margin indistinct from blade surface ... *T. petersii*
3. Midrib absent or not extending past middle of blade; venation repeatedly forking from base; indusium margin dark, distinct from the blade surface [4]
4. Veins widening at their apex; indusium not flared at mouth ... *T. lineolatum*
4. Veins of uniform width; indusium flared at mouth ... *T. punctatum* subsp. *floridanum*

***Trichomanes holopterum*** Kunze— {AFP} State Endangered.

***Trichomanes krausii*** Hook. & Grev.— {AFP} State Endangered.

***Trichomanes lineolatum*** (Bosch)Hooker— {AFP} State Endangered.

***Trichomanes petersii*** A.Gray— {AFP}

***Trichomanes punctatum*** Poir. subsp. ***floridanum*** Wess. Boer— {AFP} Endemic. Federally Endangered. State Endangered.

## SCHIZAEALES

### SCHIZAEACEAE {AFP}

1. Vines or vine-like, each leaf extremely long, 1+ m long, indeterminate, and the rachis appearing like a vining stem (the actual stem subterranean) ... *Lygodium*
1. Not vines, each leaf <1 m long, determinate [2]
2. Leaf blade segments linear ... *Actinostachys pennula*
2. Leaf blade segments generally ovate ... *Anemia*

### *Actinostachys* {AFP}

***Actinostachys pennula*** (Sw.)Hook.— {AFP} State Endangered.

### *Anemia* {AFP}

1. Leaves 3-pinnate; fertile leaf with the basalmost pinnae spore-bearing, the distal pinnae with green blade tissue; sterile leaves 17-60 cm long ... *A. adiantifolia*
1. Leaves 2-pinnate; fertile pinnae lacking green blade tissue; sterile leaves 4-15 cm long ... *A. wrightii*

***Anemia adiantifolia*** (L.)Sw.— {AFP}

***Anemia wrightii*** Baker— {AFP} State Endangered.

***Lygodium* {AFP}** *Lygodium palmatum* has been attributed to the state (Chapman 1883) perhaps based on a W.W. Calkins collection (NY), lacking a date and specific locality. An anonymous collection hails from Lemon City (Miami-Dade Co.). Florida is long disjunct from its native distribution. It is very doubtful the species was naturally present in recent time. The species is formally excluded as done by [Nauman \(1987\)](#), but still included in the key below.

1. Sterile pinnules palmately lobed; fertile pinnules with the spore-bearing tissue exceeding in area the minimal sterile, green tissue; leaves 1-4 cm apart along the subterranean stem ... *L. palmatum*
1. Sterile pinnules pinnately divided, irregularly palmately lobed, or simple; fertile pinnules with the sterile, green tissue abundant and exceeding in area the spore-bearing tissue; leaves 0-0.5 cm apart along the subterranean stem [2]

2. Ultimate blade segments mostly short-lobed at the base and the central lobe elongate, the blade decurrent along the rachis, blade segments not articulate, blade tissue glabrate or sparsely to moderately pubescent abaxially ... *L. japonicum*

2. Ultimate blade segments mostly ovate to lanceolate and truncate to cordate at the base, the blade not decurrent along the rachis, blade segments articulate and leaving a naked rachis point when detached, blade tissue glabrous abaxially ... *L. microphyllum*

\**Lygodium japonicum* (Thunb.) Sw.— {AFP} Widely cultivated in the 1920s and 1930s, and naturalized by the 1930s.

\**Lygodium microphyllum* (Cav.) R.Br.— {AFP} Cultivated as early as 1958, and naturalized by 1965 (Beckner 1968).

## CYATHEALES

### CYATHEACEAE {AFP}

#### *Sphaeropteris* {AFP}

\**Sphaeropteris cooperi* (Hook. ex F. Muell.) R.M. Tryon— {AFP}

## SALVINIALES

### AZOLLACEAE {AFP}

#### *Azolla* {AFP}

1. Branching subdichotomous, the main branches not much markedly longer at the plant base, the plant subradiate or irregular in shape; lamina trichomes mostly suborbicular to deltate, scarcely if at all longer than wide; microsporangial mass with barbed trichomes; megasporangium with 3 floats ... *A. caroliniana*

1. Branching pinnate, the main branches markedly longer towards the plant base, the plant roughly triangular in shape; lamina trichomes oblong, conspicuously longer than wide; microsporangial mass lacking barbed trichomes; megasporangium with 9 floats (row of 3 and row of 6) ... *A. pinnata*

*Azolla caroliniana* Willd.— {AFP} Sometimes included in *A. filiculoides*.

\**Azolla pinnata* R.Br.— {AFP}

### SALVINIACEAE {AFP}

#### *Salvinia* {AFP}

1. Laminae oblong, 20-45 mm long, 10-20 mm wide, ca. 3 times longer than wide; each papilla with two hairs ... *S. oblongifolia*

1. Laminae orbicular to sub-orbicular, or bilobed, length and width subequal; each papilla with four hairs [2]

2. Lamina 6-13 mm long, 5-10 mm wide, each papilla with four free hairs ... *S. minima*

2. Lamina 17-25 mm long, 34-45 mm wide, each papilla with four hairs joined at the apex ... *S. molesta*

\**Salvinia minima* Baker— {AFP}

\**Salvinia molesta* D.S. Mitch.— {AFP}

\**Salvinia oblongifolia* Mart.— {AFP}

## MARSILEACEAE {AFP}

### Marsilea {AFP}

1. Leaflets variegated, with a lighter splotch in basal portion; sporocarps without a raphe or teeth ... *M. mutica*
1. Leaflets uniformly green; sporocarps with a raphe, the teeth somewhat prominent [2]
2. Stem with 1-3 adventitious roots along the internodes; leaflets of emergent leaves irregularly crenate ... *M. minuta*
2. Stem internodes without adventitious roots; leaflets of emergent leaves entire to sinuate or obscurely crenulate [3]
3. Distal tooth of sporocarps 0.4-1.2 mm long, sharply acute to pointed, the tip often recurved ... *M. vestita*
3. Distal tooth of sporocarps 0-0.4 mm long, obtuse to subacute, tip not recurved [4]
4. Sporocarps suborbicular to nearly elliptic, the distal tooth 0.1-0.4 mm long, shallowly deltate or tapering to a deltate peak ... *M. ancylopoda*
4. Sporocarps subquadrangular, the distal tooth absent or very shallowly triangular [5]
5. Sporocarps 3-5 mm long, hatchet-shaped with the upper margin slightly indented, descending and solitary on strongly deflexed to upright, unbranched peduncles, peduncles 1.5-6 mm long; proximal tooth 0.2-0.4 mm long, rounded and not appearing as a tooth ... *M. hirsuta*
5. Sporocarps 6-9 mm long, elliptical to quadrate, strongly ascending on erect, frequently branching peduncles, peduncle 8-17 mm long; proximal tooth 0.4-0.5 mm long, distinctly appearing as a blunt tooth ... *M. macropoda*

***Marsilea ancylopoda*** A.Braun— {AFP} State Threatened.

\****Marsilea hirsuta*** R.Br.— {AFP}

\****Marsilea macropoda*** Engelm. ex A.Braun— {AFP}

\****Marsilea minuta*** L.— {AFP}

\****Marsilea mutica*** Mett.— {AFP}

\****Marsilea vestita*** Hook. & Grev.— {AFP}

## POLYPODIALES

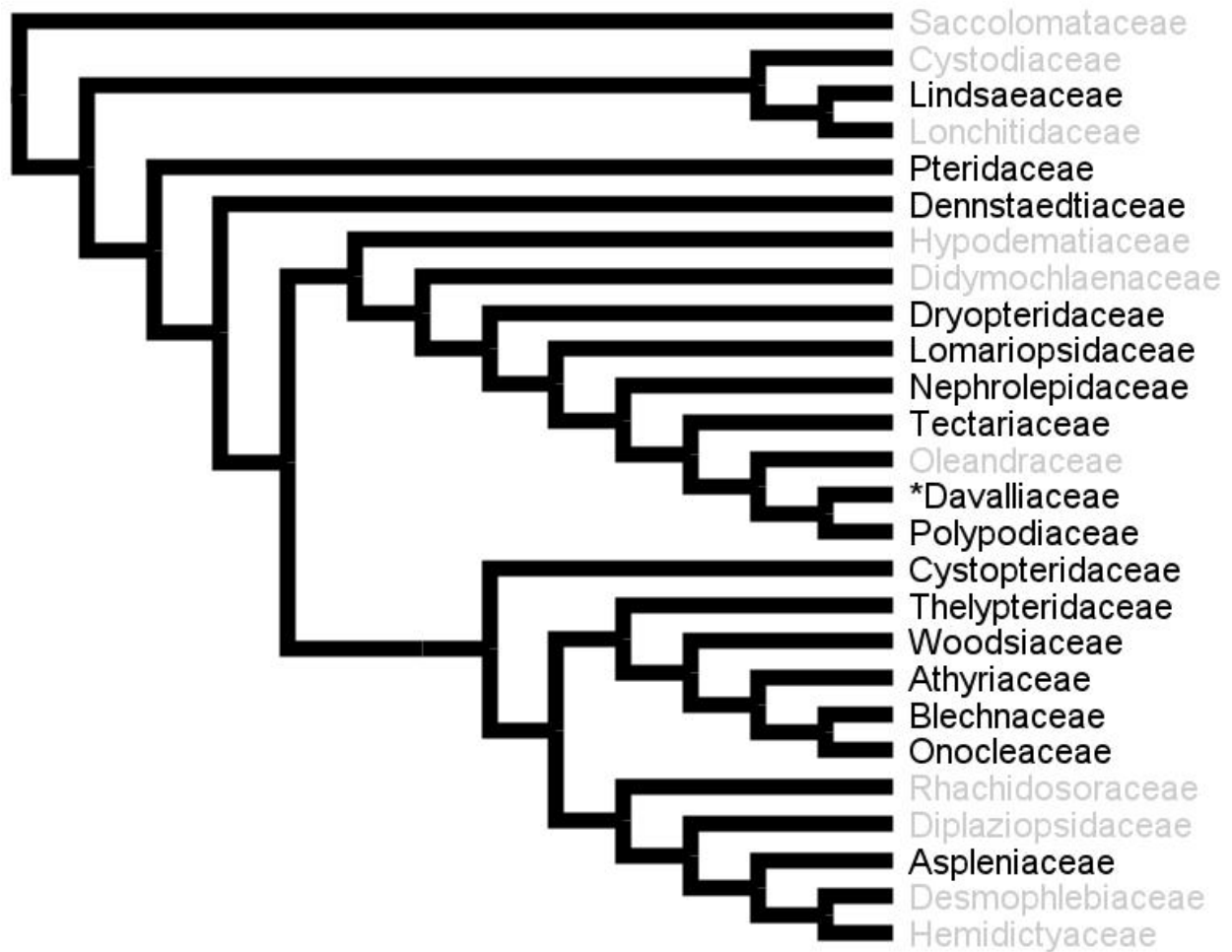


Figure: Estimated phylogeny of extant Polypodiales, see analyses by: [Nitta et al. 2022](#). Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## LINDSAEACEAE

### *Sphenomeris* {AFP}

*Sphenomeris clavata* (L.)Maxon— {AFP} State Endangered.

## PTERIDACEAE {AFP}

1. Leaves linear, simple ... *Vittaria lineata*

1. Leaves pinnately divided [2]

2. Annuals, floating or loosely rooted in flooded or extremely saturated soils ... *Ceratopteris*

2. Perennials, firmly rooted in xeric to saturated soils or rocky areas [3]

3. Sporangia borne directly on reflexed marginal lobes of ultimate segments, lobes separate and distinct; veins of ultimate blade segments prominent, dichotomously branched, essentially parallel distally ... *Adiantum*

3. Sporangia borne on abaxial leaf surface or, if seemingly attached to marginal lobes of ultimate segments, lobes confluent and poorly defined; veins of ultimate blade segments obscure or, if prominent, then pinnately branched and more divergent distally [2]

4. Blade lower surface with white or yellow farina (this sometimes lost in heat-treated specimens); sporangia following veins for most of length ... *Pityrogramma*

4. Blade lower surface without white or yellow farina; sporangia submarginal or completely covering surface [4]
5. Leaves usually more than 1 m; veins strongly anastomosing throughout, forming several rows of areoles between costa and margin; Sporangia covering entire abaxial surface on fertile pinnae;; ... *Acrostichum*
5. Leaves <1 m long in most species (>1 m in *Pteris tripartita*); veins free or rarely anastomosing, not forming several rows of areoles between costa and margin; sporangia confined to marginal sori [5]
5. Petioles longitudinally with 2-3 grooves ... *Pteris*
5. Petioles longitudinally with 1 groove or terete [6]
6. Blade lower surface hairy, scaly, or glandular ... *Myriopteris*
6. Blade lower surface glabrous to glabrate ... *Pellaea*

### **Acrostichum {AFP}**

1. Pinnae (leaflets) usually distant and not overlapping adjacent pinnae; fertile (spore-bearing) leaf with only the upper 5 or fewer pairs of pinnae fertile; costal (midrib) areoles usually narrow, 3 or more times longer than wide; paraphyses (sterile hairs among sporangia) terminating in a roughly rotund or isodiametric, irregularly lobed cell ... *A. aureum*
1. Pinnae (leaflets) usually closely spaced and overlapping or nearly so with adjacent ones; fertile (spore-bearing) leaf with most pinnae fertile; costal (midrib) areoles usually broad, less than 3 times longer than wide; paraphyses (sterile hairs among sporangia) terminating in an elongate, smooth or few-lobed cell ... *A. danaeifolium*

***Acrostichum aureum* L.— {AFP} State Threatened.**

***Acrostichum danaeifolium* Langsd. & Fisch.— {AFP}**

### **Adiantum {AFP}**

1. Leaves 1-pinnate, tip of some leaves prolonged with reduced pinnae and a proliferous bud ... *A. caudatum*
1. Leaves usually 2-pinnate, the tip not prolonged, not proliferous [2]
2. Ultimate pinnules 2.5-6 cm long, 1.5-6 cm wide [3]
2. Ultimate pinnules 0.5-2.5 cm long, 0.5-2.5 cm wide [4]
3. Ultimate pinnules subentire with sinuses to 1 mm deep, the lateral pinnules generally broadly ovate, suborbicular, or quadrangular ... *A. anceps*
3. Ultimate pinnules usually conspicuously incised with sinuses to 5 mm deep, the lateral pinnules generally rectangular ... *A. trapeziforme*
4. Petiolule or ultimate pinnule stalk 1-5 mm long, often appearing centrally attached to the blade segment; ultimate pinnule usually with some deep sinuses 1/3 or more the length of the segment, [5]
4. Petiolule or ultimate pinnule stalk 0-1 mm long, mostly appearing to be attached to the basal side of the ultimate pinnule; ultimate pinnule lacking sinuses or these <1/5 of the segment length or width [6]
5. Dark color of petiolule or ultimate pinnule stalks extending into base of pinnules, not forming an articulate, cup-like swelling ... *A. capillus-veneris*
5. Dark color of petiolule or ultimate pinnule stalks not extending into base of pinnules, petiolule or pinnule stalks terminating in an articulated, cup-like swelling at base of blade segments ... *A. tenerum*
6. Basal pair of pinnae 1-pinnate; ultimate pinnules 12-25 mm long ... *A. villosum*

6. Basal pair of pinnae 1- to 4-pinnate; ultimate pinnules 5-12 mm long [7]
7. Rachis hispid; ultimate pinnules with scattered multicellular hairs; false indusia generally round ... *A. hispidulum*
7. Rachis strigose; ultimate pinnules glabrous; false indusia crescent-shaped ... *A. melanoleucum*

\**Adiantum anceps* Maxon & C.V.Morton— {AFP}

*Adiantum capillus-veneris* L.— {AFP}

\**Adiantum caudatum* L.— {AFP}

\**Adiantum hispidulum* Sw.— {AFP}

*Adiantum melanoleucum* Willd.— {AFP} State Endangered.

*Adiantum tenerum* Sw.— {AFP} State Endangered.

\**Adiantum trapeziforme* L.— {AFP}

*Adiantum villosum* L.— {AFP}

### Ceratopteris {AFP}

1. Spores 16 per sporangium ... *C. richardii*

1. Spores 32 per sporangium [2]

2. Petiole (1)10-11(19) mm wide, usually inflated; sterile leaves usually simple and palmately or pinnately lobed, sometimes 2- to 4-pinnate; basal pinnae or veins of lobes usually opposite; fertile leaves usually deltate to cordate or reniform; sporangia lacking annulus or annulus well-developed, indurate cells 0-10(40) ... *C. pteridoides*

2. Petiole (0.7)2-6(8) mm wide, not inflated; sterile leaves (1)2- to 3-pinnate; basal pinnae usually alternate; fertile leaves lanceolate, ovate, deltate, to cordate; sporangia with well-developed annulus, indurate cells 13-71 ... *C. thalictroides*

*Ceratopteris pteridoides* (Hook.)Hieron.— {AFP}

\**Ceratopteris thalictroides* (L.)Brongn.— {AFP} The very similar *C. richardii* is sometimes recognized but only distinguishable by its 16-spored sporangia (vs. 32 in *C. thalictroides*). However, *C. richardii* apparently is not found in Florida.

### Myriopteris {AFP}

1. Petiole and rachis villous-hispidulous with septate hairs; ultimate segment upper and lower surface with whitish or tan, septate hairs to 0.8 mm long ... *M. lanosa*

1. Petiole and rachis glabrous to finely pubescent, abaxially the hairs sparse, long, divergent, adaxially the hairs denser, tortuous, appressed; ultimate segment upper and lower surface with hairs to 0.2 mm long or glabrate [2]

2. Stems mostly 4-7 mm wide, short-creeping to compact, the leaves more or less cespitose or clustered; leaves 2-pinnate to 2-pinnate-pinnatifid at base; basal pair of pinnae often slightly smaller than adjacent pair; costae green adaxially for most of length; most sporangia containing 32 spores ... *M. alabamensis*

2. Stems 1-3 mm wide, long-creeping, the leaves somewhat distant; leaves 2-pinnate-pinnatifid to 3-pinnate at base; basal pair of pinnae subequal to slightly larger than adjacent pair; costae black adaxially for most of length; most sporangia containing 64 spores ... *M. microphylla*

*Myriopteris alabamensis* (Buckley)Grusz & Windham— {AFP}

*Myriopteris lanosa* (Michx.)Grusz & Windham— {AFP}

*Myriopteris microphylla* (Sw.)Grusz & Windham— {AFP} State Endangered.



## Pellaea {AFP}

1. Petiole and rachis pubescent, dark reddish brown to brownish black, the upper side not grooved ... *P. atropurpurea*

1. Petiole and rachis glabrate, red-brown to purplish, the upper side grooved ... *P. viridis*

***Pellaea atropurpurea*** (L.)Link— {AFP} State Endangered.

\****Pellaea viridis*** (Forsk.)Prantl— {AFP}

## Pityrogramma {AFP}

1. Pinnules mostly uniformly ovate to lanceolate, the proximal pinnules and distal pinnae moderately to deeply lobed or toothed ... *P. calomelanos*

1. Pinnae and pinnules mostly uniformly linear and entire to serrulate ... *P. trifoliata*

\****Pityrogramma calomelanos*** (L.)Link ex Britton & Millsp.— {AFP}

***Pityrogramma trifoliata*** (L.)R.M.Tryon— {AFP}

## Pteris {AFP}

1. Leaves regularly 1-pinnate [2]

1. Leaves 2-3-pinnate or irregularly pinnate with the proximal pinnae forked, divided, or pinnatifid [5]

2. Pinnae 1-5 cm wide, the veins usually partly anastomosing ... *P. grandifolia*

2. Pinnae 0.1-1.1 cm wide, the veins free, not anastomosing [3]

3. Spores malformed, of different sizes and shapes ... *P. xdelchampsii*

3. Spores of uniform shape and size [4]

4. Petioles often sparsely scaly, scales dark brown to nearly black, scales absent or few on rachises, the costae abaxially with or without hairs; lateral pinnae mostly green to light green, 1-6 mm wide, appearing articulate to rachis, apices rounded to obtuse ... *P. bahamensis*

4. Petioles and often rachises densely scaly, scales light to reddish, often grading into hairs on abaxial costae; lateral pinnae mostly green to dark green, 5-11 mm wide, appearing not articulate to rachis, apices long-attenuate to sharply acute ... *P. vittata*

5. Leaf blade pinnae or pinnules regularly deeply lobed, with 5-25 pairs of subequal lobes [6]

5. Leaf blade pinnae or pinnules unlobed or irregularly lobed with unequal and few lobes [7]

6. Leaves 0.3-1 m long, 2-pinnate at the basalmost pinnae with usually 2 pinnules, veins free and not anastomosing ... *P. quadriaurita*

6. Leaves 1-2 m long, 2- or 3-pinnate, the basalmost pinnae with more than 2 pinnules, veins anastomosing ... *P. tripartita*

7. Central rachis usually not winged; costae abaxially with few scattered linear scales ... *P. cretica*

7. Central rachis usually distally winged; costae abaxially without scales [8]

8. Leaf segment apices attenuate to long-acuminate, the segments all uniformly linear or nearly so ... *P. multifida*

8. Leaf segments apices rounded on sterile ones and acute to acuminate on fertile ones, the sterile ones usually elliptic, ovate, lanceolate, or linear, the fertile ones more linear ... *P. ensiformis*

***Pteris bahamensis*** (J.Agardh)Fée— {AFP} State Threatened.

\****Pteris cretica*** L.— {AFP}

***Pteris xdelchampsii*** W.H.Wagner & Nauman— {AFP} Hybrid of *P. bahamensis* and *P. vittata*.

\****Pteris ensiformis*** Burm.f.— {AFP}

- \**Pteris grandifolia* L.— {AFP}
- \**Pteris multifida* Poir.— {AFP}
- Pteris quadriaurita* Retz.— {AFP}
- \**Pteris tripartita* Sw.— {AFP}
- \**Pteris vittata* L.— {AFP}

### Vittaria {AFP}

*Vittaria lineata* (L.) Sm.— {AFP}

## DENNSTAEDTIACEAE {AFP}

### Dennstaedtia {AFP}

*Dennstaedtia bipinnata* (Cav.) Maxon— {AFP} State Endangered.

### Hypolepis {AFP}

*Hypolepis barringtonii* Schwartsb.— {AFP} Endemic.

### Pteridium {AFP}

1. Plants to ca. 2.5 m tall; ultimate leaf segments mostly 5-24 times longer than wide, 1-4(-6.5) mm wide, often appearing widely spaced ... *P. caudatum*

1. Plants to ca. 1 m tall; ultimate leaf segments mostly 2-8.5 times longer than wide, mostly 3-8 mm wide, mostly appearing closely spaced [2]

2. Leaf segment margins sparsely to densely pubescent ... *P. latiusculum*

2. Leaf segment margins glabrous, rarely sparsely pilose ... *P. pseudocaudatum*

*Pteridium caudatum* (L.) Maxon— {AFP}

*Pteridium latiusculum* (Desv.) Hieron.— {AFP}

*Pteridium pseudocaudatum* (Clute) Christenh.— {AFP}

## POLYPODIINEAE

Eupolypods

### DRYOPTERIDACEAE {AFP}

1. Veins areolate or anastomosing ... *Cyrtomium falcatum*

1. Veins free or sparingly anastomosing [2]

2. Indusium round, peltate [3]

2. Indusium reniform to suborbicular, attached laterally at sinus [4]

3. Leaves 1-pinnate ... *Polystichum*

3. Leaves primarily 2-pinnate ... *Rumohra adiantiformis*

4. Costae rounded or flat adaxially, with dense, multicellular hairs with reddish crosswalls ... *Ctenitis*

4. Costae grooved adaxially, lacking hairs [5]

5. Stems moderately long-creeping; overall leaf shape pentagonal or deltate-hastate, basal pinnae usually branched at their base ... *Arachniodes simplicior*

5. Stems short-creeping, erect or nearly so; overall leaf shape lanceolate to ovate, basal pinnae unbranched ... *Dryopteris ludoviciana*

## Arachniodes {AFP}

\**Arachniodes simplicior* (Makino) Ohwi— {AFP}

## Ctenitis {AFP}

1. Leaves 2-4-pinnate-pinnatifid, the basal pinnae inequilateral, elongate basiscopically ... *C. sloanei*

1. Leaves 1-pinnate-pinnatifid, the basal pinnae equilateral ... *C. submarginalis*

*Ctenitis sloanei* (Poepp. ex Spreng.) C.V. Morton— {AFP} State Endangered.

*Ctenitis submarginalis* (Langsd. & Fisch.) Ching— {AFP} State Endangered.

## Cyrtomium {AFP}

\**Cyrtomium falcatum* (L.f.) C. Presl— {AFP}

## Dryopteris {AFP}

*Dryopteris ludoviciana* (Kunze) Small— {AFP}

## Polystichum {AFP}

1. Leaves 1-pinnate, the pinnae simple ... *P. acrostichoides*

1. Leaves 1- or 2-pinnate, the pinnae deeply lobed or pinnately divided ... *P. luctuosum*

*Polystichum acrostichoides* (Michx.) Schott— {AFP}

^ *Polystichum luctuosum* (Kunze) T. Moore— {AFP}

## Rumohra {AFP}

\**Rumohra adiantiformis* (G. Forst.) Ching— {AFP}

## LOMARIOPSIDACEAE {AFP}

### Lomariopsis {AFP}

*Lomariopsis kunzeana* (Underw.) Holttum— {AFP} State Endangered.

## NEPHROLEPIDACEAE {AFP}

### Nephrolepis {AFP}

1. Rachis and costa adaxially with dense covering of reddish or brown-red hairs (pinnae sometimes irregularly pinnatifid) ... *N. hirsutula*

1. Rachis and costa adaxially glabrous, pubescent, or scaly (pinnae not irregularly pinnatifid or rarely so) [2]

2. Costa adaxially pubescent with short erect hairs [3]

2. Costal adaxially glabrous [5]

3. Base of petioles with appressed, stiff, dark brown scales ... *N. brownii*

3. Base of petioles with loose, soft, reddish or light brown scales [4]

4. Pinnae mostly falcate; costa sparsely hairy, hairs ca. 0.5 mm long ... *N. xaveryi*

4. Pinnae mostly straight or nearly so; costa moderately to densely hairy, hairs 0.2-0.4 mm long ... *N. biserrata*

5. Pinnae falcate, long-acute to acuminate at the tip, sometimes dichotomously forked ... *N. falcata*

5. Pinnae simple (or sometimes pinnae pinnately divided), generally obtuse to rounded at the tip, not dichotomously forking [6]

6. Tubers often present; rachis adaxially with bicolored scales, the central part strongly darker; pinnae glabrous; indusium lunate to deltate-rounded, attached by a broad base ... *N. cordifolia*

6. Tubers absent; pinnae usually with a few scales near the costa; rachis adaxially with the scales uniformly colored or only slightly paler towards the margins; pinnae with a few scales near costae; indusium reniform or horseshoe-shaped, attached by a narrow sinus ... *N. exaltata*

***Nephrolepis* × *averyi*** Nauman— {AFP}

***Nephrolepis biserrata*** (Sw.)Schott— {AFP} State Threatened.

\****Nephrolepis brownii*** (Desv.)Hovenkamp & Miyam.— {AFP}

\****Nephrolepis cordifolia*** (L.)C.Presl— {AFP}

***Nephrolepis exaltata*** (L.)Schott— {AFP}

\****Nephrolepis falcata*** (Cav.)C.Chr.— {AFP}

\****Nephrolepis hirsutula*** (G.Forst.)C.Presl— {AFP}

## DAVALLIACEAE {AFP}

### Davallia {AFP}

^ *Davallia trichomanoides* Blume— {AFP}

## POLYPODIACEAE {AFP}

1. Plant base with sterile shield or nest leaves which become brown and persistent [2]

1. Plant base without shield or nest leaves [3]

2. Fertile leaves pinnately lobed ... *Drynaria quercifolia*

2. Fertile leaves distally lobed ... *Platyserium bifurcatum*

3. Leaves simple [4]

3. Leaves pinnately lobed or divided or 1-pinnate [8]

4. Leaf blade underside with scales ... *P. astrolepis*

4. Leaf blade underside glabrous or glabrate [5]

5. Sporangia in marginal bands ... *P. marginata*

5. Sporangia in discrete rounded sori [6]

6. Leaves densely clustered, nearly cespitose on short-creeping stem ... *Campyloneurum*

6. Leaves well separated, along a long-creeping stem [7]

7. Leaf blade apex rounded to obtuse ... *Microgramma*

7. Leaf blade apex acute to long-acuminate ... *Microsorium*

8. Leaves 1-pinnate, the rachis naked between the pinnae ... *Serpocaulon triseriale*

8. Leaves pinnately deeply lobed or divided [9]

9. Leaf blade segments 1-7 mm wide, the lower surface glabrate or with scales [10]

9. Leaf blade segments 15-60 mm wide, the lower surface glabrous or glabrate [11]

10. Leaf blade lower surface glabrate or sparsely covered in basifixed scales; segments in 5-20 pairs per leaf ... *Pecluma*

10. Leaf blade lower surface densely covered in peltate scales; segments in 20-50 pairs per leaf ... *Pleopeltis*

11. Stem sparsely to moderately covered with appressed to spreading scales; leaf blade cuneate or acute at base, sori not apparent from the upper surface ... *Microsorium*

11. Stem densely villous with reddish or orangish scales; leaf blade truncate to cordate at base, sori often visibly apparent and forming tubercles on the upper surface ... *Phlebodium aureum*

### **Campyloneurum** {AFP}

1. Leaves (2)4.5-8 cm wide, lateral veins conspicuous and discolorous from the rest of the blade surface ... *C. phyllitidis*

1. Leaves 0.2-4.5 cm wide, lateral veins obscure and mostly concolorous with the rest of the blade surface [2]

2. Leaves 0.2-1.1 cm wide, 20-150 times longer than wide, lacking a distinct petiole, margins revolute ... *C. angustifolium*

2. Leaves 2-4.5 cm wide, 5-14 times longer than wide, often with a distinct naked petiole, margins undulate to entire, sometimes slightly revolute ... *C. costatum*

***Campyloneurum angustifolium*** (Sw.)Fée— {AFP} State Endangered.

***Campyloneurum costatum*** (Kunze)C.Presl— {AFP} State Endangered.

***Campyloneurum phyllitidis*** (L.)C.Presl— {AFP}

### **Drynaria** {AFP}

^ *Drynaria quercifolia* (L.)J.Sm.— {AFP}

### **Microgramma** {AFP}

1. Stem 0.5-3 mm wide, covered in brownish or reddish scales; leaves 5-12 mm wide ... *M. heterophylla*

1. Stem 3-6 mm wide, densely covered in silvery or whitish hairs and brownish or reddish scales; leaves 12-30 mm wide ... *M. nitida*

***Microgramma heterophylla*** (L.)Wherry— {AFP} State Endangered.

^ *Microgramma nitida* (J.Sm.)A.R.Sm.— {AFP}

### **Microsorium** {AFP}

1. Leaf blade with lateral lobes [2]

1. Leaf blade simple (sometimes apically bifurcating in cultivated forms) [3]

2. Rhizomes ca. 5 mm wide; the apex of the rhizome scales light brown with a hyaline margin; leaf blade usually with more than 5 pairs of lobes and may have a sweet smell when fresh ... *M. grossum*

2. Rhizomes ca. 2-3 mm wide; the apex of the rhizome scales dark brown; leaf blade usually with 1-5 pairs of lobes and lacking a sweet smell when fresh ... *M. scolopendria*

3. Leaf blade with strongly conspicuous secondary and tertiary venation; sori present in the costal areoles ... *M. musifolium*

3. Leaf blade with obscure venation (except for the midrib); sori absent in the costal areoles ... *M. punctatum*

\****Microsorium grossum*** (Langsd. & Fisch.)S.B.Andrews— {AFP}

^ *Microsorium musifolium* (Blume)Copel.—

^ *Microsorium punctatum* (L.)Copel.

\****Microsorium scolopendria*** (Burm.f.)Copel.— {AFP}

### **Pecluma** {AFP}

1. Petiole and rachis scales filiform and inconspicuous or absent; basal segments usually gradually reduced to numerous short auricles; veins mostly 2-3-forked ... *P. ptilota* var. *bourgeauana*

1. Petiole and rachis scales cordate and appearing inflated or hastate and flat; basal segments mostly fully formed, the basalmost abruptly reduced to only a few auricles; veins mostly 1- or 2-forked [2]

2. Petiole scales hastate, ciliate-lacerate; segments linear-lanceolate to linear-elliptic, basal ones sometimes slightly deflexed; veins mostly 2-forked; spores 32 per sporangium, mostly spherical ... *P. dispersa*

2. Petiole scales ovate-deltate to cordate, bullate, mostly entire or irregularly toothed; segments linear, basal ones not deflexed; veins mostly 1-forked; spores 64 per sporangium, mostly reniform ... *P. plumula*

***Pecluma dispersa*** (A.M.Evans)M.G.Price— {AFP} State Endangered.

***Pecluma plumula*** (Humb. & Bonpl. ex Willd.)M.G.Price— {AFP} State Endangered.

***Pecluma ptilota*** (Kunze)M.G.Price var. *bourgeauana* (E.Fourn.)A.R.Sm.— {AFP} State Endangered.

### **Phlebodium** {AFP}

***Phlebodium aureum*** (L.)J.Sm.— {AFP} *Phlebodium pseudoaureum* (sometimes reported for Florida, but so far not conclusively documented) has sori in one row on each side of the midvein of the pinnae, whereas in *P. aureum* the pinnae have more than one row of sori, at least in some part of the leaf.

### **Platycerium** {AFP}

^ ***Platycerium bifurcatum*** (Cav.)C.Chr.— {AFP} Sparingly naturalized.

### **Pleopeltis** {AFP}

1. Leaf blade unlobed [2]

1. Leaf blade pinnately lobed [3]

2. Leaf blade with peltate scales on the underside; sporangia in discrete, round to oblong or slightly elongate sori on abaxial surface, not in marginal bands ... *P. astrolepis*

2. Leaf blade glabrous; sporangia confined to marginal or nearly marginal bands in distal 1/2 of blade ... *P. marginata*

3. Glands inconspicuous, on the proximal acroscopic side of the basal pinnae; adaxial scales absent or essentially so; abaxial laminar scales margins undulate, entire, orbicular scales present and readily visible; abaxial rachis scale margins entire ... *P. michauxiana*

3. Glands conspicuous, round to elliptic, rather swollen with a central depression, on a small auricle within the sinus near the acroscopic side of the basal pinna segments; adaxial scales scattered, subulate, 0.52-1.50 mm long, 0.15-0.70 mm wide, base pectinate-stellate, apex long caudate, margin weakly erose; abaxial laminar scale margins ciliate, orbicular scales present, not readily visible; abaxial rachis scale margins ciliate ... *P. polypodioides*

***Pleopeltis astrolepis*** (Liebm.)E.Fourn.— {AFP} State Endangered.

***Pleopeltis marginata*** A.R.Sm. & Tejero— {AFP} State Endangered.

***Pleopeltis michauxiana*** (Weath.)Hickey & Sprunt— {AFP}

***Pleopeltis polypodioides*** (L.)E.G.Andrews & Windham— {AFP}

### **Serpocaulon** {AFP}

***Serpocaulon triseriale*** (Sw.)A.R.Sm.— {AFP}

## TECTARIACEAE {AFP}

### Tectaria {AFP}

1. Blade 15-60 cm long, 10-60 cm wide (smaller immature blades usually unlobed or nearly so); areoles with included veinlets [2]
1. Blade 5-15 cm long, 3-10 cm wide; areoles rarely with included veinlets [3]
2. Primary pinnae or lobes mostly ovate to narrowly ovate, lower pinnae cordate to subcordate at the base; rachis and midvein glabrous on the lower side; indusium peltate ... *T. heracleifolia*
2. Primary pinnae or lobes mostly lanceolate; lower pinnae asymmetric, not cordate at the base; rachis and midvein puberulent on the lower side; indusium attached at the sinus ... *T. incisa*
3. Pinnae of 1-8 pairs, sometimes with proliferous buds in axils; petiole shorter than or rarely equaling blade, pubescent on both surfaces; indusia round-reniform, attached at sinus ... *T. coriandrifolia*
3. Pinnae of 0-2 pairs, without proliferous buds in axils; petiole 1-3 times length of blade, pubescent adaxially, lacking hairs abaxially; indusia peltate, attached centrally [4]
4. Pinnae of 1-2 pairs, the rachis 1.5-4 cm long between the basalmost pinnae and proceeding blade portion; spores malformed, of different sizes and shapes ... *T. xamesiana*
4. Pinnae of 0-1(2) pairs, the rachis 0-2 cm long between the basalmost pinnae and proceeding blade portion; spores of uniform shape and size ... *T. fimbriata*

***Tectaria xamesiana*** A.A.Eaton— {AFP}

***Tectaria coriandrifolia*** (Sw.)Underw.— {AFP}

***Tectaria fimbriata*** (Willd.)Proctor & Lourteig— {AFP} State Endangered.

***Tectaria heracleifolia*** (Willd.)Underw.— {AFP} State Threatened.

\****Tectaria incisa*** Cav.— {AFP}

## ASPLENIINEAE

### CYSTOPTERIDACEAE {AFP}

#### Cystopteris {AFP}

***Cystopteris protrusa*** (Weath.)Blasdel— {AFP}

### THELYPTERIDACEAE {AFP}

1. Blades 1-pinnate to deeply pinnate-pinnatifid; rachis grooved adaxially; veins meeting margin at or above sinus or united below sinus ... *Thelypteris*
1. Blades 2-pinnatifid or 2-pinnate-pinnatifid; rachis not grooved adaxially; veins commonly meeting margin above sinus [2]
2. Blades 2-pinnate to 2-pinnate-pinnatifid; pinnae free, rachis not winged; rachis hairs septate, many >0.5 mm long; indusia present, <0.3 mm wide ... *Macrothelypteris torresiana*
2. Blades 2-pinnatifid; pinnae mostly connected by wings along the rachis; rachis hairs not septate, <0.5 mm long; indusia absent ... *Phegopteris hexagonoptera*

#### Macrothelypteris {AFP}

\****Macrothelypteris torresiana*** (Gaudich.)Ching— {AFP}

#### Phegopteris {AFP}

***Phegopteris hexagonoptera*** (Michx.)Fée— {AFP}

***Thelypteris*** {AFP} Once construed as a large genus (provisionally retained here), it has been split into multiple genera with *Thelypteris* s.str. constrained to two species. Problems

remain with the generic taxonomy, such as the putative intergeneric hybrid *T. kunthii* (= *Pelazoneuron kunthii*).

#### Key to segregate genera

1. Pinnae unlobed; veins forming several areoles between the margin and main vein; sori elongate ... *Meniscium*
1. Pinnae lobed to deeply pinnatifid; veins free or united at or below sinus [2]
2. Plant with forked or stellate trichomes, especially on scales of stem apices, the rachis, and other parts of blade ... *Goniopteris*
2. Plant with simple trichomes only or glabrous [3]
3. Blade lower surface with spherical, sessile or subsessile reddish brown or yellowish glands [4]
3. Blade lower surface eglandular or the glands inconspicuous [5]
4. Rhizome short-creeping; glands sulphur-yellow, subsessile (*Amblovenatum*) ... *T. opulenta*
4. Rhizome erect; glands orangish to reddish brown, sessile (*Amauropelta*)
5. Veins often forked; leaves winter-deciduous (*Thelypteris* s.str.) ... *T. palustris* var. *pubescens*
5. Veins not forked; leaves usually not winter-deciduous [6]
6. Veins free or united at the sinus (or just below the sinus), not forming a single vein to the sinus ... *Pelazoneuron*
6. Veins (at least some) uniting below the sinus and forming a single vein to the sinus [7]
7. Rhizome black, long-creeping, leaves appearing distant; petiole base black; sori in a nearly continuous sinuous line appearing to connect from pinnule to pinnule (*Cyclosorus*) ... *T. interrupta*
7. Rhizome brown, short-creeping, leaves appearing clustered; petiole base brown; sori not in a nearly continuous line ... *Christella*

#### Key to *Amauropelta*

1. Leaves 20-70(80) cm long; pinnae pinnatifid; petiole 2-5 mm wide ... *T. resinifera*
1. Leaves 10-30(40) cm long; pinnae at least partly 1-pinnate; petiole 0.5-1.5 mm wide ... *T. sancta*

#### Key to *Christella*

1. Petiole usually brownish purple above base; leaves with usually more than 2 pairs of greatly reduced proximal pinnae; blade lower surface with trichomes <0.2 mm long, except a few along veins sometimes 0.3-0.5 mm long; excurrent veins mostly >2 mm long ... *T. dentata*
1. Petiole usually pale yellowish above base; leaves with 0-2 pairs of slightly reduced proximal pinnae; blade lower surface mostly with trichomes 0.3-0.7 mm long; excurrent veins <2 mm long ... *T. hispidula* var. *versicolor*

#### Key to *Goniopteris*

1. Leaf 15-25 cm wide, abruptly narrowed to the apex, the apical pinna subtended by a naked rachis and somewhat similar to the lateral pinnae ... *T. tetragona*
1. Leaf to 10 cm wide, gradually narrowed to the apex, the apical pinna pinnatifid and dissimilar to the lateral pinnae [2]
2. Leaves monomorphic and erect, not rooting at the apex; lateral pinnae dentate ... *T. sclerophylla*
2. Leaves somewhat dimorphic, the sterile ones shorter and spreading or prostrate, the mature fronds erect, ascending, or spreading, sometimes rooting at the apex; lateral pinnae entire, crenulate, or lobed but not as above [3]



3. Mature leaves erect, the blade simple-pinnatifid for 3/4 the length with 1-4 pairs of free basal pinnae ... *T. guadalupensis*

3. Mature leaves spreading to ascending, the blade pinnate with the terminal pinna simple-pinnatifid, but this <1/2 the length of the blade ... *T. reptans*

#### Key to *Meniscium*

1. Pinnae entire, undulate, to subtly crenulate, 2-6 cm wide ... *T. reticulata*

1. Pinnae serrate (at least toward apex), 2-3.5(4.5) cm wide ... *T. serrata*

#### Key to *Pelazoneuron*

1. Leaves to 3 m long; basal pinnae with its basal lobes reduced and shorter than the proceeding lobes ... *T. grandis*

1. Leaves (0.1)0.3-1.4(1.6) m long; basal pinnae with its basal lobes subequal to longer than the proceeding lobes [2]

2. Rhizome erect; scales at base of petioles ovate, glabrous; basal lobes of pinnae acuminate, often rather straight, longer than the proceeding and more ascending to curved lobes ... *T. patens*

2. Rhizome creeping; scales at base of petioles lanceolate, usually hairy; basal lobes of pinnae acute, slightly longer than to subequal and rather similar to the proceeding lobes [3]

3. Blade upper surface copiously pubescent ... *T. kunthii*

3. Blade upper surface glabrous to sparingly pubescent [4]

4. Blades coriaceous; scales of costa abaxially often numerous; terminal portion of blade with unlobed pinnae usually at least 5 times longer than wide, 10-20 cm long; basal pinnae 7-15 mm wide, sinuses 0.5-0.7 of the lobe length ... *T. augescens*

4. Blades chartaceous to subcoriaceous; scales of costa abaxially sparse to absent; terminal portion of blade with unlobed pinnae usually <5 times as long as wide, 6-12 cm long; basal pinnae (8)12-22 mm wide, sinuses 0.6-0.9 of the lobe length ... *T. ovata*

***Thelypteris augescens*** (Link)Munz & I.M.Johnst.— {AFP} State Threatened.

\****Thelypteris dentata*** (Forssk.)E.P.St.John— {AFP}

***Thelypteris grandis*** A.R.Sm.— {AFP} State Endangered.

***Thelypteris guadalupensis*** (Wikstr.)Proctor— {AFP}

***Thelypteris hispidula*** (Decne.)C.F.Reed var. ***versicolor*** (R.P.St.John)Lellinger— {AFP}

***Thelypteris interrupta*** (Willd.)K.Iwats.— {AFP}

***Thelypteris kunthii*** (Desv.)C.V.Morton— {AFP}

\****Thelypteris opulenta*** (Kaulf.)Fosberg— {AFP}

***Thelypteris ovata*** R.P.St.John— {AFP}

***Thelypteris palustris*** Schott var. ***pubescens*** (G.Lawson)Fernald— {AFP}

***Thelypteris patens*** (Sw.)Small ex R.P.St.John— {AFP} State Endangered.

***Thelypteris reptans*** (J.F.Gmel.)C.V.Morton— {AFP} State Endangered.

***Thelypteris resinifera*** (Desv.)Proctor— {AFP}

***Thelypteris reticulata*** (L.)Proctor— {AFP} State Endangered.

***Thelypteris sancta*** (L.)Ching— {AFP}

***Thelypteris sclerophylla*** (Poepp. ex Spreng.)C.V.Morton— {AFP} State Endangered.

***Thelypteris serrata*** (Cav.)Alston— {AFP} State Endangered.

***Thelypteris tetragona*** (Sw.)Small ex R.P.St.John— {AFP}

#### WOODSIACEAE {AFP}

## Woodsia {AFP}

*Woodsia obtusa* (Spreng.) Torr.— {AFP}

## ATHYRIACEAE {AFP}

1. Costae with multicellular hairs, costal grooves shallow and not decurrent into rachis groove ...  
*Deparia petersenii*

1. Costae without multicellular hairs, costal grooves deep and decurrent into rachis groove [2]

2. Leaf nearly entirely 2- or more pinnate; pinnules mostly oblong-elliptic; sori J-shaped ...  
*Athyrium filix-femina* subsp. *asplenioides*

2. Leaf usually pinnate or partly pinnate and partly 2- or more pinnate; pinnules mostly lanceolate; sori linear to slightly falcate ... *Diplazium esculentum*

## Athyrium {AFP}

*Athyrium filix-femina* (L.) Roth ex Mert. subsp. *asplenioides* (Michx.) Hultén— {AFP} State Threatened.

## Deparia {AFP}

\**Deparia petersenii* (Kunze) M. Kato— {AFP}

## Diplazium {AFP}

\**Diplazium esculentum* (Retz.) Sw.— {AFP}

## BLECHNACEAE {AFP}

1. Sori acrostichoid or coenosoric; venation mostly straight and parallel [2]

1. Sori discrete, oblong; venation branching or anastomosing [4]

2. Pinnae more or less entire, generally upcurved at least at the tip, distal pinnae becoming confluent ... *Blechnum occidentale* var. *minor*

2. Pinnae serrulate (at least the sterile ones), generally straight, all or nearly all pinnae distinct [3]

3. Terrestrial, climbing, or epiphytic; sterile leaves pinnate with the pinnae attenuate or long-acuminate at the tip, fertile leaves 2-pinnate with linear pinnules ... *Stenochlaena tenuifolia*

3. Terrestrial; sterile and fertile leaves similar, pinnate, the pinnae obtuse to subacute at the tip ...  
*Telmatoblechnum serrulatum*

4. Sterile leaves pinnatifid, fertile leaves pinnatifid to pinnate with linear pinnae nearly completely covered in sori (Lorinseria) ... *Woodwardia areolata*

4. Sterile and fertile leaves similar, pinnate with pinnatifid pinnae, the pinnae not completely covered with sori [5]

5. Leaf apex lacking a bulblet; pinnae with 1 row of areoles adjacent to costa and the veins then free to the margin, margins subentire to obscurely crenulate (*Anchistea*) ... *Woodwardia virginica*

5. Leaf apex sometimes with a proliferous bulblet; pinnae with 2-4 rows of areolae between costa and margin, margins sharply denticulate at least in some places ... *Woodwardia radicans*

## Blechnum {AFP}

*Blechnum occidentale* L. var. *minor* Hook.— {AFP} State Endangered.

## Stenochlaena {AFP}

\**Stenochlaena tenuifolia* (Desv.) T. Moore— {AFP}

## Telmatoblechnum {AFP}

***Telmatoblechnum serrulatum*** (Rich.)Perrie et al.— {AFP}

### **Woodwardia** {AFP}

1. Sterile leaves pinnatifid, fertile leaves pinnatifid to pinnate with linear pinnae nearly completely covered in sori (Lorinseria) ... *Woodwardia areolata*

1. Sterile and fertile leaves similar, pinnate with pinnatifid pinnae, the pinnae not completely covered with sori [2]

2. Leaf apex lacking a bulblet; pinnae with 1 row of areoles adjacent to costa and the veins then free to the margin, margins subentire to obscurely crenulate (*Anchistea*) ... *Woodwardia virginica*

2. Leaf apex sometimes with a proliferous bulblet; pinnae with 2-4 rows of areolae between costa and margin, margins sharply denticulate at least in some places ... *Woodwardia radicans*

***Woodwardia areolata*** (L.)T.Moore— {AFP}

^ *Woodwardia radicans* (L.)Sm.— {AFP} Reported for Miami-Dade Co. (FLAS), but doubtfully naturalized.

***Woodwardia virginica*** (L.)Sm.— {AFP}

### **ONOCLEACEAE** {AFP}

#### **Onoclea** {AFP}

***Onoclea sensibilis*** L.— {AFP}

### **ASPLENIACEAE** {AFP}

#### **Asplenium** {AFP}

1. Leaves simple, the petiole indistinct from the blade ... *A. serratum*

1. Leaves 1- to 3-pinnate, with a distinct, naked petiole [2]

2. Leaves 2- or 3-pinnate (at least some leaves, the pinnae rachis sometimes winged) [3]

2. Leaves 1-pinnate [7]

3. Spores of uniform shape and size [4]

3. Spores malformed, of different sizes and shapes [4]

4. Leaves 1- to 2-pinnate, the pinnae shallowly divided with little space between the blade tissue, the pinnules mostly coarsely dentate ... *A. cristatum*

4. Leaves 2- to 3-pinnate, the pinnae deeply divided with wide spaces between the blade tissue the pinnules mostly oblong-elliptic to deeply lobed ... *A. vercundum*

5. Overall leaf shape linear-lanceolate, the pinnae to 2 cm long ... *A. ×biscaynianum*

5. Overall leaf shape lanceolate, the pinnae to 6 cm long [6]

6. Medial pinnae pinnately divided throughout ... *A. ×curtissii*

6. Medial pinnae pinnately divided only in the proximal part, lobed or toothed distally ... *A. ×plenum*

7. Overall leaf blade shape broadly deltoid, with 1-2(4) pairs of pinnae, the veins with fine eglandular hairs ... *A. pumilum*

7. Overall leaf blade shape linear-oblong to lanceolate, with 5-35 pairs of pinnae, the veins usually with hair-like scales or glandular hairs or glabrous [8]

8. Leaves with 4-8(12) pairs of pinnae [9]

8. Leaves with (10)15-40 pairs of pinnae [10]

9. Overall leaf blade shape deltate; pinnae 30-70 mm long (at least larger ones) ... *A. abscissum*

9. Overall leaf blade shape linear-oblong; pinnae 2-11 mm long ... *A. dentatum*

10. Blade tissue at base of pinnae overlapping the primary rachis ... *A. platyneuron*

10. Blade tissue at base of pinnae not overlapping the primary rachis [11]

11. Pinnae with 1-2(3) sori, these along the distal, proximal margin and perpendicular to the primary rachis ... *A. monanthes*
11. Pinnae with (1)4-10 sori, these mostly evenly distributed along the pinnae along lateral veins [12]
12. Medial pinnae 2-6(9) cm long (at least on larger leaves); epiphyte on trees ... *A. erosum*
12. Medial pinnae 0.2-2 cm long; mostly on rocks or in rocky areas [13]
13. Pinnae 2-9 mm long, 1-1.5(2) times longer than wide ... *A. trichomanes*
13. Pinnae (5)6-20 mm long, 1.5-2.5(3) times longer than wide [14]
14. Pinnae margins subentire, undulate, or obscurely crenate-dentate; sori supramedial; spores 32 ... *A. resiliens*
14. Pinnae margins distinctly crenate or dentate; sori medial to inframedial; spores 32 or 64 per sporangium [15]
15. Pinnae margins dentate to crenate, a basal auricle lacking or obscure, the veins conspicuous; spores 64 per sporangium ... *A. heterochroum*
15. Pinnae margins shallowly crenulate, with a basal auricle, the veins obscure; spores 32 per sporangium ... *A. ×heteroresiliens*

***Asplenium abscissum*** Willd.— {AFP}

***Asplenium ×biscayanianum*** (D.C.Eaton)A.A.Eaton— {AFP} Endemic.

***Asplenium cristatum*** Lam.— {AFP}

***Asplenium ×curtissii*** Underw.— {AFP} Endemic.

***Asplenium dentatum*** L.— {AFP} State Endangered.

***Asplenium erosum*** L.— {AFP} State Endangered.

***Asplenium heterochroum*** Kunze— {AFP}

***Asplenium ×heteroresiliens*** W.H.Wagner— {AFP}

***Asplenium monanthes*** L.— {AFP} State Endangered.

^ ***Asplenium nidus*** L.—

***Asplenium platyneuron*** (L.)Britton et al.— {AFP}

***Asplenium ×plenum*** E.P.St.John ex Small— {AFP} Endemic.

***Asplenium pumilum*** Sw.— {AFP} State Endangered.

***Asplenium resiliens*** Kunze— {AFP}

***Asplenium serratum*** L.— {AFP} State Endangered.

***Asplenium trichomanes*** L.— {AFP} Included in the flora based solely on two records putatively collected in 1857 from Amelia Island (Moran 1981).

***Asplenium verecundum*** Chapm. ex Underw.— {AFP} State Endangered.

## SPERMATOPHYTES

1. Ovule naked; ovules and pollen produced in separate structures (cones); leaves usually with only a conspicuous midrib or none; plants woody ... Gymnosperms

1. Ovule contained in an ovary; ovules and pollen usually produced in the same flower, occasionally in separate flowers; pollen germinating on stigma, vegetative cell elongating to form pollen tube and carry 2 sperm cells; endosperm usually triploid (diploid in basal lineages); leaves often with numerous conspicuous veins; plants herbaceous or woody ... Angiosperms

## ACROGYMNOSPERMAE

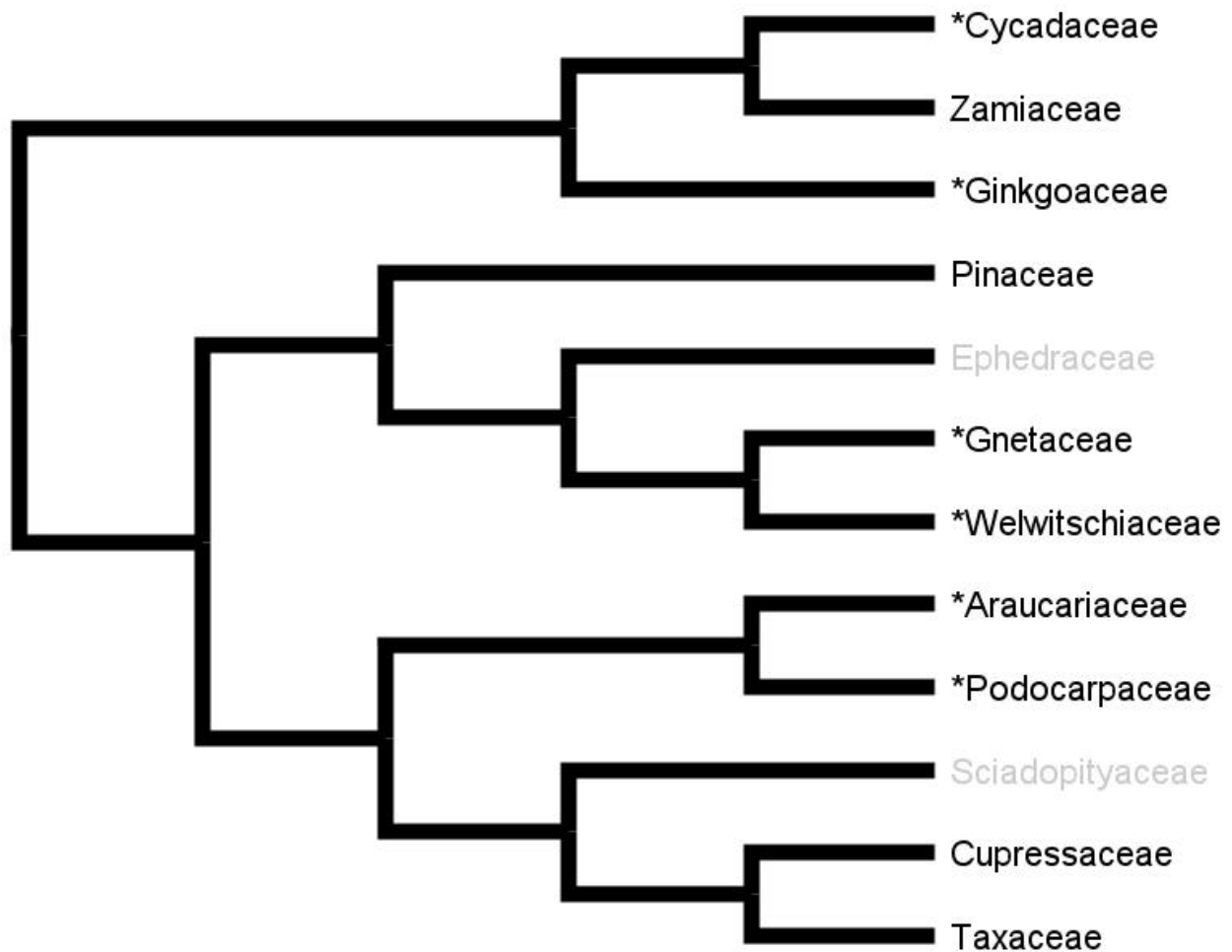


Figure: Estimated phylogeny of extant gymnosperms, see [Yang et al. \(2022\)](#). Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## GINKGOALES

^ *Ginkgo biloba* L. — Springly cultivated.

## CYCADALES

(coralloid roots hosting cyanobacteria near the soil surface)

The Montgomery Botanical Center in Miami-Dade Co. specializes in cycad research and cultivates a large number of taxa. The World List of Cycads ([cycadlist.org](http://cycadlist.org)) is an excellent resource detailing all species. Only *Zamia* is native to Florida. A key to all known genera of Cycadales is provided (most genera in Zamiaceae).

- 1. Leaflets with a midrib only, without secondary veins ... Cycadaceae
- 1. Leaflets with multiple veins, with or without a distinct midrib ... Zamiaceae

## CYCADACEAE {AFP}

### *Cycas* {AFP}

^ *Cycas revoluta* Thunb.— {AFP}

## ZAMIACEAE {AFP}

1. Leaves bipinnate ... *Bowenia*
1. Leaves 1-pinnate [2]
2. Leaflets with a prominent midrib [3]
2. Leaflets without a prominent midrib [4]
3. Leaflet lateral veins nearly perpendicular to the midrib to slightly ascending ... *Stangeria*
3. Leaflet lateral veins ascending ... *Zamia*
4. Leaflets arising from rachis midline ... *Lepidozamia*
4. Leaflets arising from margins of rachis [5]
5. Leaflet base strongly discoloured and callous; sporophylls with a sharp upturned spine ... *Macrozamia*
5. Leaflet base not strongly discoloured; sporophylls mostly without spines [6]
6. Leaflet base not narrowed ... *Dioon*
6. Leaflet base usually narrowed into attachment to rachis [7]
7. Leaf bases often persistent on trunk; leaflets not articulate, the margins sometimes with stout prickles or spinose-tipped lobes; sporophylls imbricate ... *Encephalartos*
7. Leaf base completely deciduous from trunk or persistent; leaflets articulate at base, the margins mostly entire to toothed; sporophylls valvate [8]
8. Above-ground trunk well-developed; leaf base and cataphylls persistent; hairs unbranched; sporophylls 2-horned apically ... *Ceratozamia*
8. Above-ground trunk absent or developed; leaf base and cataphylls usually deciduous; hairs branched or unbranched; sporophylls obtuse to truncate [9]
9. Trunk well-developed; stipules absent ... *Microcycas*
9. Trunk absent, rarely developed; stipules present ... *Zamia*

### *Zamia* {AFP}

1. Leaves pubescent to glabrate; petiole and rachis prickly; leaflets mostly 2-4 cm wide; peduncle subequal to the seed cone ... *Z. furfuracea*
1. Leaves glabrous; petiole and rachis without prickles; leaflets 0.2-1.8 cm wide; peduncle much shorter than the seed cone ... *Z. integrifolia* [2]
2. Plants usually with many stems; leaves dark green, to 1.5 m long; leaflets usually with slightly protruding vein-tips (teeth or callous bumps) on and near a mostly rounded apex, median leaflets 12-16 mm wide (ca. 8 times as long as wide); NE Florida ("Palatka Giant") ... *Z. integrifolia* var. *umbrosa*
2. Plants with 1-many stems; leaves medium green, to 1.0 m long; leaflets without protruding vein-tips on an acute to obtuse apex, median leaflets 10-18 times as long as wide [3]
3. Plants usually with 1 stem; leaves generally erect; median leaflets linear, 5-8 mm wide (ca. 18 times as long as wide); northern peninsula ... *Z. integrifolia* var. *broomei*
3. Plants usually with many stems; leaves generally spreading; median leaflets narrowly oblong to spatulate, 8-16 mm wide [4]
4. Median leaflets 14-18 cm long, 12-16 mm wide (ca. 10 times as long as wide); NW peninsula ... *Z. integrifolia* var. *silvicola*
4. Median leaflets 8-12 cm long, 8-14 mm wide (ca. 12 times as long as wide) [5]

5. Female cones 8-18 cm long; NW peninsula ... *Z. integrifolia* var. *floridana*  
 5. Female strobili 4-8 cm long; peninsula, common in cultivation ... *Z. integrifolia* var. *integrifolia*

^ *Zamia furfuracea* L.f. ex Aiton— {AFP} Sparingly naturalized.

***Zamia integrifolia*** L.f.— {AFP} Commercially Exploited.

## GNETALES

### GNETACEAE

#### Gnetum

^ *Gnetum gnemon* L.—

## WELWITSCHIALES

### WELWITSCHIACEAE

#### Welwitschia

^ *Welwitschia mirabilis* Hook.f.—Cultivated in containers primarily.

## PINALES

### PINACEAE {AFP}

#### Pinus {AFP}

1. Leaf sheath mostly 0.3-1 cm long; leaves usually in fascicles of 2; leaves mostly 5-11 cm long [2]  
 1. Leaf sheath mostly 1-2.5 cm long; leaves in fascicles of 2-3; leaves mostly 12-45 cm long [4]  
 2. Twigs roughened and cracking below leafy portion; bark plates often with evident dimple-like resin pockets ... *P. echinata*  
 2. Twigs smooth below leafy portion; bark plates without dimple-like resin pockets [3]  
 3. Bark on upper part of trunk reddish to red-brown, platy; upper surface of female cone scale with dark red-brown, purple, or purple-gray border at the apex, sharply contrasting with the rest of the scale; female cone scale umbo usually with a strong prickle; of xeric habitats ... *P. clausa*  
 3. Bark on upper part of trunk gray, generally smooth; upper surface of female cone scale with an inconspicuous light-colored band at the apex, not contrasting sharply with the rest of the scale; female cone scale umbo unarmed or with a weak prickle; mostly of mesic to hydric habitats ... *P. glabra*  
 4. Leaves mostly under 20 cm long; male cones yellowish to brownish [5]  
 4. Leaves 15-45 cm long; male cones purplish [6]  
 5. Trunks commonly with adventitious shoots; female cones variably serotinous, long-persistent, nearly as wide as long; female cone scale umbo with short, weak prickle or none; adaxial surface of seed-cone scales with dark red-brown border distally; leaves drying light green ... *P. serotina*  
 5. Trunks without adventitious shoots; female cones not serotinous, not persistent, ca. 1.5 times longer than broad; female cone scale umbo with a stout prickle; adaxial surface of seed-cone scales lacking dark border distally; leaves drying dark green ... *P. taeda*  
 6. Leafy stems mostly >12 mm thick, with the leaf fascicles in dense pom-pom-like tufts; terminal buds ovoid, silvery white, 3-4 cm long; fascicles of 3 leaves; leaves 20-45 cm long; female cones 15-25 cm, apophyses dull ... *P. palustris*  
 6. Leafy stems mostly <12.1 mm thick, with the leaf fascicles spicate and bottlebrush-like along the stem; terminal buds cylindric, silvery brown, 1.5-2 cm long; fascicles of 2-3 leaves; leaves mostly 15-20 cm long; female cones mostly 9-18 cm long, apophyses lustrous [7]

7. Seedlings with thick shortened stems and clustered buds; leaves almost all in fascicles of 2s, or in 2s and 3s; 3-9 resin canals per needle; leaf hypoderm (2)3-4(5) cells thick; opened cones 8-13 cm long, usually with rounded bottom ... *P. elliotii* var. *densa*

7. Seedlings with slender stems and scattered buds; leaves in fascicles of 2s and 3s on same tree; 3-5 resin canals per needle; leaf hypoderm 2(3) cells thick; opened cones 10-15 cm long, usually with flattened bottom ... *P. elliotii* var. *elliotii*

***Pinus clausa*** (Chapm. ex Engelm.) Vasey ex Sarg.— {AFP}

***Pinus echinata*** Mill.— {AFP}

***Pinus elliotii*** Engelm. var. *elliotii*— {AFP}

***Pinus elliotii*** Engelm. var. *densa* Little & K.W.Dorman— {AFP} Sometimes accepted as a species. Adequate comparisons of DNA sequence data with *P. elliotii* s.str. and *P. caribea* are lacking to yield taxonomic conclusions (see [Schmidtling & Hipkins 2001](#); [Gernandt et al. 2018](#); [Cruz-Nicolás et al. 2024](#)).

***Pinus glabra*** Walter— {AFP}

***Pinus palustris*** Mill.— {AFP} This species is characteristic of fire-maintained uplands in central and northern Florida, supporting a uniquely diverse ecosystem. The species was probably adapted to fire in Florida long, long ago ([Noss 2018](#)). Historically, the tree was widely used for naval stores and logging. Over 90% of the original stands of longleaf pine in Florida (and elsewhere) are gone, most of it lost by the 1970s (Smith et al. 2000; Frost 2006; Hanberry et al. 2023). Many of these areas were planted with loblolly, slash, or sand pine. Efforts have been made to restore some longleaf pine habitats. Though a primarily upland species, in 1768, Miller was informed the species inhabited swamps and thus gave the epithet 'palustris' ([Ward 1974](#)).

***Pinus serotina*** Michx.— {AFP}

***Pinus taeda*** L.— {AFP}

## ARAUCARIALES

ARAUCARIACEAE {AFP}: See [Flora of Australia \(Hill 1998\)](#).

**Araucaria** {AFP}

1. Leaves >1 cm long, flat, bifacial, often spreading ... *A. bidwillii*

1. Leaves <1 cm long, acicular or scale-like, often imbricate or tightly ascending [2]

2. Ultimate branchlets lax, drooping; adult leaves <4 mm long ... *A. columnaris*

2. Ultimate branchlets rigidly erect; adult leaves >4 mm long ... *A. heterophylla*

^ *Araucaria bidwillii* Hook.—

^ *Araucaria columnaris* (G.Forst.) Hook.—

^ *Araucaria heterophylla* (Salisb.) Franco— {AFP}

PODOCARPACEAE {AFP}

1. Leaves opposite to subopposite; leaf blade ovate to lanceolate ... *Nageia nagi*

1. Leaves alternate to pseudowhorled; leaf blade linear-oblong ... *Podocarpus macrophyllus*

**Nageia**

^ *Nageia nagi* (Thunb.) Kuntze—

**Podocarpus** {AFP}

\* *Podocarpus macrophyllus* (Thunb.) D. Don— {AFP}



## CUPRESSALES

### CUPRESSACEAE {AFP}

1. Leaves alternate, deciduous and shed as a unit consisting of the branchlet and its leaves ...

*Taxodium*

1. Leaves opposite or whorled, evergreen [2]

2. Plant dioecious; branchlets bushy, not aligned in one plane; mature female cone fleshy and berry-like, indehiscent ... *Juniperus virginiana*

2. Plants monoecious; branchlets bushy or branchlets aligned in one plane; mature female cone dry and dehiscent [3]

3. Branchlets bushy, not aligned in one plane; terminal branchlets commonly 1.2-7 cm long without branching; leaves in whorls of 3 ... *Callitris glaucophylla*

3. Branchlets mostly aligned in a horizontal or vertical plane; terminal branchlets usually <1.5 cm long without branching (rarely longer); leaves opposite and decussate [4]

4. Branchlets mostly aligned in a horizontal plane; leaf apex acute; pollen cones dark brown ... *Chamaecyparis thyoides*

4. Branchlets mostly aligned in a vertical plane; leaf apex bluntly acute to obtuse; pollen cones yellow-green ... *Platycladus orientalis*

### *Callitris* {AFP}

\**Callitris glaucophylla* JoyThomps. & L.A.S.Johnson— {AFP}

### *Chamaecyparis* {AFP}

*Chamaecyparis thyoides* (L.)Britton et al.— {AFP}

### *Juniperus* {AFP}

*Juniperus virginiana* L.— {AFP}

### *Platycladus* {AFP}

^ *Platycladus orientalis* (L.)Franco— {AFP}

### *Taxodium* {AFP}

1. Leafy branchlets vertically ascending; leaves subulate, appressed to ascending, spirally arranged, not twisted basally ... *T. ascendens*

1. Leafy branchlets spreading; leaves linear, spreading to ascending, appearing distichous, basally twisted ... *T. distichum*

*Taxodium ascendens* Brongn.— {AFP}

*Taxodium distichum* (L.)Rich.— {AFP}

### TAXACEAE {AFP}

1. Branching alternate, sometimes subopposite or pseudowhorled; leaves flexible, without resin canal, aroma not unpleasant when crushed, apex mucronate and soft-pointed, midvein often apparent and somewhat raised; aril red to orange-red, soft, mucilaginous, thick, cup-shaped, open at apex, exposing hard seed coat ... *Taxus floridana*

1. Branching opposite or whorled; leaves rigid, stiff, with central resin canal, malodorous when crushed, apex acute and spine-tipped, midvein typically unapparent or obscure; aril green or green with purple streaks, leathery, resinous, thin, completely enclosing hard seed coat ... *Torreya taxifolia*

**Taxus** {AFP}

*Taxus floridana* Nutt. ex Chapm.— {AFP} Endemic. State Endangered.

**Torreya** {AFP}

*Torreya taxifolia* Arn.— {AFP} Federally Endangered. State Endangered.

## ANGIOSPERMS

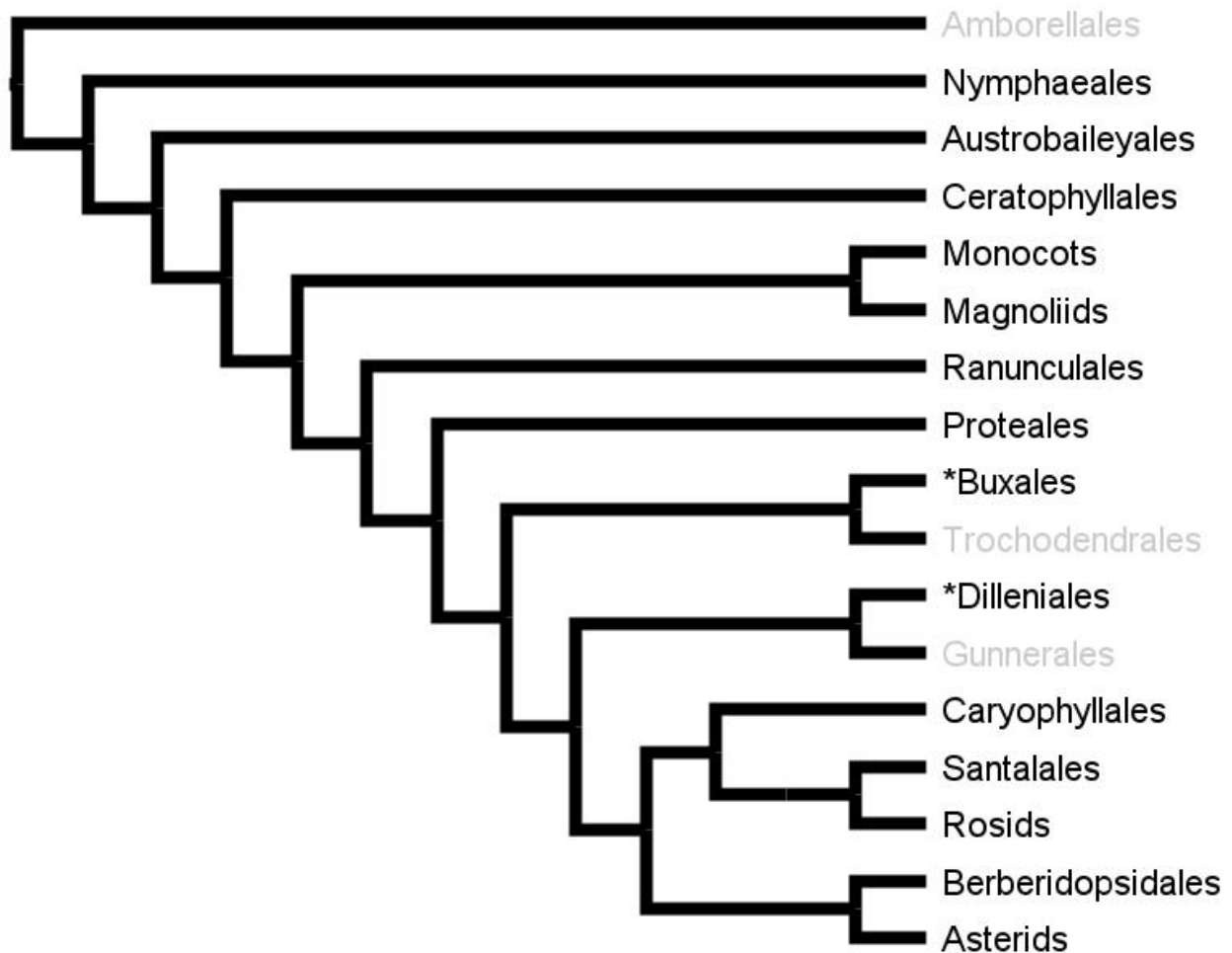


Figure: Estimated phylogeny of extant angiosperms, see [Zuntini et al. \(2024\)](#). Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## BASAL ANGIOSPERMS

### NYMPHAEALES

CABOMBACEAE {AFP}

## CABOMBACEAE

1. Leaves all floating or emergent, peltate (3.5-12 cm long); perianth dull purple; stamens 12 or more ... *Brasenia schreberi*

1. Submersed leaves numerous and deeply dissected (when present, floating leaves peltate and 0.5-3 cm long); perianth white to bluish, sometimes with violet markings; stamens 3-6 ... *Cabomba*

### *Brasenia* {AFP}

*Brasenia schreberi* J.F.Gmel.— {AFP}

### *Cabomba* {AFP}

1. Inner tepals without violet basal margins, 2-5 mm wide; stamens 6; carpels usually 3; seeds with short, straight thick papillae ... *C. caroliniana*

1. Inner tepals with violet basal margins, ca. 2 mm wide; stamens 3; carpels usually 1; seeds with long, curved slender papillae ... *C. palaeformis*

*Cabomba caroliniana* A.Gray— {AFP}

\**Cabomba palaeformis* Fassett— {AFP}

## NYMPHAEACEAE {AFP}

1. Major veins of leaf blade pinnate along the midvein; mature perianth globose or incurved; sepals 5-9(-12), green to yellow; petals less conspicuous and stamen-like; stigmatic disk with margin entire to crenate or dentate, appendages absent ... *Nuphar*

1. Major veins of leaf blade palmate from the blade base (only a few usually less pronounced ones along the midvein); perianth spreading at anthesis; stigmatic disk with prominent, distinct, upwardly incurved appendages around margin ... *Nymphaea*

### *Nuphar* {AFP}

1. Leaf blade ca. 2.5 times as long as wide, the sinus  $< \frac{1}{4}$  the blade length; stigmatic rays elliptic, terminating within 1 mm of the margin ... *N. advena* subsp. *ulvacea*

1. Leaf blade 1-2 times as long as wide, the sinus  $> \frac{1}{4}$  the blade length; stigmatic rays linear to lanceolate, terminating 1-3 mm from the margin [2]

2. Leaf blade generally ovoid, glabrous to slightly pubescent on the lower surface ... *N. advena* subsp. *advena*

2. Leaf blade generally orbicular, densely pubescent on the lower surface ... *N. advena* subsp. *orbiculata*

*Nuphar advena* (Aiton)W.T.Aiton subsp. *advena*— {AFP}

*Nuphar advena* (Aiton)W.T.Aiton subsp. *orbiculata* (Small)Padgett— {AFP}

*Nuphar advena* (Aiton)W.T.Aiton subsp. *ulvacea* (G.S.Mill. & Standl.)Padgett— {AFP}

### *Nymphaea* {AFP}

1. Leaf blade margins strongly sinuate-dentate [2]

1. Leaf blade margins entire or nearly so [4]

2. Plant pubescent; flowers opening at night (closing around noon) [3]

2. Plant glabrate; flowers opening during the day [4]

3. Petiole light green; leaf blade underside pinkish brown, venation lightly contrasting with surface; tepals white to light pink; stamens and stigmatic surface yellow ... *N. lotus*/*N. pubescens*

3. Petiole reddish; leaf blade underside dark purplish, venation strongly contrasting with surface; tepals moderate to dark pink to pinkish red; stamens (at least distal half) and stigmatic surface dark pink to reddish ... *N. rubra*
4. Leaf blade underside with pronounced nearly straight cross veins between the main veins near the petiole; sepals with conspicuous short darkened lines on the outer surface (apart from the veins); petals white ... *N. ampla*
4. Leaf blade underside without pronounced cross veins, or these somewhat reticulate; sepals uniformly colored, without darkened lines or these inconspicuous (veins sometimes darker); petals blue to purple ... *N. nouchali* var. *zanzibariensis*
5. Leaf blade underside with pronounced cross veins between the main veins, especially near the petiole; flowers opening at night (closing around noon) ... *N. jamesoniana*
5. Leaf blade underside without cross veins or with subtle cross veins between the main veins; flowers opening during the day [6]
6. Petals violet to nearly white; sepals with conspicuous short darkened lines on the outer surface ... *N. elegans*
6. Petals yellow to white; sepals uniformly colored, without darkened lines or these inconspicuous (veins sometimes darker) [7]
7. Plant stoloniferous and rhizomatous; leaf blades usually 7-12 cm wide, the petiole often nearer the basal lobes; petals yellow ... *N. mexicana*
7. Plant only rhizomatous, not stoloniferous; leaf blades usually 9-25(45) cm wide, the petiole nearly central; petals white or mostly so ... *N. odorata*

***Nymphaea ampla*** (Salisb.)DC.— {AFP}

\****Nymphaea* × *daubenyana*** W.T.Baxter ex Daubeny (*caerulea* × *micrantha*)— {AFP} Similar to *N. elegans*. Petals blue, leaves entire and the upper surface with a proliferous mound of tissue near petiole.

***Nymphaea elegans*** Hook.— {AFP}

***Nymphaea jamesoniana*** Planch.— {AFP} State Endangered. Western peninsula. First collected by E.P. St. John in 1940 in Citrus County. Possibly introduced.

\****Nymphaea lotus*** L.— {AFP} It is unclear how *N. lotus* (African) and *N. pubescens* (Asian) can be unequivocally distinguished; possibly *N. pubescens* has pinker petals more often (Hooker 1875; Wiersema 1982; Verdcourt 1989; Sharma et al. 1993; La-onsri et al. 2009; Dkhar et al. 2010, 2013; Guruge et al. 2016).

***Nymphaea mexicana*** Zucc.— {AFP}

\****Nymphaea nouchali*** Burm.f. var. ***zanzibariensis*** (Casp.)Verdc.— {AFP} Referred to as *N. caerulea* by Wiersema & Hellquist in FNA, vol. 3.

***Nymphaea odorata*** Aiton— {AFP}

\****Nymphaea rubra*** Roxb. ex Salisb. —

***Nymphaea* × *thiona*** D.B.Ward (*mexicana* × *odorata*)— {AFP} See [Ward 1977](#).

## AUSTROBAILEYALES

### SCHISANDRACEAE {AFP}

1. Shrub to tree; venation of leaf blades mostly obscure ... *Illicium*
1. Vine; venation of leaf blades conspicuous ... *Schisandra glabra*

### *Illicium* {AFP}

1. Leaf tip acuminate; flowers 2.5-5 cm in diameter; tepals 21-33, the inner tepals ligulate, 10-20 mm long, maroon to white; stamens 25-50; flowering February-April ... *I. floridanum*

1. Leaf tip obtuse to shortly acuminate; flowers 0.8-1.2 cm in diameter; tepals 11-16, the inner tepals orbiculate-obovate, 2-4 mm long, yellowish; stamens 6-7; flowering May-July(Oct) ... *I. parviflorum*

***Illicium floridanum*** J.Ellis— {AFP}

***Illicium parviflorum*** Michx. ex Vent.— {AFP} Endemic. State Endangered.

**Schisandra** {AFP}

***Schisandra glabra*** (Brickell)Rehder— {AFP} State Endangered.

## CERATOPHYLLALES

CERATOPHYLLACEAE {AFP}

***Ceratophyllum*** {AFP}

1. Forking of largest leaves 1st or 2nd order (rarely 3rd order); leaves coarse-textured, marginal denticles usually strongly raised on broad base of green tissue; achene margin wingless, with 2 basal spines or tubercles, without marginal spines ... *C. demersum*

1. Forking of largest leaves 3rd or 4th order; leaves fine-textured, marginal denticles not raised on broad base of green tissue, sometimes nearly absent; achene margin winged, with 2 basal spines (rarely absent), with (0)2-20 marginal spines [2]

2. First leaves of plumule simple; achene body (excluding terminal spine) 3-4.5 mm ... *C. australe*

2. First leaves of plumule forked; achene body (excluding terminal spine) 4.5-6 mm ... *C. echinatum*

***Ceratophyllum australe*** Griseb.— {AFP}

***Ceratophyllum demersum*** L.— {AFP}

***Ceratophyllum echinatum*** A.Gray— {AFP}

## MONOCOTYLEDONAE

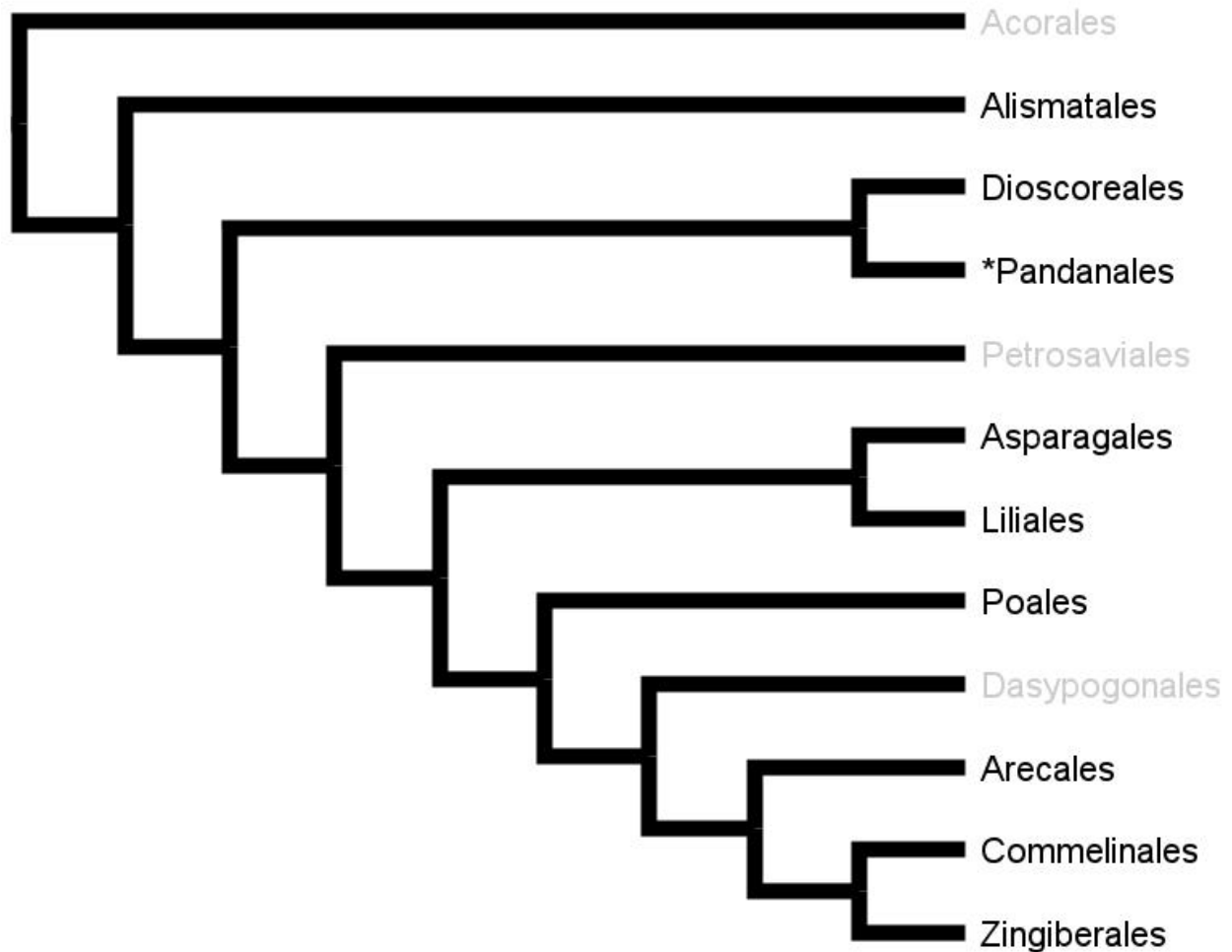


Figure: Estimated phylogeny of extant monocots. Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## ALISMATALES

### TOFIELDIACEAE {AFP}

1. Inflorescences 1-flowered; bracteoles of epicalyx distinct; tepals yellow; anthers with appendages; ovary and fruits conspicuously and densely tuberculate; seeds yellowish ...  
*Harperocallis flava*

1. Inflorescences racemose or thyrstate; bracteoles of epicalyx connate; tepals white to anthers without appendages; ovary and fruits glabrous or with minute, scattered tubercles; seeds reddish brown to brown [2]

2. Stems and rachis glabrous; flowers subtended by a sheathing bract; anthers 9(10) ...  
*Pleea tenuifolia*

2. Stems glandular-pubescent; flowers subtended by 3 minute bracts; anthers 6 ...  
*Triantha racemosa*

### *Harperocallis* {AFP}

*Harperocallis flava* McDaniel— {AFP} Endemic. Federally Endangered. State Endangered.

### *Pleea* {AFP}

*Pleea tenuifolia* Michx.— {AFP}

## Triantha {AFP}

*Triantha racemosa* (Walter) Small— {AFP}

## ARACEAE {AFP}

1. Fronds or leaves minute, floating, mostly solitary or budding, 0.3-6 mm long (Lemnoideae) ...  
Key A

1. Fronds or leaves not minute, terrestrial or floating, several, 10-1000+ mm long [2]

2. Plant floating or stranded, leaves forming a rosette ... *Pistia stratiotes*

2. Plant terrestrial or aquatic, not floating, rooted in substrate, leaves not forming a rosette [3]

3. Vines, vine-like, epiphytic, creeping or climbing, or free-standing and shrubby, the stems elongate with adventitious roots nearly throughout (some taxa only fertile when climbing, immature plants sometimes terrestrial and creeping and not climbing) ... Key B

3. Erect or epiphytic herb, any adventitious roots generally confined to the base of the stem or the stem not much elongate [4]

4. Leaves compound ... Key C

4. Leaves simple ... Key D

Key A: Lemnoideae

1. Roots absent; frond without veins; daughter fronds from single terminal pouch or cavity [2]

1. Roots 1-21 per frond; fronds with 1-21 veins (often obscure); daughter fronds and flowers from 2 lateral pouches at frond base [3]

2. Fronds 3-dimensional (globular, ovoid, or boat-shaped), without air spaces; daughter fronds from terminal conic pouch or cavity at mother-frond base; flower in cavity on median line of upper frond surface ... *Wolffia*

2. Fronds flat (linear, ribbon-, sabre-, or tongue-shaped, or ovate), with air spaces; daughter fronds from terminal flat pouch at mother-frond base; flower(s) in cavity at side of median line of upper frond surface ... *Wolffiella*

3. Roots 1 per frond; fronds with 1-5(7) veins, without scale at base; pigment cells absent (red pigmentation present in some species) ... *Lemna*

3. Roots (1)2-21 per frond; fronds with (3)5-16(21) veins, surrounded at base by small scale covering point of attachment of roots; pigment cells present (visible in dead fronds as brown dots) [4]

4. Fronds 1.5-2 times as long as wide, with (3)5-7 veins, and with (1)2-7(12) roots, all perforating scale ... *Landoltia punctata*

4. Fronds 1-1.5 times as long as wide, with 7-16(21) veins, and with 7-21 roots, 1-2 perforating scale ... *Spirodela polyrhiza*

Key B

1. Leaves monomorphic [2]

1. Leaves dimorphic, the immature stems near ground with simple or few-lobed leaves, the fertile climbing stems with larger, often more divided or lobed leaves [5]

2. Vine or vine-like, stems weak (some taxa only fertile when climbing, immature plants sometimes terrestrial and creeping and not climbing) ... *Philodendron*

2. Free-standing to scarcely vining (roots sometimes wrapping around trees), the stem stout and trunk-like ... *Thaumatococcus*

3. Juvenile leaves with the base sagittate or hastate, mature leaf blades pedately divided ... *Syngonium*

3. Juvenile leaf blade bases cordate to rounded, mature leaf blades pinnatifid or perforate [4]
4. Leaves not developing holes and perforations or these minute; ovary unilocular or incompletely bilocular, with a single intrusive placenta bearing 2-4(6) ovules at its base; seeds curved, 3-7 mm long, 1.5-4 mm wide, testa hard, endosperm present ... *Epipremnum*
4. Leaves usually developing holes and perforations; ovary 2-locular, the septum perforate at its base, 2 basal ovules per loculus; seeds globose to oblong, 5-22 mm long, 4-12 mm wide, testa soft, endosperm absent ... *Monstera*

#### Key C

1. Leaves pinnate ... *Zamioculcas*
1. Leaves 3-foliolate, palmately compound, pedately compound, or 2- or more-pinnately compound [2]
2. Leaves 3-foliolate, palmately compound, or pedately compound, present when flowering ... *Arisaema*
2. Leaves 2- or more compound, sometimes absent during flowering [3]
3. Leaves tripartite, usually dividing into 3 equal parts at the petiole apex ... *Amorphophallus*
3. Leaves 2- or more pinnately compound with a central dominant axis ... *Gonatopus boivinii*

#### Key D

1. Leaves and peduncles with numerous prickles ... *Lasia spinosa*
1. Leaves and peduncles lacking prickles [2]
2. Leaf blades rounded, acute, truncate, to shallowly cordate at the base [3]
2. Leaf blades strongly sagittate, hastate, or peltate at the base [8]
3. Aquatic herbs with leaves frequently submersed ... *Cryptocoryne*
3. Aquatic or terrestrial herbs, the leaves emergent or floating [4]
4. Leaves with obscure, longitudinal parallel venation; spathe small and restricted to the very base of the scape ... *Orontium aquaticum*
4. Leaves with evident lateral or secondary veins; spathe larger, fully enclosing the spadix or nearly so [5]
5. Leaves usually variegated white or red and green; flowers unisexual; spathe enclosing the spadix at maturity [6]
5. Leaves usually uniformly greens; flowers bisexual; spathe expanded or lax, not enclosing spadix at maturity [7]
6. Leaves variegated red and green or white and green; female part of spadix free from the spathe ... *Aglaonema commutatum* var. *maculatum*
6. Leaves variegated white and green, or not variegated; female part of spadix adnate to the spathe and tightly concealed by the spathe ... *Dieffenbachia seguine*
7. Spathe purple, red, green, rarely white; spadix rather smooth, the flowers embedded; pollen sulcate ... *Anthurium*
7. Spathe white; spadix tuberculate, with protruding flowers; pollen striate ... *Spathiphyllum wallisii*
8. Leaves variegated and usually 1-2 per stem ... *Caladium*
8. Leaves not variegated, 1-several per stem [9]
9. Spathe often brightly colored, purple, red, pink, white, sometimes green, often expanded or lax and not tightly enclosing the spadix; flowers bisexual ... *Anthurium*
9. Spathe green to white, sometimes enclosing the spadix; flowers unisexual [10]
10. Leaf blade peltate [11]
10. Leaf blade sagittate or hastate [12]
11. Leaf blade margins often undulate, the lateral veins prominently raised ... *Alocasia*



11. Leaf blade margins plane to weakly undulate, the lateral veins plane with the surface ... Colocasia esculenta
12. Petiole to 0.6 m long; leaf blades to 50 cm long, to 25 cm wide, the lateral veins mostly uniform and parallel except near the margin ... Peltandra
12. Petiole to 2 m long; leaf blades to 90+ cm long or wide, the lateral veins differentiating into thickened secondary and smaller anastomosing tertiary ones [13]
13. Leaf blade erect to ascending, the lobes and apex obtuse to rounded ... Alocasia
13. Leaf blade reflexed, the lobes and apex acute ... Xanthosoma

### Aglaonema {AFP}

^ *Aglaonema commutatum* Schott var. *maculatum* (Hook.f.) Nicolson — {AFP}

### Alocasia {AFP}

1. Mature leaves not peltate, juvenile leaves sometimes slightly peltate, leaves and spathe not glaucescent; spathe 13-35 cm long, subequal to the spadix, often lax and falling away and not enclosing the spadix at maturity ... *A. macrorrhizos*

1. Mature and juvenile leaves peltate, leaves and spathe often glaucescent; spathe 10-25 cm, longer than the spadix, hooded and enclosing the spadix at maturity ... *A. odora*

^ *Alocasia macrorrhizos* (L.) G. Don — {AFP}

^ *Alocasia odora* (G. Lodd.) Spach — {AFP}

### Anthurium {AFP}

^ *Anthurium schlechtendalii* Kunth — {AFP}

### Arisaema {AFP}

1. Leaflets (5)7-13(-21); spadix tapering apically, longer than spathe ... *A. dracontium*

1. Leaflets 3-5; spadix blunt apically, shorter than spathe [2]

2. Leaflets (3)5, lower surface usually glaucous; spathe blade apex obtuse to abruptly apiculate; spadix terminal sterile appendix 1-2 mm wide, usually slightly angled or curved away from the blade ... *A. quinatum*

2. Leaflets 3, lower surface glaucous or not; spathe blade apex acute to acuminate; spadix terminal sterile appendix 2-10 mm wide, generally straight [3]

3. Spathe blade internally usually wholly dark purple with few to no pale lines, uncommonly wholly green or green with white stripes; spathe tube flange (deflexed portion of tube apex) 1-3 mm broad, usually revolute; spadix terminal sterile appendix 2-5 mm wide; fruits 4-5(7) mm wide ... *A. pusillum*

3. Spathe blade internally not wholly dark purple; spathe tube flange (deflexed portion of tube apex) 2-7 mm broad, revolute to nearly plane; spadix terminal sterile appendix 4-10 mm wide; fruits (6)8-12 mm wide [4]

4. Spathe blade internally usually green with white stripes, uncommonly dark purple with pale stripes, 2-3 times as long as wide, apex long-acuminate; spadix terminal sterile appendix width even throughout its length or slightly widened near the apex ... *A. acuminatum*

4. Spathe blade internally usually dark purple with green stripes, sometimes green with white stripes, 1-2 times as long as wide, the apex acute to short-acuminate; spadix terminal sterile appendix distinctly widened at the apex ... *A. triphyllum*

***Arisaema dracontium*** (L.) Schott — {AFP}

***Arisaema quinatum*** (Nutt.)Schott— {AFP}

***Arisaema triphyllum*** (L.)Schott— {AFP}

**Colocasia** {AFP}

\****Colocasia esculenta*** (L.)Schott— {AFP}

**Cryptocoryne** {AFP}

^ ***Cryptocoryne walkeri*** Schott— {AFP}

**Dieffenbachia** {AFP}

^ ***Dieffenbachia seguine*** (Jacq.)Schott— {AFP}

**Epipremnum** {AFP}

\****Epipremnum aureum*** (Linden & André)Bunting— {AFP}

\****Epipremnum pinnatum*** (L.)Engl.— {AFP}

**Gonatopus**

\****Gonatopus boivinii*** (Decne.)Engl.— {AFP}

**Lemna** {AFP} Visualising veins typically requires clearing the pigments, e.g. preserving some fronds in ethanol, boiling in lactophenol, or boiling in ethanol and placing in dilute bleach.

1. Frond with 1 vein (sometimes obscure or subtle), without reddish color (no anthocyanin) [2]

1. Frond with 3-5(-7) veins (sometimes obscure or subtle), with or without reddish color (no anthocyanin) [3]

2. Frond 1-2 times longer than wide, midvein not longer than  $\frac{2}{3}$  the distance from the node to the apex; seed with 12-15 indistinct ribs ... *L. minuta*

2. Frond 1.3-3 times longer than wide, midvein at least  $\frac{3}{4}$  of distance from the node (point of root attachment) to the apex; seed with 15-29 indistinct ribs ... *L. valdiviana*

3. Root sheath winged at base; root tip usually sharp pointed; roots to 3(-3.5) cm; fronds 1-3 times longer than wide, without reddish color or spots (no anthocyanin), mostly with 1 very distinct papilla near apex on upper surface ... *L. aequinoctialis*

3. Root sheath not winged; root tip mostly rounded; roots often longer than 3 cm; fronds 1-2 times longer than wide, often with reddish tinge or spots (anthocyanin), with or without distinct papillae near apex on upper surface [4]

4. Fronds 1.3-2 times longer than wide, not reddish on the lower surface (or at least much less so than on upper); greatest distance between lateral veins near or proximal to middle ... *L. minor*

4. Fronds 1-1.5 times longer than wide, often reddish on the lower surface (more intensely so than on upper); greatest distance between lateral veins near or distal to middle ... *L. obscura*

***Lemna aequinoctialis*** Welw.— {AFP}

***Lemna minor*** L.— {AFP}

***Lemna minuta*** Kunth— {AFP}

***Lemna obscura*** (Austin)Daubs— {AFP}

***Lemna valdiviana*** Phil.— {AFP}

**Landoltia** {AFP}

\**Landoltia punctata* (G.Mey.)Les & D.J.Crawford— {AFP}

### Lasia {AFP}

^ *Lasia spinosa* (L.)Thwaites— {AFP}

### Monstera {AFP}

1. Leaf blade entire, or with few lacerations ... *Monstera adansonii*

1. Leaf blade regularly pinnatifid ... *Monstera deliciosa*

^ *Monstera deliciosa* Liebm.— {AFP}

### Orontium {AFP}

*Orontium aquaticum* L.— {AFP}

### Peltandra {AFP}

1. Leaf blade lateral veins of similar thickness; spadix ca. 1/2 as long as spathe; spathe blade white and usually broadly expanded, scarcely enclosing the spadix; fruits red ... *P. sagittifolia*

1. Leaf blade with at least a few conspicuously thicker lateral veins; spadix usually >1/2 as long as spathe; spathe blade green and paler along the margin, usually tightly enclosing the spadix; fruits green to purplish green ... *P. virginica*

*Peltandra sagittifolia* (Michx.)Morong— {AFP}

*Peltandra virginica* (L.)Schott— {AFP}

### Philodendron {AFP}

1. Free-standing to scarcely vining (roots sometimes wrapping around trees), the stem stout and trunk-like (*Thaumatophyllum*) [2]

1. Vine or vine-like, stems weak (some taxa only fertile when climbing, immature plants sometimes terrestrial and creeping and not climbing) (*Philodendron* s.str.) [3]

2. Leaf blade with well developed basal (posterior) pinnatifid lobes, the medial (anterior) blade pinnatifid with lateral lobes themselves often lobed, blade 50-150 cm long, 40-90 cm wide, the margins usually laxly undulate ... *Thaumatophyllum bipinnatifidum*

2. Leaf blade pinnatifid, the basal (posterior) lobes absent or poorly developed, the medial (anterior) blade pinnatifid with the lateral lobes lacking additional lobing, blade 10-25(40) cm long, 5-15(20) cm wide, the margins usually stiffly plane ... *Thaumatophyllum xanadu*

3. Leaf blade divided [4]

3. Leaf undivided [5]

4. Leaf blade pinnately lobed, the sinuses reaching ca. 1/2 distance to midrib ... *P. lacerum*

4. Leaf blade deeply pinnatifid or bipinnatifid, the sinuses nearly reaching the midrib ... *P. radiatum*

4. Leaf blade ovate, the midrib 1-1.4 times as long as the blade width ... *P. hederaceum*

4. Leaf blade ovate-lanceolate to deltate-ovate, the midrib 1.4-2 times as long as the blade width [5]

5. Cataphyll and petiole usually purplish or reddish ... *P. erubescens*

5. Cataphyll and petiole green ... *P. sagittifolium*

^ *Philodendron erubescens* K.Koch & Augustin—

^ *Philodendron hederaceum* (Jacq.)Schott var. *oxycardium* (Schott)Croat— {AFP}

^ *Philodendron radiatum* Schott—

^ *Philodendron sagittifolium* Liebm.—

## Pistia {AFP}

*Pistia stratiotes* L.— {AFP}

## Spirodela {AFP}

*Spirodela polyrhiza* (L.)Schleiden— {AFP}

## Syngonium {AFP}

1. Stems not glaucous, sometimes with numerous rough emergences; petioles subterete, usually with a sharp medial rib; on fertile portion of stem, leaf segments narrowly lanceolate to ovate-lanceolate, mostly with a prolonged narrowly deltate apex; rachis usually gradually curved, not angular between each segment; staminate flowers deeply retuse at the apex and completely fused into a synandarium, showing no indication of the line of fusion ... S. angustatum

angustatum

1. Stems glaucous or not, smooth, lacking any emergences; petioles subterete or with only an obtuse medial rib; on fertile portion of stem, leaf segments ovate to obovate, mostly with a short broadly deltate to abruptly-short acuminate apex; staminate flowers truncate at the apex and partially to completely fused into a synandrium, usually with an indication of the line of fusion ... S. podophyllum

\**Syngonium angustatum* Schott— {AFP}

\**Syngonium podophyllum* Schott— {AFP}

## Thaumatophyllum

1. Leaf blade with well developed basal (posterior) pinnatifid lobes, the medial (anterior) blade pinnatifid with lateral lobes themselves often lobed, blade 50-150 cm long, 40-90 cm wide, the margins usually laxly undulate ... *Thaumatophyllum bipinnatifidum*

1. Leaf blade pinnatifid, the basal (posterior) lobes absent or poorly developed, the medial (anterior) blade pinnatifid with the lateral lobes lacking additional lobing, blade 10-25(40) cm long, 5-15(20) cm wide, the margins usually stiffly plane ... *Thaumatophyllum xanadu*

^ *Thaumatophyllum bipinnatifidum* (Schott ex Endl.)Sakur et al.—

^ *Thaumatophyllum xanadu* (Croat et al.)Sakur. et al.—

## Wolffia {AFP}

1. Fronds boat-shaped, 0.3-0.7 times as deep as wide, 1–1.5 times as long as wide, with a conical papilla in center of upper surface, usually brown punctate (esp. apparent in dead leaves) ... *W. brasiliensis*

1. Fronds globular to ovoid, 1-1.5 times as deep as wide, 1-2 times as long as wide, lacking a a conical papilla, not brown punctate

2. Fronds 1-1.3 times as long as wide, 0.4-1.2 mm wide ... *W. columbiana*

2. Fronds 1.3-2 times as long as wide, 0.3-0.5 mm wide ... *W. globosa*

*Wolffia brasiliensis* Wedd.— {AFP}

*Wolffia columbiana* H.Karst.— {AFP}

\**Wolffia globosa* (Roxb.)Hartog & Plas— {AFP}

### Wolffiella {AFP}

1. Fronds (4)6-15(-20) times as long as wide; angle of pouch 25°-50° ... *W. gladiata*

1. Fronds 1.5-8 times as long as wide; angle of pouch 45°-120° [2]

2. Angle of pouch 70°-120°; tract of elongated cells running between median line and edge of lower wall of pouch; area of air spaces within frond rarely longer than wide ... *W. lingulata*

2. Angle of pouch 45°-90°; tract of elongated cells running along or close to edge of lower wall of pouch; area of air spaces within frond mostly longer than wide ... *W. oblonga*

***Wolffiella gladiata*** (Hegelm.)Hegelm.— {AFP}

***Wolffiella lingulata*** (Hegelm.)Hegelm.— {AFP}

***Wolffiella oblonga*** (Phil.)Hegelm.— {AFP}

### Xanthosoma {AFP}

1. Above-ground stem absent or scarcely developed to 40 cm long; leaf blade midrib of basal lobe (posterior rib) without blade tissue (naked) along the basal 1.5-2.0 cm along the sinus or proximal side ... *Xanthosoma robustum*

1. Above-ground stem sometimes robust, to 1 m long, sometimes not apparent; leaf blade midrib of basal lobe (posterior rib) with blade tissue throughout along the sinus or proximal side, sometimes shortly naked (<1 cm) on larger leaves ... *Xanthosoma sagittifolium*

\****Xanthosoma robustum*** Schott—

\****Xanthosoma sagittifolium*** (L.)Schott— {AFP}

### ALISMATACEAE {AFP}

1. Flowers usually unisexual, the distal flowers male, the proximal flowers female; fruit compressed, often with a curved lateral wing ... *Sagittaria*

1. Flowers all bisexual; fruit plump, ribbed, without a lateral wing [2]

2. Plant more than 10 cm tall, with submersed, sessile leaves usually present; leaf blades broadly lanceolate, ovate, or cordate; pistils 45-250 ... *Echinodorus*

2. Plant less than 10 cm tall with submersed leaves absent or petiolate; leaf blades linear-lanceolate; pistils 15-20 ... *Helanthium tenellum*

### Echinodorus {AFP}

1. Inflorescence decumbent to arching, the main axis not appreciably thicker towards the base; veins of the sepals papillose-ridged; achene with a pair of elongate glands near the middle ... *E. cordifolius*

1. Inflorescence erect, the main axis becoming noticeably thicker towards the base; veins of the sepals smooth; achene with elongate glands just below the beak [2]

2. Leaves glabrous; stamens 9-15; fruit beak 1 mm long or longer ... *E. berteroi*

2. Leaves usually with stellate trichomes near the junction of the petiole and leaf blade; stamens usually 21; fruit beak ca. 0.5 mm long ... *E. grandiflorus*

***Echinodorus berteroi*** (Spreng.)Fassett— {AFP}

***Echinodorus cordifolius*** (L.) Griseb.— {AFP}

\****Echinodorus grandiflorus*** (Cham. & Schltldl.)Micheli— {AFP}

### Helanthium {AFP}

***Helanthium tenellum*** (Mart. ex Schult. & Schult.f.)Britton ex J.G.Sm.— {AFP}

## Hydrocleys {AFP}

\**Hydrocleys nymphoides* (Humb. & Bonpl. ex Willd.) Buchenau— {AFP}

## Sagittaria {AFP}

1. Blade base of emergent leaves uniformly cordate, sagittate, to hastate [2]
1. Blade base of emergent leaves rounded to acute (rarely a few cordate, sagittate, to hastate) or leaves bladeless phyllodia [5]
2. Rhizomatous and stoloniferous; fruiting pedicels recurved (rarely spreading); pistillate sepals mostly erect and closely enclosing flower or fruiting head, occasionally spreading to recurved; petals with a purple to greenish spot at the base ... *S. montevidensis*
2. Stoloniferous only; fruiting pedicels spreading to ascending or absent; pistillate sepals mostly spreading to recurved, not enclosing flower; petals white [3]
3. Leaves and bracts glabrous or pubescent; nodal bracts 3-8 mm long, connate at least ¼ total length; achene face without wings, with (0)1(2) glands, beak horizontal and 1-2 mm long ... *S. latifolia*
3. Leaves and bracts glabrous or papillate; nodal bracts 5-13(30) mm long, distinct or connate much less than ¼ total length; achene face with 0-2 wings, 0 glands, beak ascending to recurved and 1-17 mm long [4]
4. Inflorescence of 5-12 whorls; nodal bracts 7-13(30) mm long; achene face with 0-2 wings, 0 glands, beak ascending to recurved and 4-17 mm long ... *S. australis*
4. Inflorescence of 2-4 whorls; nodal bracts 5-13(25) mm long; achene face with 1-3 wings, 1-2 glands, beak ascending to recurved and 1-2 mm long ... *S. engelmanniana*
5. Filaments glabrous; pistillate sepals mostly erect and closely enclosing flower or fruiting head, occasionally spreading to recurved; fruiting pedicels recurved (rarely spreading), usually thicker than staminate pedicels [6]
5. Filaments pubescent; pistillate sepals mostly spreading to recurved, not enclosing flower; fruiting pedicels spreading to ascending or absent [9]
6. Leaves with distinct blades to 6 cm wide; filaments pubescent ... *S. platyphylla*
6. Leaves bladeless or the blades to 3 cm wide; filaments glabrous [7]
7. Plant usually <11 cm tall or long; leaves 1-5 mm wide, phyllodia lenticular in cross section; fruiting pedicels 0.2-1.1 cm long; mostly brackish waters ... *S. subulata*
7. Plant usually >9 cm tall or long; leaves 2.5-25 mm wide, phyllodia flattened in cross section; fruiting pedicels 1.5-6.5 cm long; mostly fresh waters [8]
8. Plant submersed to emergent or stranded; leaves 5-50 cm long (rarely 100+ cm long), usually some lateral or cross venation evident, all phyllodia or some with floating or emergent, ovate to elliptic blades ... *S. filiformis*
8. Plant submersed (rarely stranded); leaves 30-200(250) cm long, lateral or cross venation obscure, all phyllodia and bladeless ... *S. kurziana*
9. Rhizomes lacking, stolons and corms present; phyllodia or blades 1-5 mm wide (sheath at base to 10 mm wide), lateral or cross venation obscure; inflorescence of 1-5 whorls; bracts to 4 mm long; filaments dilated at base ... *S. isoetiformis*
9. Rhizomes coarse, stolons and corms lacking; phyllodia or blades 2-250 mm wide (sheath at base 4-50 mm wide), usually some lateral or cross venation evident; inflorescence of 1-13 whorls; bracts 3-10(50) mm long; filaments dilated or not at base [10]
10. Leaves 1-25 cm wide; bracts and sepals papillose or not; filaments longer than anthers, cylindrical, not dilated at base [11]

- 10. Leaves 0.5-4 cm wide; bracts and sepals not papillose; filaments shorter than to subequal to anthers, dilated at base [12]
- 11. Bracts and sepals striate to ribbed ... *S. lancifolia* subsp. *lancifolia*
- 11. Bracts and sepals papillose ... *S. lancifolia* subsp. *media*
- 12. Bracts free or connate <1/4 of length, tips acuminate; inflorescence usually paniculate, branching at the proximal nodes ... *S. chapmanii*
- 12. Bracts connate at least 1/4 of length, tips obtuse to acute; inflorescence usually racemose, not branching at the proximal nodes [13]
- 13. Phyllodia 0.2-1.3 cm wide; pistillate pedicels 0.5-3 cm long ... *S. graminea* var. *graminea*
- 13. Phyllodia 1-2.5 cm wide; pistillate pedicels 2.1-5 cm long ... *S. graminea* var. *weatherbiana*

***Sagittaria australis*** (J.G.Sm.) Small— {AFP}

***Sagittaria chapmanii*** (J.G.Sm.) C. Mohr— {AFP}

***Sagittaria filiformis*** J.G.Sm.— {AFP}

***Sagittaria graminea*** Michx. var. ***graminea***— {AFP}

***Sagittaria graminea*** Michx. var. ***weatherbiana*** (Fernald) Bogin— {AFP}

***Sagittaria isoetiformis*** J.G.Sm.— {AFP}

***Sagittaria kurziana*** Glück— {AFP}

***Sagittaria lancifolia*** L. subsp. ***lancifolia***— {AFP}

***Sagittaria lancifolia*** L. subsp. ***media*** (Micheli) Bogin— {AFP}

***Sagittaria latifolia*** Willd.— {AFP}

\****Sagittaria montevidensis*** Cham. & Schltdl.— {AFP}

***Sagittaria platyphylla*** (Engelm.) J.G.Sm.— {AFP}

***Sagittaria subulata*** (L.) Buchenau— {AFP}

## HYDROCHARITACEAE {AFP}

- 1. Leaves petiolate or in a pseudowhorl terminating an elongate naked erect stem, the blade generally oblong to narrowly elliptic or ovate [2]
- 1. Leaves sessile (not pseudowhorled and terminating an elongate naked stem), generally linear, linear-lanceolate, to oblong [4]
- 2. Leaf blades oblong to narrowly elliptic, 0.6-8 mm wide; brackish to marine ... *Halophila*
- 2. Leaf blades generally ovate, 15-150 mm wide; freshwater [3]
- 3. Leaf blades 1-10 cm long, usually strongly cordate at base, some with aerenchyma on lower surface ... *Limnobium spongia*
- 3. Leaf blades 7-20 cm long, mostly truncate, cuneate, to subcordate at base, without aerenchyma on lower surface ... *Ottelia alismoides*
- 4. Leaves basal, 6-100 cm long [5]
- 4. Leaves on an elongate stem, 0.4-3 cm long [6]
- 5. Rhizome scaly or fibrous, stout, with short internodes; leaves 2-ranked and flattened together at base, entire or subtly serrulate distally, without lacunae; fruits spheric, echinate; brackish to marine ... *Thalassia testudinum*
- 5. Rhizomes naked, slender, elongate; leaves spirally arranged, serrulate to entire, fruits cylindrical to ellipsoid, ridged; freshwater to brackish ... *Vallisneria spiralis*
- 6. Leaves 0.1-2.5(4) mm wide, opposite (sometimes crowded and pseudowhorled) ... *Najas*
- 6. Leaves 2-4(5) mm wide, whorled at most nodes [7]
- 7. Leaves 10-40 mm long, (2)5-8(10) per node ... *Egeria densa*
- 7. Leaves 5-15(20) mm long, 2-8 per node [8]
- 8. Leaf margins and midveins entire; intravaginal scales squamules entire or fringed with clear marginal hairs ... *Elodea canadensis*

8. Leaf margins and the lower side midvein serrulate or prickly; intravaginal squamules fringed with orange-brown hairs ... *Hydrilla verticillata*

### **Egeria** {AFP}

\**Egeria densa* Planch.— {AFP}

### **Elodea** {AFP}

*Elodea canadensis* Michx.— {AFP}

### **Halophila** {AFP}

1. Leaves 4-8 in a pseudowhorl at the terminus of an erect stem; dioecious ... *H. engelmannii*

1. Leaves usually 2 and petiolate, directly attached to rhizome; dioecious or monoecious [2]

2. Leaf blade 0.6-4 mm wide, margin entire, glabrous; only pistillate flowers produced, staminate flowers absent or unknown in Florida ... *H. ovalis*

2. Leaf blade 3-8 mm wide, margin finely serrulate, pubescent to glabrous; staminate and pistillate flowers produced [3]

3. Petiole filiform, 0.2-0.7 mm wide at mid-length; leaf blade 10-20(25) mm long, 2.5-4 times as long as wide; monoecious ... *H. decipiens*

3. Petiole ligulate, 0.8-1.5 mm wide at mid-length; leaf blade (20)25-50(60) mm long; dioecious ... *H. stipulacea*

*Halophila decipiens* Ostenf.— {AFP}

*Halophila engelmannii* Asch.— {AFP}

\*\**Halophila ovalis* (R.Br.)Hook.f.— {AFP} Formerly considered an endemic, as *H. johnsonii*.

Results of genomic analyses find *H. johnsonii* is a synonym of *H. ovalis*, and possibly the Florida material dispersed from East Africa or Antigua (Waycott et al. 2021). Federally Threatened. State Endangered.

\**Halophila stipulacea* (Forssk.)Asch.— Miami-Dade Co., discovered Sep 2024.

### **Hydrilla** {AFP}

\**Hydrilla verticillata* (L.f.)Royle— {AFP}

### **Limnobium** {AFP}

*Limnobium spongia* (Bosc)Rich. ex Steud.— {AFP}

### **Najas** {AFP}

1. Internodes usually with prickles; leaf midrib with prickles; testa pitted, 10-15 cell layers thick ... *N. marina*

1. Internodes and leaf midrib without prickles; testa smooth or pitted, 3 cell layers thick [2]

2. Leaf margins minutely serrulate, usually >15 teeth per side, the teeth unicellular ... *N. guadalupensis*

2. Leaf margins conspicuously serrulate, usually <16 teeth per side, the teeth multicellular [3]

3. Leaves spreading to ascending with age; seeds not recurved ... *N. wrightiana*

3. Leaves usually becoming recurved with age; seeds recurved [4]

4. Leaves becoming laxly stiff, with 5-9 teeth per side; seeds strongly recurved, greenish brown, the areoles regularly arranged in ca. 20 longitudinal rows, not ladderlike, 4-angled, longer than broad, end walls raised ... *N. filifolia*



4. Leaves stiff, with 7-15 teeth per side; seeds slightly recurved, purplish, testa dull, 3 cell layers thick, pitted, the areoles regularly arranged in ca. 15 longitudinal rows, ladderlike, 4-angled, broader than long, end walls not raised ... *N. minor*

***Najas filifolia*** R.R.Haynes— {AFP} State Threatened.

***Najas guadalupensis*** (Spreng.)Magnus— {AFP}

***Najas marina*** L.— {AFP}

\****Najas minor*** All.— {AFP}

***Najas wrightiana*** A.Braun— {AFP}

**Ottelia** {AFP}

\****Ottelia alismoides*** (L.)Pers.— {AFP}

**Thalassia** {AFP}

***Thalassia testudinum*** K.D.Koenig— {AFP}

**Vallisneria** {AFP}

***Vallisneria americana*** Michx.— {AFP}

**JUNCAGINACEAE** {AFP}

**Triglochin** {AFP}

***Triglochin striata*** Ruiz & Pav.— {AFP}

**CYMODOCEACEAE** {AFP}

1. Leaf blades flat, the tip truncate-dentate; flowers solitary; style simple; anthers attached at different levels on axis ... *Halodule wrightii*

1. Leaf blades cylindric, the tip rounded to truncate with marginal extensions; flowers in cymes; style divided into 2 stigmas; anthers attached at same point on axis ... *Syringodium filiforme*

Seagrass key

1. Leaf blades 0.3-2 mm wide, linear, without a distinct petiole [2]

1. Leaf blades 0.6-12 mm wide, if <2 mm wide then usually petiolate and narrowly elliptic to linear-elliptic (Hydrocharitaceae) [4]

2. Leaf blade tapered to a finely serrulate, acute tip (Ruppiaceae) ... *Ruppia maritima*

2. Leaf blade not tapered or only slightly so, not serrulate, the tip truncate to rounded with teeth or extensions (Cymodoceaceae) [3]

3. Leaf blades flat, the tip truncate-dentate ... *Halodule wrightii*

3. Leaf blades cylindric, the tip rounded to truncate with marginal extensions ... *Syringodium filiforme*

4. Leaf-bearing nodes separated by scaly rhizomes; leaves 10-60 cm long, petiole lacking; styles 6-8; fruits echinate, dehiscent into 6-8 irregular valves ... *Thalassia testudinum*

4. Leaf-bearing nodes separated by naked rhizomes; leaves 0.5-3 cm long, petiole often apparent; styles 3-5; fruits smooth or ridged, not echinate, dehiscent by pericarp decay ... *Halophila*

**Halodule** {AFP}

***Halodule wrightii*** Asch.— {AFP}

## Syringodium {AFP}

*Syringodium filiforme* Kütz.— {AFP}

## RUPPIACEAE {AFP}

### Ruppia {AFP}

*Ruppia maritima* L.— {AFP}

## POTAMOGETONACEAE {AFP}

1. Stipular sheaths of submersed leaves free from base of leaf blade or adnate for less than 1/2 length of stipule; leaves both submersed and floating or all submersed, submersed blades translucent, flattened, not channeled; peduncle stiff, sometimes projecting inflorescence above surface of water ... Potamogeton

1. Stipular sheaths of submersed leaves adnate to base of leaf blade for 2/3 or more length of stipule; leaves all submersed, blades opaque, turgid, channeled; peduncle flexible, not projecting inflorescence above surface of water ... Stuckenia pectinata

### Potamogeton {AFP}

1. Stipular sheaths of submersed leaves adnate to base of leaf blade, tip projecting as ligule ... P. diversifolius)

1. Stipular sheaths of submersed leaves free from base of leaf blade or with only 1/–5 sheath adnate, ligule not obvious [2]

2. Submersed leaf blade filiform, linear, or ribbon-like, 0.1-10 mm wide [3]

2. Submersed leaf blades broadly linear-oblong, lanceolate, elliptic, to nearly orbiculate, 3-58 mm wide (occasional stranded plants without submersed leaves) [6]

3. Rhizomes present; floating leaves present, at least in some plants in population [4]

3. Rhizomes absent; floating leaves absent [5]

4. Lacunae prominent in submersed leaves ... P. epihydrus

4. Lacunae absent in submersed leaves ... P. floridanus

5. Fruits with abaxial keel or ridge ... P. foliosus

5. Fruits with abaxial surface rounded [6]

6. Leaf blade with 0-2 rows of lacunae along midrib, apex acute, rarely apiculate, rarely with bristle; stipules connate; peduncles filiform to cylindric, 1-3 per plant; inflorescences interrupted; mature fruits obovoid, sides concave, beak toward adaxial edge, rarely median ... P. pusillus subsp. pusillus

6. leaf blade with 1-5 rows of lacunae along midrib, apex acute to obtuse; stipules convolute; peduncles cylindric, more than 3 per plant; inflorescences continuous; mature fruits widest at middle or ovoid, sides rounded, beak median, not toward adaxial edge ... P. pusillus subsp. tenuissimus

7. Stem flattened; leaf blade margins conspicuously serrate; fruit beak 2–3 mm; turions formed, hard ... P. crispus

7. Stem terete; leaf blade margins entire; fruit beak 1 mm or less; turions rarely formed [8]

8. Submersed leaves clasping stem; floating leaves absent ... P. perfoliatus

8. Submersed leaves petiolate or sessile (not clasping); floating leaves present [9]

9. Stem conspicuously rusty- or black-spotted; floating leaf blade rounded to cordate at base; submersed leaf blades crispate, mostly arcuate ... P. pulcher

9. Stems without spots; floating leaf blade cuneate, tapering to petiole, rounded; submersed leaf blades flat or crispate, mostly not arcuate or occasionally arcuate [10]

10. Submersed leaves sessile or petioles to 4 cm long; larger submersed leaves acuminate at apex; fruits grayish green to olive-green ... *P. illinoensis*

10. Submersed leaves with petioles 0.5-13 cm long; larger submersed leaves acute at apex but without sharp awl-like tip; fruits red to reddish brown ... *P. nodosus*

\**Potamogeton crispus* L.— {AFP}

*Potamogeton diversifolius* Raf.— {AFP}

*Potamogeton epihydrus* Raf.— {AFP}

*Potamogeton floridanus* Small— {AFP} Endemic. State Endangered.

*Potamogeton foliosus* Raf.— {AFP}

*Potamogeton illinoensis* Morong— {AFP}

*Potamogeton nodosus* Poir.— {AFP}

*Potamogeton perfoliatus* L.— {AFP}

*Potamogeton pulcher* Tuck.— {AFP}

*Potamogeton pusillus* L.— {AFP}

*Stuckenia* {AFP}

*Stuckenia pectinata* (L.) Börner— {AFP}

*Zannichellia* {AFP}

*Zannichellia palustris* L.— {AFP}

## DIOSCORALES

BURMANNIACEAE {AFP}

1. Leaves and stems purplish to pale brownish or whitish; inflorescence racemose or flower solitary; pedicel 2-10 mm long; flower terete or subterete; ovary 1-locular; placentation parietal ... *A. aphylla*

1. Leaves and stems green; inflorescence of dense cymes or flower solitary; pedicel 0-1 mm long; flower 3-angled or 3-winged; ovary 3-locular; placentation axile ... *Burmannia*

*Apteria* {AFP}

*Apteria aphylla* (Nutt.) Barnhart ex Small— {AFP}

*Burmannia* {AFP}

1. Inflorescences usually appearing capitate; flowers 3-angled, wings if present <1/5 as wide as flower; perianth whitish; the inner perianth lobes usually less than 2/3 length of outer lobes ... *B. capitata*

1. Inflorescences loosely flowered cymes or flowers solitary; flowers distinctly 3-winged, wings >1/3 as wide as flower; perianth blue, violet, yellow, or greenish; inner perianth lobes 2/3 to nearly equaling length of outer lobes [2]

2. Basal leaves absent; flowers bluish with perianth lobes paler, often cream-colored; ... *B. biflora*

2. Basal leaves present; flowers yellow or greenish ... *B. flava*

*Burmannia biflora* L.— {AFP}

*Burmannia capitata* (J.F.Gmel.) Mart.— {AFP}

*Burmannia flava* Mart.— {AFP} State Endangered.

## DIOSCOREACEAE {AFP}

### Dioscorea {AFP}

1. Leaf blade upper surface variegated whitish along the midrib, the lower surface pale green to purplish ... *D. dodecaneura*
1. Leaf blade upper surface not variegated, the lower surface green or glaucous [2]
2. Plants rhizomatous; bulbils never produced in leaf axils; leaf margins entire or repand; petiole base never clasping; inflorescences regularly produced [3]
2. Plants tuberous; bulbils produced in leaf axils; leaf margins lobed or entire; petiole base sometimes clasping; inflorescences absent or infrequent, or often only one sex present [4]
3. Rhizomes yellow, nodes articulate, each bearing 1 dark, contrasting, somewhat deltate scale leaf or the dark vertical scar remaining once leaf falls; staminate inflorescences (1)2–5 in leaf axils; perianth of both staminate and pistillate flowers yellow to orangish yellow; stamens inwardly curved; thecae connate ... *D. floridana*
3. Rhizomes brownish, nodes not articulate; staminate inflorescences solitary in leaf axils; perianth of both staminate and pistillate flowers greenish white; stamens erect; thecae distinct, widely spreading ... *D. villosa*
4. Leaf blade unlobed [5]
4. Leaf blades lobed, with a sinus, sometimes obscure [6]
5. Stems broadly winged, 4-angular; leaves often opposite or subopposite, the blade base margin somewhat straight and sagittate and angled; seeds winged all around ... *D. alata*
5. Stems terete, usually unwinged; leaves alternate throughout, the blade base mostly evenly rounded; seeds unilaterally winged ... *D. bulbifera*
6. Leaf blade hastate-cordate, margins 3-lobed, lobes rounded, blade apex acute or mucronate; petiole base not clasping ... *D. polystachya*
6. Leaf blade reniform, margins irregularly 3-5-lobed, lobes often elongate or acuminate, blade apex conspicuously caudate ... *D. sansibarensis*

\**Dioscorea alata* L.— {AFP}

\**Dioscorea bulbifera* L.— {AFP}

\**Dioscorea dodecaneura* Vell.— {AFP}

*Dioscorea floridana* Bartlett— {AFP}

^ *Dioscorea polystachya* Turcz.— {AFP}

^ *Dioscorea sansibarensis* Pax— {AFP}

*Dioscorea villosa* L.— {AFP}

## NARTHECIACEAE {AFP}

1. Leaves nearly all basal, cauline ones reduced to scales; inflorescence a raceme or spike, glabrate ... *Aletris*
1. Leaves basal and cauline; inflorescence a panicle, tomentose ... *Lophiola aurea*

### *Aletris* {AFP}

1. Perianth short-cylindric to campanulate, 1-2 times as long as wide, the lobes incurved to erect at anthesis [2]
1. Perianth narrowly cylindric, 2-3 times as long as wide, the lobes spreading to reflexed at anthesis [4]
2. Perianth golden yellow, campanulate, 6-7 mm long; fruit beak gradually narrowed distally ... *A. aurea*

2. Perianth white to pale yellow, the lobes sometimes faintly yellowish or brownish, campanulate or obovoid, 7-11 mm long; fruit beak abruptly narrowed distally [3]
3. Perianth broadly cylindric to campanulate, white to creamy white ... *A. obovata*
3. Perianth narrowly cylindric, pale yellowish ... *A. ×tottenii*
4. Leaves dull grayish green, 6-10 mm wide; perianth 6-8 mm long, white; fruit beak gradually tapering from body to tip ... *A. bracteata*
4. Leaves yellowish green to green, 5-26 mm wide; perianth 7-12 mm long, white or yellow; fruit beak gradually or abruptly narrowed distally [5]
5. Perianth white, 7-10 mm long; fruit beak abruptly narrowed distally ... *A. farinosa*
5. Perianth yellow, rarely white, 9-12 mm long; fruit beak gradually narrowed distally ... *A. lutea*

***Aletris aurea*** Walter— {AFP}

***Aletris bracteata*** Northr.— {AFP} State Endangered.

***Aletris farinosa*** L.— {AFP}

***Aletris lutea*** Small— {AFP}

***Aletris obovata*** Nash ex Small— {AFP}

***Aletris ×tottenii*** E.T.Browne— {AFP}

**Lophiola** {AFP}

***Lophiola aurea*** Ker Gawl.— {AFP}

## PANDANALES

**PANDANACEAE** {AFP}

**Pandanus** {AFP}

1. Leaf margins with reddish prickles ... *P. utilis*

1. Leaf margins entire or whitish prickles [2]

2. Leaf margins with stout whitish prickles (2)4-8 mm long ... *P. odorifer*

2. Leaf margins entire or with short, weak greenish to whitish prickles 1-4 mm long ... *P. tectorius*

^ *Pandanus odorifer* (Forssk.) Kuntze— {AFP}

^ *Pandanus tectorius* Parkinson—

^ *Pandanus utilis* Bory—

**STEMONACEAE** {AFP}

**Croomia** {AFP}

***Croomia pauciflora*** (Nutt.) Torr.— {AFP} State Endangered.

## ASPARAGALES

**ORCHIDACEAE** {AFP}

subf. Cyripedioideae: ^ *Paphiopedilum*

subf. Epidendroideae

Epidendreae, Bletinae: *Bletia*, *Basiphyllaea*, *Hexalectris*

Epidendreae, Calypsoinae: *Corallorhiza*, *Govenia*, *Tipularia*

Epidendreae, Laeliinae: ^ *Brassavola*, ^ *Cattleya*, *Encyclia*, *Epidendrum*, *Laelia*,

^ *Myrmecophila*, *Prosthechea*, *Tetramicra*

Epidendreae, Pleurothallidinae: *Lepanthopsis*, *Stelis*  
 Arethuseae, Arethusinae: *Calopogon*  
 Arethuseae, Coelogyninae: *Bletilla*  
 Neottieae: *Neottia*  
 Malaxideae, Malaxidinae: *Liparis*, *Malaxis*  
 Tropidieae: *Tropidia*  
 Collabieae: \**Phaius*, ^*Spathoglottis*  
 Triphoreae, Triphorinae: *Triphora*  
 Dendrobieae: *Bulbophyllum*, ^*Dendrobium*  
 subf. Orchidoideae  
 Orchideae Orchidinae: *Habenaria*, *Platanthera*  
 Cranichideae, Spiranthinae: *Beloglottis*, *Cyclopogon*, *Eltroplectris*, *Mesadenus*, *Pelexia*,  
*Sacoila*, *Spiranthes*  
 Cranichideae, Goodyerinae: *Goodyera*, *Platythelys*, \**Zeuxine*  
 Cranichideae, Cranichidinae: *Cranichis*, *Ponthieva*, *Prescottia*  
 subf. Vandoideae  
 tribe Cymbideae, subtr. Catasetinae: *Galeandra*  
 tribe Cymbideae, subtr. Cymbidiinae: ^*Cymbidium*  
 tribe Cymbideae Cyrtopodiinae: *Cyrtopodium*  
 tribe Cymbideae Eulophiinae: *Eulophia*, \**Oeceoclades*, *Orthochilus*  
 tribe Cymbideae Maxillariinae: *Maxillaria*  
 tribe Cymbideae Oncidiinae: *Brassia*, *Ionopsis*, *Macradenia*, *Oncidium*, *Tolumnia*  
*Trichocentrum*  
 Vandeae, Polystachyinae: *Polystachya*  
 Vandeae, Angraecinae: *Campylocentrum*, *Dendrophylax*  
 Vandeae, Aeridinae: ^*Phalaenopsis*, ^*Vanda*  
 subf. Vanilloideae  
 tribe Pogonieae: *Cleistesiopsis*, *Isotria*, *Pogonia*  
 tribe Vanilleae: *Vanilla*

1. Lip a large and inflated pouch or sac ... Paphiopedilum
1. Lip not expanded into a pouch or sac [2]
2. Plants elongate vines ... Vanilla
2. Plants caespitose, rhizomatous, or stoloniferous [3]
3. Plants epiphytic, sometimes in detritus at base of trunks [4]
3. Plants terrestrial, sometimes on downed, decaying logs [7]
4. Plants leafless, with photosynthetic roots ... Key A
4. Plants with leaves and roots [5]
5. Stems of elongate pseudobulbs with multiple leaf scars throughout or near the base ... Key B
5. Stems of short pseudobulbs with leaf scars confined to the tip, or without pseudobulbs [6]
6. Inflorescence terminal, subtended by leaves ... Key C
6. Inflorescence lateral or basal, not terminating the stem, sometimes subtended by leaves but with some leaves distal to the base of the peduncle ... Key D
7. Leaves plicate with several prominent longitudinal veins ... Key E
7. Leaves with only the midrib prominent, secondary veins not prominent, or leaves absent [8]
8. Leaves absent (sometimes only present when not flowering) ... Key F
8. Leaves present [9]
9. Flowers with an elongate protruding spur at base of lip, spur free from ovary ... Key G
9. Flowers without spur at base of lip or spur short and adnate to ovary [10]

10. Leaves at one mid-cauline to subterminal node; inflorescence of 1(-3, rarely) flowers ... Key H  
10. Leaves basal or at more than 1 node; inflorescence of 2-100 flowers ... Key I

#### Key A

1. Roots strongly flattened, uniformly grayish to green; flowers strongly 2-ranked ...  
Campylocentrum  
1. Roots flattened and grayish to green with light speckles or striations, or roots subterete and slender; flowers not 2-ranked ... Dendrophylax

#### Key B

1. Inflorescence basal ... Cyrtopodium  
1. Inflorescence terminal [2]  
2. Leaves mostly ascending; inflorescence of 1-3 flowers, the peduncle usually level with or below the leaf tips ... Cattleya  
2. Leaves mostly spreading to laxly recurving; inflorescence mostly of 4-50 flowers, the peduncle exerted beyond the leaves [3]  
3. Pseudobulb slenderly terete, not hollow; sepals and petals often plane ... Dendrobium  
3. Pseudobulb thickly cylindric, hollow; sepals and petals often strongly undulate ... Myrmecophila

#### Key C

1. Stem base a distinctly differentiated, persistent pseudobulb, the leaf blade arising from tip of a pseudobulb [2]  
1. Stem base terete, sometimes with persistent leaf sheaths but not thickened into a persistent pseudobulb [4]  
2. Pseudobulb terete or subglobose; leaf blade narrowly lanceolate, linear-lanceolate, to linear-oblong ... Encyclia  
2. Pseudobulb compressed; leaf blade broadly elliptic, lanceolate, to narrowly lanceolate [3]  
3. Pseudobulb orbicular, ovate, to elliptic; sepals and petals white to pink ... Laelia  
3. Pseudobulb narrowly oblong, narrowly ovoid, or orbicular; sepals and petals purplish, brownish, greenish, to yellowish, sometimes with dark markings ... Prosthechea  
4. Leaves 2-8 along an elongate stem with 3-12 nodes ... Epidendrum  
4. Leaves solitary (sometimes with 3 or more nodes) or few and mostly densely imbricate and basal [5]  
5. Leaf blades linear to narrowly lanceolate or oblanceolate [6]  
5. Leaf blades broadly elliptic to orbicular [8]  
6. Leaf blades 10-20 mm wide; lip, petals, and sepals relatively small, generally of similar color and size ... Polystachya  
6. Leaf blades 3-10 mm wide; lip white, with an expanded ovate blade much wider than the linear-lanceolate, mostly greenish to yellowish petals and sepals  
7. Leaves 1(2); lip white, ovate, the sepals and petals linear-lanceolate, mostly greenish to pale yellowish ... Brassavola  
7. Leaves 2-5; lip pale pink to pink, with darker stripes alternating with pale or whitish stripes, 3-lobed, the sepals and petals oblong-lanceolate, mostly brownish green ... Tetramicra  
8. Leaf blades 0.5-4 cm long (rarely longer); leaf sheaths sometimes ciliate ... Lepanthopsis  
8. Leaf blades 4-20 cm long (shorter in some species outside Florida); leaf sheaths glabrous [9]  
9. Petiole unapparent; sepals glabrous; sepals and petals 10-30 mm long ... Phalaenopsis  
9. Petiole somewhat distinct, 2-3 cm long; sepals pubescent; sepals and petals 4-8 mm long ...  
Stelis

#### Key D

1. Stem base a distinctly differentiated, persistent pseudobulb, the leaf blade arising from tip of a pseudobulb [2]
1. Stem base terete, sometimes with persistent leaf sheaths but not thickened into a persistent pseudobulb or this scarcely developed [6]
2. Leaf blade to 16 cm long; inflorescence rachis, fleshy-thickened ... *Bulbophyllum*
2. Leaf blade 12-60 cm long; inflorescence rachis not fleshy [3]
3. Inflorescence sessile or subsessile ... *Maxillaria*
3. Inflorescence elongate, pedunculate, exserted [4]
4. Sepals and petals linear-lanceolate to long-caudate ... *Brassia*
4. Sepals and petals narrowly lanceolate, elliptic, or obovate [5]
5. Sepals and petals narrowly lanceolate, brownish, reddish, yellowish, to greenish ... *Macradenia*
5. Sepals and petals yellow with brownish or purplish markings ... *Oncidium*
6. Leaf blades 2-4 times as long as wide, generally elliptic ... *Phalaenopsis*
6. Leaf blades 4-70 times as long as wide [7]
7. Leaf blades 4-10 cm wide ... *Trichocentrum*
7. Leaf blades 0.2-3 cm wide [8]
8. Leaf blades lax, the upper and lower surfaces generally expanded (sometimes laterally flattened only at the very base), not equitant or scarcely so [9]
8. Leaf blades stiff, terete to laterally flattened (at least in the proximal half), often somewhat equitant, or the upper and lower surfaces generally expanded [10]
9. Plants in dense tufts of numerous stems; leaves linear to linear-oblong; sepals and petals whitish with reddish lines ... *Cymbidium*
9. Plants of few stems; leaves narrowly lanceolate; sepals and petals pale greenish to yellowish ... *Maxillaria*
10. Leaf blades upper and lower surfaces generally expanded (sometimes laterally flattened only at the very base), not equitant or scarcely so ... *Lonopsis*
10. Leaf blades terete to laterally flattened (at least in the proximal half), often equitant [11]
11. Leaves usually few (2-7) and basal; lip larger than the reduced petals and sepals ... *Tolumnia*
11. Leaves usually numerous (6-30) along an elongate stem; lip subequal to much smaller than the showy petals and sepals ... *Vanda*

#### Key E

1. Leaf blades 2-4(4.5) times as long as wide, 5-15(20) cm long, ovate to ovate-lanceolate [2]
1. Leaf blades 3-60 times as long as wide, 20-100 cm long, lance-elliptic, ovate-lanceolate, narrowly lanceolate, to linear-lanceolate [3]
2. Leaves generally basal, the blade apex rounded to abruptly short-acute; inflorescence spicate or racemose ... *Liparis*
2. Leaves cauline, distal, the blade apex long-acute to attenuate; inflorescence usually paniculate ... *Tropidia*
3. Persistent leaf sheaths forming a conspicuous zigzag pattern where they overlap; inflorescence paniculate, branches spreading to ascending-spreading; flowers yellow ... *Cyrtopodium*
3. Leaf sheaths withering or not forming a conspicuous zigzag pattern; inflorescence racemose, spicate, or paniculate with ascending to appressed branches; flowers not yellow [4]
4. Leaf blades ovate-lanceolate; lip usually deeply bilobed ... *Govenia*
4. Leaf blades lance-elliptic, narrowly lanceolate, to linear-lanceolate; lip unlobed to shallowly lobed [5]



- 5. Leaf blades 5-20 mm wide; inflorescence bracts 14-35 mm long, subequal to longer than the flowers; sepals and petals tightly appressed and hovering over the lip ... *Orthochilus*
- 5. Leaf blades 5-90 mm wide; inflorescence bracts 2-45 mm long, mostly shorter than the flowers; sepals and petals spreading [6]
- 6. Inflorescence terminal, subtended by leaves ... *Bletilla*
- 6. Inflorescence lateral or basal, not terminating the stem, sometimes subtended by leaves but with some leaves distal to the base of the peduncle [7]
- 7. Leaf blades 5-30 mm wide; petals, sepals, and lip usually pink, the lip with white or yellow lamellae or crests ... *Bletia*
- 7. Leaf blades (25)30-90 mm wide; petals, sepals, and lip pink, or reddish, purplish, without lamellae or crests [8]
- 8. Leaf blades lance-elliptic; inflorescence bracts appressed, spathe-like; lip tubular with inrolled margins ... *Phaius*
- 8. Leaf blades narrowly lanceolate; inflorescence bracts spreading, not spathe-like; lip not tubular or margins only slightly upturned [9]
- 9. Sepals all pointed upwards, the lateral ones geniculate and upturned, and the petals hovering over the lip, sepals and petals greenish, yellow, to brownish, the lip mostly oblong and not flared, the lip pink-red to purplish red ... *Eulophia*
- 9. Sepals radiating, petals spreading, sepals and petals white to pink, the lip clawed with a flared apex, the lip pink ... *Spathoglottis*

#### Key F

- 1. Plants 10-30 cm tall; flowers pedicellate ... *Triphora*
- 1. Plants 20-100 cm tall; flowers sessile or pedicellate [2]
- 2. Flowers uniformly pink to red, rarely greenish or brownish ... *Sacoila*
- 2. Flowers white, green, brownish, or mixed with pink and red colors [3]
- 3. Flowers white, densely arranged, often secund ... *Spiranthes*
- 3. Flowers green, brownish, or partly white [4]
- 4. Sepals and petals 3-10 mm long [5]
- 4. Sepals and petals 10-30 mm long [6]
- 5. Rhizomes creeping, slender, 2-5 mm wide, with short, thick lateral roots; sepals and petals hooded over the lip; lip white with pink spots; leaf blades absent ... *Corallorhiza*
- 5. Rhizomes creeping, cormose, 7-15 mm wide, with elongate slender roots; sepals and petals spreading; lip greenish; leaf blade ovate, present fall-early spring, withered or absent during spring flowering ... *Tipularia*
- 6. Stem base pseudobulbous, with fleshy roots; sepals and petals light green; leaf blades linear-lanceolate, withered or absent during flowering ... *Galeandra*
- 6. Rhizomes creeping, scaly; sepals and petals whitish or yellowish with dark reddish or purplish stripes; leaf blades absent ... *Hexalectris*

#### Key G

- 1. Petiole 5-20 cm long ... *Eltroplectris*
- 1. Petiole absent or to 1 cm long [2]
- 2. Leaves basal and cauline, or if basal then broadly elliptic to lance-elliptic ... *Habenaria*
- 2. Leaves basal, generally narrowly lanceolate ... *Platanthera*

#### Key H

- 1. Leaves whorled, (2-)5(-6); flowers 1 (rarely 2) ... *Isotria*
- 1. Leaves solitary [2]

- 2. Lip margin crenulate; sepals brownish to greenish, linear-lanceolate, 24–65 mm long ... Cleistesioipsis
- 2. Lip margin laciniate; sepals pink or rarely white, oblong to narrowly lanceolate, 14–23 mm long ... Pogonia

#### Key I

- 1. Leaves 2(3), opposite, subopposite, or whorled at terminal node below inflorescence ... Neottia
- 1. Leaves solitary or several, alternate or basal [2]
- 2. Leaf blade upper side with strongly whitened reticulate veins ... Goodyera
- 2. Leaf blade reticulate veins obscure or greenish [3]
- 3. Leaf blade strongly mottled light and dark green ... Oeceoclades
- 3. Leaf blade not mottled, sometimes appearing so due to contrasting veins [4]
- 4. Plants 5-30 cm tall; leaves several along the stem, the inflorescence ca. 1/3-1/2 of the plant height [5]
- 4. Plants 10-100 cm tall; leaves primarily basal, the inflorescence constituting the majority of the plant height [7]
- 5. Plants arising from corms or tuberous roots; leaves 0.5-2 cm long ... Triphora
- 5. Plant with few, slender, fleshy roots; leaves 1-9 cm long [6]
- 6. Leaf blade ovate to ovate-lanceolate; perianth white to greenish ... Platythelys
- 6. Leaf blade narrowly lanceolate; perianth white ... Zeuxine
- 7. Leaves 20-100 cm long, numerous at the plant base; inflorescence paniculate with spreading branches ... Oncidium
- 7. Leaves solitary, few, to numerous; inflorescence racemose, or if branched, then the branches ascending to erect [7]
- 8. Sepals and petals 9-25 mm long, 4-10 mm wide, spreading, pink or white; leaves auriculate, deciduous ... Calopogon
- 8. Sepals and petals 2-13 mm long, 1-4 mm wide, appressed to spreading, colors various; leaves usually not articulate [9]
- 9. Plants arising from corms or pseudobulbs [10]
- 9. Plants arising from slender fibrous or fleshy roots [11]
- 10. Leaf blade linear-lanceolate; flowers 8-15 mm long ... Eulophia
- 10. Leaf blade broadly ovate; flowers 1-4 mm long ... Malaxis
- 11. Flowers not resupinate (lip at top) [12]
- 11. Flowers resupinate (lip at bottom) [14]
- 12. Column 0.3 mm; lip 1–2 mm; dorsal sepal 1–2.2 mm, reflexed ... Prescottia
- 12. Column 1.5–5 mm; lip 2–7 mm; dorsal sepal 3–7 mm, not reflexed [13]
- 13. Petals linear; lip ovate-subquadrangular, shallowly concave, white with green or pale yellow spots; column prominently winged, 1.5–2 mm ... Cranichis
- 13. Petals obliquely triangular; lip obovate to suborbiculate, deeply concave, white with 1–2 dark green spots; column slightly winged, 2.5–5 mm ... Ponthieva
- 14. Flowers uniformly pink to red, rarely greenish or brownish ... Sacoila
- 14. Flowers white, green, brownish, or mixed with pink and red colors [14]
- 15. Petioles 10–17 cm long, pinkish, reddish, or brownish ... Pelexia
- 15. Petioles 0-10 cm or less, usually green [16]
- 16. Flowers white, the column and lip pink at the tip ... Basiphyllaea
- 16. Flowers dull brownish, dull greenish brown, or green, the lip white, or mostly uniformly white without pink [17]
- 17. Flowers dull brownish, dull greenish brown, or green, the lip white; leaf blade ovate to ovate-lanceolate [18]

17. Flowers mostly uniformly white, rarely spotted; leaf blade ovate, ovate-lanceolate, to linear-lanceolate [19]

18. Flowers generally greenish or greenish brown; petal and sepal apices not recurved; lip oblong, apex slightly flared or pandurate to oblong-ovate with apex usually fan-shaped, 5–7 mm long; column 3.5–4.5 mm long ... Cyclopogon

18. Flowers dull brownish or reddish; petal and sepal apices spreading to recurved; lip elliptic to ovate-lanceolate, apex obtuse-rounded, 3.5–6 mm long; column 2–2.5 mm long ... Mesadenus

19. Lip white with central green stripe, 4–5 mm long, sagittate and 3-lobed, margins finely denticulate ... Beloglottis

19. Lip white, centrally yellow to yellowish or greenish white, 5–7 mm, ovate to ovate-oblong and unlobed, margins erose-crisped ... Spiranthes

### Basiphyllaea {AFP}

**Basiphyllaea corallicola** (Small)Ames— {AFP} State Endangered.

### Beloglottis {AFP}

**Beloglottis costaricensis** (Rchb.f.) Schltr.— {AFP} State Endangered.

### Bletia {AFP}

1. Flower buds obovate, distinctly swollen at the apex and narrowed at the base; pedicellate ovary (2)3–3.5 cm long; sepals 30–40 mm long; upper 2 petals spreading to slightly arched over the lip ... B. patula

1. Flower buds roughly ovate to elliptic, mostly narrowest at the apex and widest near the middle or base; pedicellate ovary 0.9–2.1 cm long; sepals (12)15–26 mm long; upper 2 petals hooded directly over the lip [2]

2. Pedicellate ovary 1.8–2.1 cm long; deep pink-purple; lip crests or lamellae nearly white to subtly yellowish white, usually 5 extending into the lip midlobe and 2 shorter peripheral ones that terminate before the midlobe; column 1–2 mm long, lacking a foot ... B. florida

2. Pedicellate ovary 0.8–1.8 cm long; perianth light pink to deep pink; lip crests or lamellae distinctly yellowish, usually 5 extending into the lip midlobe and lacking shorter ones; column 8–12 mm long, the base with a ~2 mm long foot ... B. purpurea

\***Bletia florida** (Salisb.)R.Br.— {AFP}

**Bletia patula** Graham— {AFP}

**Bletia purpurea** (Lam.)DC.— {AFP} State Threatened.

### Bletilla {AFP}

\***Bletilla striata** (Thunb.) Rchb.f.— {AFP}

### Brassia {AFP}

**Brassia caudata** (L.)Lindl.— {AFP} State Endangered.

### Bulbophyllum {AFP}

**Bulbophyllum pinelianum** (A.Rich.)Ormerod— {AFP} The oft-used name *Bulbophyllum pachyrachis* is a later synonym (Bogarín et al. 2014; Ormerod 2016). State Endangered.

**Calopogon** {AFP} The flower consists of 2 lateral ascending sepals and 1 downward-pointing sepal, 2 lateral descending petals and 1 erect lip with numerous bristles mimicking anthers, the column downward-pointing over the sepal.

1. Corm usually forked; inflorescence rachis and ovary purple; flowers never white, strongly fragrant, opening nearly simultaneously; 2 lateral petals obovate, widest above the middle; flowering late Feb-early Jul (esp. Mar-May) ... *C. multiflorus*

1. Corm usually not forked; inflorescence rachis and ovary green to purple; flowers sometimes white, scentless to mildly fragrant, opening sequentially or nearly simultaneously; 2 lateral petals widest near or below the middle; flowering in various months [2]

2. Upper leaf tightly appressed to somewhat ascending; flowers never white, crowded on the rachis, <1 cm apart, opening nearly simultaneously, not fragrant; flowering Dec-early May (esp. Mar-Apr) ... *C. barbatus*

2. Upper leaf ascending to divergent; flowers sometimes white, well-spaced along the rachis, >1 cm apart, opening sequentially, mildly fragrant; flowering in various months [3]

3. Floral bracts 1.5-4.5 mm long; lateral sepals 10-15 mm long, often strongly falcate and curved upwards; lateral petals 9-18 mm long, lanceolate to weakly pandurate, falcate; lip 9-13 mm long, 5-11 mm wide, middle lobe often broadly flared and wing-like (sometimes knobby); flowering late Mar-late Jul (esp. Apr-May) ... *C. pallidus*

3. Floral bracts 3-30 mm long; lateral sepals 13-26 mm long, spreading to slightly falcate and curved upwards; lateral petals 13-28 mm long, obpandurate, slightly falcate to straight; lip 11-23 mm long, 5.5-21 mm wide, middle lobe often abruptly flared and knobby at the apex with a narrow claw; flowering in various months [4]

4. Leaf blade strongly curled transversely; dilated distal portion of middle lip lobe narrowly to widely expanded, whitened; wet, alkaline savannas; flowering Jan-May (esp. Mar-Apr) ... *C. tuberosus* var. *simpsonii*

4. Leaf blade slightly curled transversely; dilated distal portion of middle lip lobe broadly expanded and not whitened except in entirely white flowers; acidic wetlands; flowering Mar-early Jun (esp. Apr-May) ... *C. tuberosus* var. *tuberosus*

***Calopogon barbatus*** (Walter)Ames— {AFP}

***Calopogon multiflorus*** Lindl.— {AFP} State Threatened.

***Calopogon pallidus*** Chapm.— {AFP}

***Calopogon tuberosus*** (L.)Britton et al. var. *simpsonii* (Small)Magrath— {AFP}

***Calopogon tuberosus*** (L.)Britton et al. var. *tuberosus*— {AFP}

Hybrid taxa

*C. floridensis*, nom. inval. (*multiflorus* × *pallidus*)

*C. fowleri*, nom. inval. (*barbatus* × *pallidus*)

*C. goethensis*, nom. inval. (*multiflorus* × *tuberosus*)

*C. obscurus*, nom. inval. (*barbatus* × *multiflorus*)

*C. simulans*, nom. inval. (*barbatus* × *tuberosus*)

*C. vulgaris*, nom. inval. (*pallidus* × *tuberosus*)

***Campylocentrum*** {AFP}

***Campylocentrum pachyrrhizum*** (Rchb.f.)Rolfe— {AFP} State Endangered.

***Cleistesiopsis*** {AFP}

1. Column 13-19 mm long; lip 21-33(38) mm long ... *C. divaricata*  
1. Column 21-25(29) mm long; lip (26)34-56 mm long ... *C. oricamporum*

***Cleistesiospis divaricata*** (L.)Pansarin & F. Barros— {AFP} State Endangered.

***Cleistesiospis oricamporum*** P.M.Br.— {AFP} State Endangered.

### **Corallorhiza** {AFP}

1. Sepals and petals 2.5-4.5 mm long, mostly with 1 or 2 veins; fruit 5.5-8 mm long; flowering Aug–Oct ... *C. odontorhiza*

1. Sepals and petals 4.5-10 mm long, mostly with 3 veins; fruit 7-14 mm long; flowering Dec-Mar ... *C. wisteriana*

### **Cranichis** {AFP}

***Cranichis muscosa*** Sw.— {AFP} State Endangered.

### **Cyclopogon** {AFP}

1. Petioles 1-3.5(5) cm long, spreading to ascending; leaf blade underside grayish to purplish; lateral sepals becoming spreading-recurved; petal midvein and margins dark brownish to reddish; lip apex white and relatively firm ... *C. cranichoides*

1. Petiole 2.5-5(10) cm long, ascending to erect; leaf blade underside green; lateral sepals appressed to somewhat ascending; petal midvein and margins of petals pale greenish to pale brownish; lip apex becoming hyaline and delicate ... *C. elatus*

***Cyclopogon cranichoides*** (Griseb.)Schltr.— {AFP}

***Cyclopogon elatus*** (Sw.)Schltr.— {AFP} State Endangered.

### **Cyrtopodium** {AFP}

1. Terrestrial; sepals green to yellow and mildly curvaceous or undulate, lip yellow with a few reddish spots near the base only and not verruculose-tuberculate ... *C. flavum*

1. Primarily epiphytic; sepals and lip usually with conspicuous dark reddish or purplish splotches throughout, rarely without, sepals strongly curled or undulate, lip verruculose-tuberculate ... *C. punctatum*

\****Cyrtopodium flavum*** Link & Otto ex Rchb.— {AFP}

***Cyrtopodium punctatum*** (L.)Lindl.— {AFP} State Endangered.

### **Dendrophylax** {AFP}

1. Roots 1.5-3(5) mm wide; sepals and petals 20-70 mm long; fruit 60-100 mm long ... *D. lindenii*

1. Roots 0.3-0.9 mm wide; sepals and petals 2-4 mm long; fruit 4-6 mm long ... *D. porrectus*

***Dendrophylax lindenii*** (Lindl.)Benth. ex Rolfe— {AFP} State Endangered.

***Dendrophylax porrectus*** (Rchb.f.)Carlsward & Whitten— {AFP} State Threatened.

### **Eltroplectris** {AFP}

***Eltroplectris calcarata*** (Sw.)Garay & H.R.Sweet— {AFP} State Endangered.

### **Encyclia** {AFP}

1. Sepals, petals, and lip mostly uniformly yellow to brownish yellow, rarely the lip with faint purplish markings; lip with down-curved margins ... *E. rufa*

1. Sepals and petals brownish yellow, brownish green, to brownish purple, lip white with purple markings; lip plane or the margins only slightly lax ... *E. tampensis*

\**Encyclia rufa* (Lindl.) Britton & Millsp.— {AFP}

*Encyclia tampensis* (Lindl.) Small— {AFP} Commercially Exploited.

### **Epidendrum** {AFP}

1. Inflorescence peduncle 2-50 cm long, long-exserted [2]

1. Inflorescence peduncle 0.5-3 cm long, shorter than the leaves to slightly exceeding the leaves [4]

2. Sepals and petals orange-red; lip lobe margins fimbriate; leaves 5-13, evenly distributed along the stem ... *E. radicans*

2. Sepals and petals green, yellow, to white; lip lobe margins entire; leaves clustered at the stem apex or evenly distributed along the stem [3]

3. Leaves 3-13, evenly distributed along the stem; peduncle 9-48 cm long; sepals 1.5-2.2 times as long as wide ... *E. amphistomum*

3. Leaves 2-3, clustered at the stem apex subtending the peduncle; peduncle 2-10 cm long; sepals 3-6 times as long as wide ... *E. conopseum*

4. Stems branching; leaf blades nearly all perpendicular to the stem [5]

4. Stems unbranched; leaf blades mostly ascending to ascending-recurved [6]

5. Plants 50-160 cm long; sepals and petals 12-21 mm long, 2.5-6 mm wide ... *E. acunae*

5. Plants 10-30 cm long; sepals and petals 3-6 mm long, 0.5-2 mm wide ... *E. strobiliferum*

6. Rhizome creeping; ovary 10-11 mm long, usually subequal to shorter than the subtending bracts; fruit 10-12 mm long ... *E. rigidum*

6. Cespitose; ovary 20-50 mm long, exserted beyond the subtending bracts; fruit 16-25 mm long [7]

7. Plant to 26 cm long; leaf blades 2-7 cm long; sepals and petals oblong, 11-15 mm long; lip with a broad obscure middle lobe ... *E. floridense*

7. Plant to 100 cm long; leaf blades 6-15 cm long; sepals and petals linear-lanceolate, 25-60 mm long; lip with an elongate acuminate middle lobe ... *E. nocturnum*

*Epidendrum anceps* Jacq.— {AFP} State Endangered.

*Epidendrum blancheanum* Urb.— {AFP} State Endangered.

*Epidendrum conopseum* R.Br.— {AFP} Commercially Exploited.

*Epidendrum floridense* Hágsater— {AFP} State Endangered.

*Epidendrum nocturnum* Jacq.— {AFP} State Endangered.

^ *Epidendrum radicans* Pav. ex Lindl.— {AFP}

*Epidendrum rigidum* Jacq.— {AFP} State Endangered.

*Epidendrum strobiliferum* Rchb.f.— {AFP} State Endangered.

### **Eulophia** {AFP}

1. Leaves 20-120 cm long, 3-11 cm wide ... *E. alta*

1. Leaves 10-30 cm long, 0.5-2 cm wide [2]

2. Lip green marginally, white medially with darker purplish lines ... *E. andamanensis*

2. Lip white marginally, pink medially with numerous erect fimbriae ... *E. graminea*

***Eulophia alta*** (L.) Fawc. & Rendle— {AFP}

^ *Eulophia andamanensis* Rchb.f.— {AFP}

\* ***Eulophia graminea*** Lindl.— {AFP}

**Galeandra** {AFP}

***Galeandra bicarinata*** G.A.Romero & P.M.Br.— {AFP} State Endangered.

**Goodyera** {AFP}

***Goodyera pubescens*** (Willd.) R.Br.— {AFP} State Endangered.

**Govenia** {AFP}

***Govenia floridana*** P.M.Br.— {AFP} Miami-Dade Co. (endemic). Extirpated. Questionable if actually an endemic species, rather than some other tropical species. State Endangered.

**Habenaria** {AFP}

1. Leaves basal, abruptly reduced to bracts ... *H. distans*

1. Leaves basal and cauline, gradually reduced in size below the inflorescence [2]

2. Petals and lips unlobed to very obscurely lobed ... *H. floribunda*

2. Petals and lips with elongate linear lobes [3]

3. Leaf blade 4-9 times as long as wide, with obscure cross-veins or only some conspicuous; spur 0.8-1.4 cm long; of hydric habitats ... *H. repens*

3. Leaf blade 1.7-4 times as long as wide, with conspicuous cross-veins throughout; spur 4-18 cm long; of mesic habitats [4]

4. Petal distal segment 20-24 mm, proximal segment 8-11 mm long; spur 9-18 cm long; of shaded hammocks ... *H. macroceratitis*

4. Petal distal segment 10-18 mm long, proximal segment 6-9 mm long; spur 4-10 cm long; of open areas ... *H. quinqueseta*

***Habenaria distans*** Griseb.— {AFP} State Endangered.

***Habenaria floribunda*** Lindl.— {AFP}

***Habenaria quinqueseta*** (Michx.) Eaton— {AFP}

***Habenaria repens*** Nutt.— {AFP}

**Hexalectris** {AFP}

***Hexalectris spicata*** (Walter) Barnhart— {AFP} State Endangered.

**Ionopsis** {AFP}

***Ionopsis utricularioides*** (Sw.) Lindl.— {AFP} State Endangered.

**Isotria** {AFP}

***Isotria verticillata*** Raf.— {AFP} State Endangered.

**Laelia** {AFP}

^ *Laelia rubescens* Lindl.— {AFP}

**Lepanthopsis** {AFP}

***Lepanthopsis melanantha*** (Rchb.f.) Ames— {AFP} State Endangered.

### Liparis {AFP}

*Liparis nervosa* (Thunb.)Lindl.— {AFP} State Endangered.

### Macradenia {AFP}

*Macradenia lutescens* R.Br.— {AFP} State Endangered.

### Malaxis {AFP}

1. Leaves 2-3(5); lip usually with yellowish, orange, to reddish coloration ... *M. spicata*

1. Leaves 1; lip green ... *M. unifolia*

*Malaxis spicata* Sw.— {AFP}

*Malaxis unifolia* Michx.— {AFP} State Endangered.

### Maxillaria {AFP}

1. Cespitose; pseudobulbs absent or scarcely developed; sepals 13-15 mm long ... *M. crassifolia*

1. Rhizomes elongate, scaly; pseudobulbs present, conspicuous; sepals 6-7 mm long ... *M. parviflora*

*Maxillaris crassifolia* (Lindl.)Rchb.f.—

*Maxillaria parviflora* (Poepp. & Endl.)Garay—

### Mesadenus {AFP}

*Mesadenus lucayanus* (Britton)Schltr.— {AFP} State Endangered.

### Neottia {AFP}

*Neottia bifolia* (Raf.) Baumbach— {AFP} State Threatened.

### Oeceoclades {AFP}

\**Oeceoclades maculata* (Lindl.)Lindl.— {AFP}

### Oncidium {AFP}

1. Leaves 25-40 times as long as wide; sepals and petals dull yellow with brownish markings ...

*O. ensatum*

1. Leaves 10-20 times as long as wide; sepals and petals bright yellow with dark reddish to purplish markings ... *O. sphacelatum*

*Oncidium ensatum* Lindl.— {AFP} State Endangered.

^ *Oncidium sphacelatum* Lindl.—

### Orthochilus {AFP}

*Orthochilus ecristatus* (Fernald)Bytebier— {AFP}

### Pelexia {AFP}

*Pelexia adnata* (Sw.)Poit. ex Rich.— {AFP} State Endangered.

### Phaius {AFP}



\**Phaius tancarvilleae* (Banks ex L'Hér.)Blume— {AFP}

### **Platanthera** {AFP}

1. Lip entire, auriculate, lobed, or shallowly erose to lacerate [2]
1. Lip margin strongly fimbriate [5]
2. Lip at the upper part of the flower (resupinate); sepals and petals white; lip entire, unlobed ...  
*P. nivea*
2. Lip at the lower part of the flower (not resupinate); sepals and petals XX; lip auriculate, lobed, or shallowly erose to lacerate [3]
3. Inflorescence internodes obscured by the densely congested flowers; sepals and petals bright yellow to orange; lip shallowly erose to lacerate ... *P. integra*
3. Inflorescence internodes visible, the flowers sparse along the rachis; sepals and petals white, pale yellow, to greenish; lip auriculate or lobed [3]
4. Lip without auricles or tubercles, apex shallowly 3-lobed ... *P. clavellata*
4. Lip with a basal pair of auricles or tubercles, apex rounded to emarginate ... *P. flava*
5. Sepals and petals white ... *P. blephariglottis* var. *conspicua*
5. Sepals and petals mostly or partly pale yellow to orange or off-white [6]
6. Spur 20–35 mm long, exceeding the ovary; rostellum lobes triangular, apices directed forward (column appearing acute in lateral view) ... *P. ciliaris*
6. Spur 4–17 mm long, subequal or shorter than the ovary; rostellum lobes slender, directed downward toward apices (column appearing truncate in lateral view), straight to distally retrorse [7]
7. Spur 8–17 mm (subequal to the ovary), its mouth nearly circular; rostellum lobes strongly retrorsely curved toward apices; viscidia presented downward and approximately parallel to lip ... *P. chapmanii*
7. Spur 4–10 mm (usually shorter than the ovary), its mouth triangular or keyhole-shaped; rostellum lobes scarcely to strongly curved; viscidia presented forward, nearly perpendicular to approximately parallel to lip ... *P. cristata*

***Platanthera blephariglottis*** (Willd.)Lindl. var. ***conspicua*** (Nash)Luer— {AFP} State Threatened.

***Platanthera chapmanii*** (Small)Luer— {AFP} State Endangered.

***Platanthera ciliaris*** (L.)Lindl.— {AFP} State Threatened.

***Platanthera clavellata*** (Michx.)Luer— {AFP} State Endangered.

***Platanthera cristata*** (Michx.)Lindl.— {AFP} State Threatened.

***Platanthera flava*** (L.)Lindl.— {AFP} State Threatened.

***Platanthera integra*** (Nutt.)A.Gray ex L.C.Beck— {AFP} State Endangered.

***Platanthera nivea*** (Nutt.) Luer— {AFP} State Threatened.

***Platanthera* ×*bicolor*** (Raf.)Luer (*blephariglottis* × *ciliaris*)— {AFP} Synonym *P. lueri*.

***Platanthera* ×*canbyi*** (Ames)Luer (*blephariglottis* × *cristata*)— {AFP} Synonym *P. beckneri*.

***Platanthera* ×*channellii*** Folsom (*ciliaris* × *cristata*)— {AFP}

Other hybrid taxa

*P.* ×*apalachicola*, nom. inval. (*chapmanii* × *cristata*)

*P.* ×*corderorum*, nom. inval. (*blephariglottis* × *chapmanii*)

*P.* ×*osceola*, nom. inval. (*chapmanii* × *ciliaris*)

### **Platythelys** {AFP}

***Platythelys latifolia*** (L.)Garay & Ormerod— {AFP}

## Pogonia {AFP}

***Pogonia ophioglossoides*** (L.)Ker Gawl.— {AFP} State Threatened.

## Polystachya {AFP}

***Polystachya concreta*** (Jacq.)Garay & H.R.Sweet— {AFP} State Endangered.

## Ponthieva {AFP}

1. Leaves withering or absent at anthesis; sepals and petals <5 mm long; petals not conspicuously striped green, 1-2 mm wide; lip indistinctly clawed, obovate; open rockland ... *P. brittoniae*

1. Leaves present at anthesis; sepals and petals >5 mm long; petals conspicuously striped green, 3.5-5 mm wide; lip distinctly clawed, suborbiculate; shady forests ... *P. racemosa*

***Ponthieva brittoniae*** Ames— {AFP} State Endangered.

***Ponthieva racemosa*** (Walter)C.Mohr— {AFP}

## Prescottia {AFP}

***Prescottia oligantha*** (Sw.)Lindl.— {AFP} State Endangered.

## Prosthechea {AFP}

1. Plant with creeping rhizomes, elongate internodes; leaves 2-5.5(8) cm long; inflorescence of 1-3 flowers ... *P. pygmaea*

1. Plant caespitose or with short rhizomes, internodes scarcely apparent; leaves 7-45 cm long; inflorescence of 3-12 flowers [2]

2. Pseudobulb orbicular to broadly ovoid; leaves to 18 cm long; flower resupinate; sepals and petals yellow-green and purplish-spotted throughout, oblanceolate, stiff; lip narrow, yellowish ... *P. boothiana* var. *erythronioides*

2. Pseudobulb ovoid to narrowly elliptic; leaves to 40 cm long; flower not resupinate; sepals and petals yellow-green, with few to no purplish spots, linear-lanceolate, lax; lip broadly flared, with purplish coloration ... *P. cochleata*

***Prosthechea boothiana*** (Lindl.)W.E.Higgins var. ***erythronioides*** (Small)W.E.Higgins— {AFP} State Endangered.

***Prosthechea cochleata*** (L.)W.E.Higgins— {AFP} State Endangered.

***Prosthechea pygmaea*** (Hook.)W.E.Higgins— {AFP} State Endangered.

## Sacoila {AFP}

1. Leaves present with the flowering spike; dorsal sepal 9-15 mm long ... *S. lanceolata* var. *paludicola*

1. Leaves absent during flowering, the leaves appearing weeks after flowering; dorsal sepal 15-23 mm long [2]

2. Rachis pubescent with bubble-shaped, glandular-capitate, and transitional hairs ... *S. lanceolata* var. *lanceolata*

2. Rachis scurfy, with white dots ... *S. squamulosa*

\*\****Sacoila lanceolata*** (Aubl.)Garay var. ***lanceolata***— {AFP} *Sacoila squamulosa* has been reported as distinctive and present in Florida (Brown 2000; Folsom 2000), but this name

has also been considered a synonym of *S. lanceolata* due to the observation of continuous variation (Acevedo-Rodríguez & Strong 2012; Ackerman 2015). State Threatened.

***Sacoila lanceolata*** (Aubl.) Garay var. ***paludicola*** (Luer) Sauleta et al.— {AFP} State Threatened.

### **Spathoglottis** {AFP}

^ *Spathoglottis plicata* Blume— {AFP}

### **Spiranthes** {AFP}

1. Trichomes sharply pointed, not capitate; flowering Apr-Jun ... *S. vernalis*
1. Trichomes blunt, capitate, not pointed, or plant glabrous [2]
2. Inflorescence rachis and flowers moderately to densely pubescent [3]
2. Inflorescence rachis and flowers glabrous, or sparsely to semi-moderately pubescent [9]
3. Labellum with a patch of papillae [4]
3. Labellum not papillate [5]
4. Flowers not fragrant; lateral sepals held parallel or below the flower; flowering Feb-Apr ... *S. brevilabris*
4. Flowers fragrant; lateral sepals usually sweeping upward; flowering Aug-Nov ... *S. triloba*
5. Leaves broadly lanceolate, to 49 cm long; flowers intensely fragrant; flowering Nov-Jan, Apr ... *S. odorata*
5. Leaves linear to oblanceolate, to 13 cm long; flowers not fragrant (or only faintly) [6]
6. Labellum centrally yellow; flowering Apr-Jul ... *S. laciniata*
6. Labellum centrally white (occasionally faint yellow in *S. cernua*); flowering Aug-Nov [7]
7. Lateral sepals flattened ... *S. cernua*
7. Lateral sepals cupped [8]
8. Viscidium and rostellum absent; flower autogamous ... *S. ovalis* var. *erostellata*
8. Viscidium and rostellum present; flower chasmogamous ... *S. ovalis* var. *ovalis*
9. Flowers <4 mm long; flowering Jun-Jul ... *S. tuberosa*
9. Flowers >4 mm long [10]
10. Leaves oblanceolate to obovate [11]
10. Leaves linear, linear-lanceolate, or absent [12]
11. Labellum centrally yellow; flowering Feb-Jun ... *S. floridana*
11. Labellum centrally green; flowering Feb-Apr, Nov ... *S. lacera*
12. Labellum coloration restricted to prominent veins; flowering Mar-May ... *S. praecox*
12. Labellum coloration solid [13]
13. Lateral sepals held moderately oblique to widely-spreading, slightly upwardly falcate; flowering Aug-Dec [14]
13. Lateral sepals held slightly oblique, moderately downwardly falcate; flowering Apr-Jun [15]
14. Lateral sepals slightly oblique; flowering Aug-Sep ... *S. igniorchis*
14. Lateral sepals moderately oblique to widely-spreading; flowering Oct-Dec ... *S. longilabris*
15. Labellum ovate to broadly lanceolate, the apex acute, the margin crenulate-ciliate margin; basal calli long-pubescent ... *S. amesiana*
15. Labellum oblong, the apex obtuse, the margin undulate; basal calli glabrous ... *S. torta*

***Spiranthes amesiana*** Schltr.— {AFP}

***Spiranthes brevilabris*** Lindl.— {AFP} State Endangered.

***Spiranthes cernua*** (L.) Rich.— {AFP}

***Spiranthes floridana*** (Wherry) Cory— {AFP}

***Spiranthes igniorchis*** M.C. Pace— {AFP} Endemic.

*Spiranthes lacera* (Raf.)Raf.— {AFP}

*Spiranthes laciniata* (Small)Ames— {AFP} State Threatened.

*Spiranthes longilabris* Lindl.— {AFP} State Threatened.

*Spiranthes odorata* (Nutt.)Lindl.— {AFP}

*Spiranthes ovalis* Lindl. var. **erostellata** Catling— {AFP} State Endangered.

*Spiranthes ovalis* Lindl. var. b— {AFP} State Endangered.

*Spiranthes praecox* (Walter)S.Watson— {AFP}

*Spiranthes torta* (Thunb.)Garay & H.R.Sweet— {AFP} State Endangered.

*Spiranthes triloba* (Small)K.Schum.— {AFP} Endemic.

*Spiranthes tuberosa* Raf.— {AFP} State Threatened.

*Spiranthes vernalis* Engelm. & A.Gray— {AFP}

### Stelis {AFP}

*Stelis gelida* (Lindl.)Pridgeon & M.W.Chase— {AFP} State Endangered.

### Tetramicra {AFP}

*Tetramicra* cf. **urbaniana** Cogn.—Known only from photos of plants in Martin Co. taken by Luer (1972). Based on the measurements given by Luer (1972), *T. canaliculata* (of Hispaniola thru the Lesser Antilles) would be the likely candidate. Based on the distribution, *T. urbaniana* from the Bahamas seems the more likely candidate.

### Tipularia {AFP}

*Tipularia discolor* (Pursh)Nutt.— {AFP} State Threatened.

### Tolumnia {AFP}

*Tolumnia bahamensis* (Nash ex Britton & Millsp.)Braem— {AFP} State Endangered.

### Trichocentrum {AFP}

1. Corolla white and pink, brown, to maroon; lip subequal in width to other petals ... T. carthagenense

1. Corolla yellow and brown, reddish, to maroon; lip much larger or wider than other petals ... T. undulatum

*Trichocentrum carthagenense* (Jacq.)M.W.Chase & N.H.Williams— {AFP}

*Trichocentrum undulatum* (Sw.)Ackerman & M.W.Chase— {AFP} State Endangered.

### Triphora {AFP}

1. Leaves appressed-erect to ascending ... T. gentianoides

1. Leaves spreading [2]

2. Leaf lower surface purple, margin undulate ... T. craigheadii

2. Leaf lower surface green, sometimes suffused with purple, margin entire or undulate [3]

3. Leaves suborbicular, reniform, to broadly ovate, the width subequal to larger than the length, the apex broadly rounded with an abruptly short-acuminate tip; flowers 1 per stem ... T. amazonica

3. Leaves ovate to cordate, length larger than to subequal to the width, the apex subacute to acute; flowers 1-many per stem [4]

4. Leaf margin undulate; flowers and fruits erect; sepals erect, strict ... T. rickettii

4. Leaf margin entire; flowers post-anthesis and the immature fruit pendent, open flowers spreading to erect, mature fruits erect; sepals spreading ... *T. trianthophoros*

***Triphora amazonica*** Schltr.— {AFP} State Endangered.

***Triphora craigheadii*** Luer— {AFP} Endemic. State Endangered.

***Triphora gentianoides*** (Sw.)Ames & Schltr.— {AFP}

***Triphora rickettii*** Luer— {AFP} Endemic.

***Triphora trianthophoros*** (Sw.)Rydb.— {AFP} State Threatened.

### Tropidia {AFP}

***Tropidia polystachya*** (Sw.)Ames— {AFP} State Endangered.

### Vanilla {AFP}

1. Leaves ephemeral, the stems soon becoming leafless [2]

1. Leaves persistent, the stems leafy [3]

2. All leaves early deciduous, margins not revolute, apex not hooked; sepals petals <5 cm long, 1.2 cm wide or more; edge of lateral lobes of lip white, the middle lobe subequal to shorter than the lateral lobes, the lip <4 cm long ... *V. barbellata*

2. Most leaves early deciduous, a few persistent, margins revolute, apex hooked; sepals and petals >5 cm long, 1.2 cm wide or less; edge of lateral lobes of lip purple, the middle lobe longer than the lateral lobes, the lip >4 cm long ... *V. dilloniana*

3. Stems 2-4 mm wide; leaves broadly ovate and relatively thin; lip adnate to the column only 5 mm above the base ... *V. mexicana*

3. Stems 5-12 mm wide; leaves elliptic to oblong and relatively thick; lip adnate to the basal 2/3 of the tubular column [4]

4. Larger leaves 2.5-5 cm wide; sepals and petals >7 cm long; fruit to 10 cm long ... *V. phaeantha*

4. Larger leaves (5)6-8 cm wide; sepals and petals <7 cm long; fruit 15-25 cm long

5. Floral bracts 5-10 mm long; corolla lip subentire roughened-undulate, upper side papillate with lacinate scales ... *V. planifolia*

5. Floral bracts 12-18 mm long; corolla lip undulate-denticulate, upper side papillate with lacerate scales ... *V. pompona*

***Vanilla barbellata*** Rchb.f.— {AFP} State Endangered.

***Vanilla dilloniana*** Correll— {AFP} State Endangered.

***Vanilla mexicana*** Mill.— {AFP} State Endangered.

***Vanilla phaeantha*** Rchb.f.— {AFP} State Endangered.

^ *Vanilla planifolia* Andrews— {AFP}

### Zeuxine {AFP}

\****Zeuxine strateumatica*** (L.)Schltr.— {AFP}

### HYPOXIDACEAE {AFP}

1. Leaves 2-9 cm wide; inflorescence densely capitate, of 10+ flowers; fruit an indehiscent berry ... *Curculigo capitulata*

1. Leaves 0.1-1.5 cm wide; inflorescence of 1-3(7) flowers; fruit a dehiscent capsule ... *Hypoxis*

### Curculigo {AFP}

^ *Curculigo capitulata* (Lour.) Kuntze— {AFP}

### **Hypoxis** {AFP}

1. Leaves glabrous or nearly so, or with scattered trichomes near base [2]
1. Leaves sparsely to densely pubescent, at least near base [3]
2. Leaves 1–15 mm wide, soft, flexible; floral bracts 1–20(–80) mm; ovary glabrate or sparsely to densely pubescent; seeds muricate ... *H. curtissii*
2. Leaves 0.3–1 mm wide, hard, stiff; floral bracts 1–7(–12) mm; ovary densely pubescent; seeds with low, rounded sculpturing ... *H. juncea*
3. Leaves 0.3–1 mm wide; pedicel usually 2+ times longer than bracts ... *H. juncea*
3. Leaves usually 0.7–26 mm wide; pedicel usually less than 2 times as long as bracts [4]
4. Pedicel usually longer than bracts; tepals longer than pedicel; anthers 1.5–3.5 mm; seeds with low, rounded sculpturing, lacking an evident cuticle ... *H. rigida*
4. Pedicel shorter to longer than bracts; tepals shorter to longer than pedicel; anthers 0.6–2.2 mm; seeds with an evident wrinkled, membranous cuticle [5]
5. Tepals 1.5–2 times as long as ovary; seeds with low, rounded sculpturing, with an iridescent cuticle ... *H. sessilis*
5. Tepals 1–1.5(2) times as long as ovary; seeds muricate, the cuticle not iridescent ... *H. wrightii*

***Hypoxis curtissii*** Rose— {AFP}

***Hypoxis juncea*** Sm.— {AFP}

***Hypoxis rigida*** Chapm.— {AFP}

***Hypoxis sessilis*** L.— {AFP}

***Hypoxis wrightii*** (Baker) Brackets— {AFP}

### **IRIDACEAE** {AFP}

1. Inflorescences spicate, 2–many-flowered, subtended by pair of opposed bracts; rootstock a corm; flowers zygomorphic to subactinomorphic; tepals tubular-connate [2]
1. Inflorescences rhipidiate, (1)2–several-flowered, subtended by 2 foliaceous spathes; rootstock a rhizome, bulb, or indistinct; flowers actinomorphic, tepals distinct or tubular-connate [4]
2. Style branches each divided for about 1/2 its length, filiform throughout ... *Freesia*
2. Style branches each simple or apically notched, filiform throughout or expanded terminally [3]
3. Tepals shades of orange to reddish; style branches apically notched, not expanded above; seeds not winged, globose ... *Crocasmia crocosmiiflora*
3. Tepals variously colored; style branches expanded terminally, not filiform throughout; seeds usually broadly winged, globose or angular ... *Gladiolus*
4. Sepals and petals subequal and very similar in shape and coloring (tepals) [5]
4. Sepals and petals dissimilar in size, shape, or coloring (if subequal and similar, then sepals and petals orange, reddish orange, to pinkish orange, with darker orange to reddish spots) [7]
5. Tepals 0.4–1.3 cm long; fruit 2–8 mm long ... *Sisyrinchium*
5. Tepals 2–3 cm long; fruit 6–12 mm long [6]
6. Tepals lacking streaks at the base; style erect, 10–12 mm long ... *Calydorea caelestina*
6. Tepals with short, dark streaks at the base; style central column erect and 2–3 mm long, then split into 6 spreading arms ... *Nemastylis floridana*
7. Leaves plicate; rootstock a bulb; sepals 2–3 times as long as petals; plants 10–20 cm tall or long ... *Herbertia*

- 7. Leaves plane; rootstock a rhizome or indistinct; plants 10-150 cm tall or long [8]
- 8. Style branches thickened, often bearing acute paired terminal appendages; anthers lightly affixed style branch underside; inner tepals often bent or folded at base and bearing oil glands on short hairs ... *Trimezia*
- 8. Style branches usually petaloid, with flat terminal appendages; anthers appressed to style branch; inner tepals usually not bent or folded, eglandular [9]
- 9. Tepals free; pedicels hairy ... *Dietes*
- 9. Tepals united basally into a tube, rarely free; pedicels glabrous ... *Iris*

### **Calydorea** {AFP}

***Calydorea caelestina*** (W.Bartram)Goldblatt & Henrich— {AFP} Endemic. State Endangered.

### **Crocospmia** {AFP}

^ *Crocospmia* × *crocospmiiflora* (Lemoine ex E.Morren)N.E.Br.— {AFP}

**Dietes** See treatment by Goldblatt (1981).

- 1. Stem bracts 9-20 mm long, often brownish, 2 per node and subequal; sepals with a dark purplish or blackish spot at the base; fruit obovate, nearly as wide as long ... *D. bicolor*
- 1. Stem bracts 25-50 mm long, usually greenish, solitary or a second, inner one much reduced; sepals with a yellow to orange band or line or band of spots at the base; fruit ellipsoidal, 2-3 times as long as wide [2]
- 2. Sepals 4.5-6 cm long, with a longitudinal solid or continuous band, line, or band of spots of yellow to orange color; petals with brown markings on the claw; style branches excluding crests 12-20 mm long; flowers may last 3 days ... *D. grandiflora*
- 2. Sepals 2.4-4 cm long, with a longitudinal band, line, or band of spots of yellow that fades medially and is largely white at the center; petals without markings; styles branches 7-9 mm long; flowers last 1 day ... *D. iridioides*

^ *Dietes bicolor* (Steud.)Sweet ex Klatt—

^ *Dietes grandiflora* N.E.Br.—

^ *Dietes iridioides* (L.)Sweet ex Klatt— {AFP}

### **Freesia** {AFP}

- 1. Tepals 15-18 mm long, predominantly white, sometimes with yellow markings on lower tepals, tepals and tube lightly flushed with purple abaxially; distal part of tube longer than basal part, very gradually flared; anthers 6-9 mm long ... *F. alba*
- 1. Tepals 9-13 mm long, pink to red with dark red markings on lower 3 tepals; tube cylindrical throughout or slightly flared distally; anthers 3-4 mm long ... *F. laxa*

\* ***Freesia alba*** (G.L.Mey.)Gumbl.— {AFP}

\* ***Freesia laxa*** (Thunb.)Goldblatt & J.C.Manning— {AFP}

### **Gladiolus** {AFP}

- 1. Tepals pink to reddish or light purple with white markings on outer 3, perianth tube 10-12 mm long, inner tepals 28-40 mm long, outer tepals 18-25 mm long ... *G. communis*
- 1. Tepals white to cream or orange to red, perianth tube (25)35-65 mm long, inner tepals 35-70 mm long, outer tepals 20-55 mm long [2]

2. Tepals yellow, orange, to red, or greenish with brown to red streaks, inner tepals 35-50 mm long, outer tepals 20-25(3) mm long ... *G. dalenii*

2. Tepals white, pink, red, yellow, orange, red, to purple, inner tepals 60-70 mm long, outer tepals 45-55 mm long ... *G. gandavensis* or *G. hortulanus*

\**Gladiolus dalenii* Van Geel— {AFP}

^ *Gladiolus* × *gandavensis* Van Houtte— {AFP}

## Herbertia {AFP}

^ *Herbertia lahue* (Molina) Goldblatt— {AFP}

**Iris {AFP}** The flowers are very showy and, in most of our irises, the sepals are the most prominent and largest part of the flower. The sepals are the brightly colored (violet, blue, copper, yellow) outer whorl that often have markings (e.g. yellow or white) near the base and center. The petaloid stigmas (inner whorl) arch directly over the sepals and can be bifurcate at the tip. The petals are the middle whorl that alternate with the sepals, and in *I. tridentata* are rather small. In *I. domestica* the stigmas are not petal-like. Mature fruits are very helpful for identification but rarely are collected.

1. Sepals and petals orange, reddish orange, to pinkish orange, sometimes with darker orange to reddish spots; style branch or stigma not petaloid, not closely hovering over the sepals ... *I. domestica*

1. Sepals and petals white, blue, purple, lavender, yellow, orange, orange-red, or mixtures of, any spots not orange or reddish; style branch or stigma petaloid, closely arching or hovering over the sepals [2]

2. Sepals with multicellular hairs (beard) along midrib of claw and base of blade [3]

2. Sepals without beard, usually with signal of contrasting color, fine pubescence, ridges, or cockscomblike crest [4]

3. Spathes herbaceous with narrow scarious margins and tip, green, sometimes purple at base ... *I. ×germanica*

3. Spathes entirely scarious, silvery white ... *I. pallida*

4. Perianth entirely yellow ... *I. pseudacorus*

4. Perianth not entirely yellow [5]

5. Perianth uniformly (or nearly so) pinkish brown, yellowish brown, red-brown, to orange-red ... *I. fulva*

5. Perianth mostly white, blue, purple, lavender, and mixtures of, often with yellow or orangish markings on the basally along the midrib of the sepals [6]

6. Sepals white to pale bluish with yellow-orange spots and bands, the margins fimbriate-lacerate ... *I. japonica*

6. Sepals mostly blue, purple, or lavender with only bands of yellow to orange color, rarely only yellow, the margins entire, undulate, to subtly roughened-undulate [7]

7. Style branch broad, more than half as long as sepal, broadly upcurved at the apex ... *I. hollandica*

7. Style branch narrow, less than half as long as sepal, upcurved at the very tip [8]

8. Petals generally hidden by base of sepals, 1-2 cm long ... *I. tridentata*

8. Petals conspicuous, exerted, 2-9.5 cm long [9]

9. Capsules 3-angled or nearly round in cross section and lacking angles, ridges, or wings [10]

9. Capsules with 6 angles, ridges, or wings [11]



- 10. Rhizomes heterogeneous, innovations appearing at some distance from parent rhizome; flowering scape to 15 cm long; perianth tube subequal to sepals; seeds arillate ... *I. verna* var. *smalliana*
- 10. Rhizomes homogeneous; innovations appearing close to parent rhizome; flowering scape (30)50-100 cm long; perianth tube shorter than the sepals; seeds not arillate ... *I. virginica*
- 11. Stems declining or semierect, sharply zigzag, 20-40 cm long ... *I. brevicaulis*
- 11. Stems erect, not obviously zigzag, 30-150(200) cm long [12]
- 12. Leaves yellow-green and evergreen; sepals tips acute to rounded; fruit 2.5-3.5 cm long, with 3 plane faces and 3 faces with 2 rounded ridges, strongly hexagonal ... *I. hexagona*
- 12. Leaves bright green, not evergreen; sepal tips obtuse, acute, to acuminate; fruit 6-10 cm long nearly circular in cross section, only slightly if at all hexagonal, with 6 narrow, winglike ridges or 6 broadly rounded lobes [13]
- 13. Fruit with 6 broad, rounded lobes, indehiscent ... *I. giganteaerulea*
- 13. Fruit with 6 sharp, winglike ridges, dehiscent ... *I. savannarum*

***Iris brevicaulis*** Raf.— {AFP}

^ *Iris domestica* (L.) Goldblatt & Mabb.— {AFP}

***Iris fulva*** Ker Gawl.— {AFP}

^ *Iris × germanica* L.— {AFP}

***Iris giganteaerulea*** Small— {AFP}

***Iris hexagona*** Walter— {AFP}

^ *Iris pseudacorus* L.— {AFP}

***Iris savannarum*** Small— {AFP}

***Iris tridentata*** Pursh— {AFP}

***Iris verna*** L. var. ***smalliana*** Fernald ex M.E. Edwards— {AFP}

***Iris virginica*** L.— {AFP}

**Nemastylis** {AFP}

***Nemastylis floridana*** Small— {AFP} Endemic. State Endangered.

**Sisyrinchium** {AFP}

- 1. Inflorescence clusters sessile, subtended by a basal spathe far exceeding the inflorescence cluster ... *S. albidum*
- 1. Inflorescence clusters pedunculate, the basal spathe not reaching the distalmost inflorescence clusters [2]
- 2. Leaf bases persistent as dense, fibrous tufts [3]
- 2. Leaf bases not persistent as fibrous tufts or sparsely so [5]
- 3. Stems 1-1.7 mm wide, with 1 node ... *S. fuscatum*
- 3. Stems 2.3-5.7 mm wide, with 1-3 nodes [4]
- 4. Plant yellowish green or light olive green when dry; stem nodes 1-2, first internode longer than longest leaf; leaf blades 1-4 mm wide; fruit 2.5-4(4.8) mm long; seeds 1-1.2 mm long ... *S. nashii*
- 4. Plant dark to blackish olive when dry; stem nodes 2-3, first internode subequal to longest leaf; leaf blades 3.5-6 mm wide; fruit (3.8)5-8 mm long; seeds 1.3-3 mm long ... *S. xerophyllum*
- 5. Annual or short-lived perennial; tepals white, pink, maroon, yellow, to pale bluish, the tips acute, short-acuminate ... *S. micranthum*
- 5. Perennial; tepals pale blue, blue, pale lavender, to violet, the tips usually rounded or retuse with an aristate or mucronate apex [6]

- 6. Stems 2.3-5 mm wide; fruit 4-7 mm long ... *S. angustifolium*
- 6. Stems 0.5-2(2.5) mm wide; fruit 2-4.7 mm long [7]
- 7. Ovary and capsule black, contrasting with much lighter foliage [8]
- 7. Ovary and capsule not contrasting with foliage [9]
- 8. Plant laxly spreading, to 57 cm long, nodes sharply geniculate, stems with 1(2) forks ... *S. atlanticum*
- 8. Plants stiffly erect, to 75 cm tall, nodes not geniculate, stems with (1)2(3) forks ... *S. corymbosum*
- 9. Inflorescence outer spathe margins basally connate 2.2-3.8(5) mm ... *S. langloisii*
- 9. Inflorescence outer spathe margins basally connate 3.9-6.5 mm ... *S. miamiense*

***Sisyrinchium albidum*** Raf.— {AFP}

***Sisyrinchium angustifolium*** Mill.— {AFP}

\****Sisyrinchium micranthum*** Cav.— {AFP}

***Sisyrinchium nashii*** E.P.Bicknell— {AFP}

***Sisyrinchium xerophyllum*** Greene— {AFP}

### Trimezia {AFP}

- 1. Rhizome or corm erect; flowering stem unwinged; sepals and petals predominantly yellow [2]
- 1. Rhizome or corm creeping to suberect; flowering stem winged; sepals and petals predominantly white, blue, lavender, or purple [3]
- 2. Sepals with a discoloured basal band ... *T. martinicensis*
- 2. Sepals with purplish or brownish spots at the base ... *T. steyermarkii*
- 3. Sepals white without spots (purplish and yellow markings at base); inflorescence sometimes arching and rooting at tip along ground ... *T. northiana*
- 3. Sepals blue to violet with darker spots (purplish and yellow markings at base); inflorescence generally erect ... *T. coerulea*

^ *Trimezia steyermarkii* R.C.Foster— {AFP}

### ASPHODELACEAE {AFP}

- 1. Leaf surface usually ornamented with prickles, tubercles, or ridges [2]
- 1. Leaf surface usually smooth [3]
- 2. Leaf margin prickly; anthers and styles exerted ... *Aristaloe*
- 2. Leaf margin smooth or undifferentiated from surface; anthers and styles included ... *Haworthiopsis*
- 3. Dwarf herbs with thickly succulent, short leaves ... *Haworthia*
- 3. Herbs with wide-spreading leaves or caulescent [4]
- 4. Leaves deltate, margins entire, prickly, or toothed; flowers with nectar; tepals fused into a tube ... *Aloe*
- 4. Leaves linear-lanceolate, entire; flowers lacking nectar; tepals free ... *Bulbine frutescens*

### Aloe {AFP}

- 1. Caulescent ... *A. arborescens*
- 1. Acaulescent, or the stem buried in the substrate [2]
- 2. Leaf margin prickles rather blunt and soft; inflorescence spicate; corolla usually yellow ... *A. vera*

2. Leaf margin prickles usually acute and stiff; inflorescence capitate or paniculate; corolla usually orange to red [3]
3. Leaf margin distinctly pinkish ... *A. ×schimperi*
3. Leaf margin concolorous or paler than the rest of the blade [4]
4. Inflorescence capitate ... *A. maculata*
4. Inflorescence diffuse with ascending-spreading branches ... *A. ×commutata*

^ *Aloe vera* (L.)Burm.f.— {AFP}

^ *Aloe × commutata* Tod.— {AFP}

^ *Aloe × schimperi* Tod.— {AFP}

### Bulbine {AFP}

^ *Bulbine frutescens* (L.)Willd.— {AFP}

### HEMEROCALLIDACEAE {AFP}

1. Upper side of leaf sheath apex connate; inflorescence paniculate; tepals white, blue, to yellowish, free, 4-8 mm long; fruit a blue to violet berry ... *Dianella*
1. Upper side of leaf sheath apex not connate; inflorescence of (1)2 helicoid cymes; tepals pinkish white, yellow, orange, purple, to red, basally connate forming a tube, the lobes 30-70 mm long; fruit a loculicidal capsule ... *Hemerocallis*

### Dianella {AFP}

^ *Dianella ensifolia* (L.)DC.— {AFP} Identifiable by its locule with 4 ovules. Other names sometimes applied include those with 6-12 ovules per locule: *D. caerulea* (rhizome brown; cymules of 3-25 flowers; pedicels sharply ridged or winged; fruit 7-12 mm long) or *D. tasmanica* (rhizome yellow; cymules of 2-5 flowers; pedicels terete; fruit 12-25 mm long).

### Hemerocallis {AFP}

1. Tepals variously pink, pale pinkish white, purple, red ... *Hemerocallis* hybrids
1. Tepals generally yellow to orange [2]
2. Flowers not fragrant; tepals orange, pale orange, to pinkish or reddish orange, reticulate-veined; inner tepal margins wavy ... *H. fulva*
2. Flowers fragrant; tepals lemon yellow, parallel-veined; inner tepal margins smooth ... *H. lilioasphodelus*

\* *Hemerocallis fulva* (L.)L.— {AFP}

^ *Hemerocallis lilioasphodelus* L.— {AFP}

### ALLIACEAE {AFP}

1. Flower solitary ... *Ipheion uniflorum*
1. Flowers several in an umbel [2]
2. Inflorescence bracts 16-25 mm long; corolla, tepals pale pink to purple, connate forming a tube as long as the lobes, the lobes (7)10-16 mm long; cultivated only ... *Tulbaghia violacea*
2. Inflorescence bracts 6-18 mm long; tepals predominantly white, sometimes pinkish, or tepals absent (bulbils present), free or connate only at the very base, the tube scarcely discernible or to 1/3 of the tepal length [3]
3. Plant with garlic or onion-like odor; leaves 1-7 mm wide; tepals 4-9 mm long or absent (bulbils sometimes present); ovules or seeds 1-2 per locule ... *Allium*

3. Plant lacking a garlic or onion-like odor; leaves 2-15 mm wide; tepals 8-15 mm long (bulbils absent); ovules or seeds 3-many per locule ... *Nothoscordum*

### **Allium** {AFP}

1. Outer bulb coats membranous to chartaceous, with or without distinct cellular markings (reticulation), without fibers or with some parallel fibers; scape triquetrous, 2-edged, winged; inflorescence bulbils absent ... *A. neapolitanum*

1. Outer bulb coats persisting as fibrous reticulum; scape terete to slightly 3 or 4-angled; inflorescence bulbils present or absent [2]

2. Inflorescence of flowers, producing fruits (capsules) [3]

2. Inflorescence with bulbils [4]

3. Outer bulb coats membranous to chartaceous, with or without distinct cellular markings (reticulation), without fibers or with some parallel fibers ... *A. cepa*

3. Outer bulb coats persisting as fibrous reticulum [4]

4. Ovary and capsule lacking crests; tepals pink (rarely white), ovate, elliptic, to lanceolate, the apex obtuse to acute ... *A. canadense* var. *mobilense*

4. Ovary and capsule crested with 6 irregularly contorted processes; tepals white to pink or purple, lanceolate to linear-lanceolate, the apex acute to acuminate ... *A. cuthbertii*

5. Outer bulb coats persisting as fibrous reticulum; leaf sheaths not extending more than 1/4 scape; spathe bract beakless or beak much shorter than base ... *A. canadense* var. *canadense*

5. Outer bulb coats membranous, if with fibers these not forming reticulum; leaf sheaths extending to midscape or above; spathe bract with beak equaling or longer than base [6]

6. Spathe bract 2-5, persistent ... *A. ampeloprasum*

6. Spathe bract 1, caducous ... *A. sativum*

^ *Allium ampeloprasum* L.—

***Allium canadense*** L. var. ***canadense***— {AFP}

***Allium canadense*** L. var. ***mobilense*** (Regel)M.Ownbey— {AFP}

^ *Allium cepa* L.—

***Allium cuthbertii*** Small— {AFP}

^ *Allium neapolitanum* Cirillo— {AFP}

^ *Allium sativum* L.—

### **Ipheion** {AFP}

^ *Ipheion uniflorum* (Graham)Raf.— {AFP}

### **Nothoscordum** {AFP}

1. Leaves 2-4(5) mm wide; flowers not fragrant; tepals free or connate only at the very base ... *N. bivalve*

1. Leaves (4)5-15 mm wide; flowers fragrant; tepals connate to 1/3 of their length [2]

2. Flowers opening mid-afternoon until evening; filaments linear-lanceolate, contiguous in the lower half or less; ovary obovoid ... *N. borbonicum*

2. Flowers opening in evening until morning; filaments linear-cuspidate, closely contiguous for most of their length; ovary ellipsoid-oblong, subcylindric, to obovoid ... *N. gracile*

***Nothoscordum bivalve*** (L.)Britton— {AFP}

\****Nothoscordum gracile*** (Aiton)Stearn— {AFP} According to Ravenna (1991), the weedy species noted by Small in the southeastern USA is *N. borbonicum*. Jacobsen & McNeal, Jr.

(2002 in FNA, vol. 26) felt that *N. gracile* was the proper name (like Stearn 1986), and *N. borbonicum* was misapplied in the USA.

### AMARYLLIDACEAE {AFP}

1. Leaves absent at flowering; tepals linear, pink to red; filaments pink to red, subequal and very similar to tepals; fruits red to orange and berry-like; cultivated only ... Scadoxus
1. Leaves present or absent at flowering; tepals linear-lanceolate to ovate, white, pink, yellow, purple, to red; filaments not at all similar to tepals; fruit not berry-like; native, naturalized, or cultivated [2]
2. Flower a conspicuous corona internal to the tepals [3]
2. Flower without a corona, or corona minute [4]
3. Corona spreading or rotate, white; filaments adnate to the corona ... Hymenocallis
3. Corona tubular, yellow or white; filaments not adnate to the corona ... Narcissus
4. Inflorescence with 1(-4) flowers [5]
4. Inflorescence with (1)2-100 flowers [6]
5. Scape solid; flowers pendulous; perianth 1-2.5 cm long ... Galanthus nivalis
5. Scape hollow; flowers declinate to suberect; perianth 2-16 cm long ... Zephyranthes
6. Scape hollow [7]
6. Scape solid [8]
7. Flowers declinate to erect, with a minute corona; tepals white, orange, pink, to red, lacking a green spot ... Hippeastrum
7. Flowers pendulous, lacking a corona; tepals white with a green spot near the tip ... Leucojum aestivum
8. Ovary superior; tepals bluish; seeds not fleshy (Agapanthaceae) ... Agapanthus
8. Ovary inferior; tepals white, orange, pink, to red; seed fleshy [8]
9. Leaves present at flowering; flowers actinomorphic to subtly zygomorphic; tepals white to pink or reddish; stamens shorter than to subequal to tepals ... Crinum
9. Leaves absent at flowering; flowers strongly zygomorphic; tepals pink, orange, to red; stamens longer than the tepals ... Lycoris

### Crinum {AFP}

1. Perianth limb lobes linear to narrowly oblanceolate, overlapping only near the base [2]
1. Perianth limb lobes obovate to oblanceolate, overlapping with adjacent limbs for at least  $\frac{1}{3}$  of their length [4]
2. Leaf blades 2-4 cm wide; inflorescence of 2-7 flowers; perianth limb lobes white to occasionally partly pale pink (native and widespread in Florida) ... *C. americanum*
2. Leaf blades 4-15 cm wide; inflorescence of 10-100 flowers [3]
3. Scape usually strongly purplish (at least distally) and often the scape bracts, pedicel, tube, and lower surface of strongly purplish ... *C. amabile*
3. Scape, scape bracts, and pedicel usually green, and flower tube and lower surface of perianth limb lobes generally white to yellowish ... *C. asiaticum*
4. Leaf blade 0.3-1.5 cm wide ... *C. campanulatum*
4. Leaf blades 2-6 cm wide [5]
5. Perianth limb lobes white with pink or purplish color stripes [6]
5. Perianth limb lobes mostly uniformly white to pink, or with greenish or white stripes [7]
6. Flower (ovary) and fruit distinctly pedicellate; scape and tube usually green or greenish ... *C. bulbispermum*

- 6. Flower (ovary) and fruit sessile to subsessile; scape and tube usually strongly purplish, ... *C. zeylanicum*
- 7. Flower (ovary) and fruit distinctly pedicellate ... *C. powellii*
- 7. Flower (ovary) and fruit sessile to subsessile [8]
- 8. Perianth limb lobes white, style white to greenish ... *C. jagus*
- 8. Perianth limb lobes and style (at least distally) usually pink ... *C. moorei*

***Crinum americanum* L.— {AFP}**

- ^ *Crinum amabile* Donn ex Ker Gawl.—
- ^ *Crinum asiaticum* L.— {AFP}
- ^ *Crinum bulbispermum* (Burm.f.)Milne-Redh. & Schweick.— {AFP}
- ^ *Crinum campanulatum* Herb.— {AFP}
- ^ *Crinum jagus* (J.Thomps.)Dandy—
- ^ *Crinum moorei* Hook.f.—
- ^ *Crinum powellii* Baker—
- ^ *Crinum zeylanicum* (L.)L.— {AFP}

***Galanthus* {AFP}**

- ^ *Galanthus nivalis* L.— {AFP}

***Hymenocallis* {AFP}**

- 1. Leaves evergreen; inflorescence of 3-15 flowers; perianth tube (6)7.5-20 cm long; filaments green (at least distally); flowering late Jun-Oct [2]
- 1. Leaves deciduous; inflorescence of 1-9(12) flowers; perianth tube 4-13.5 cm long; filaments white; flowering Feb-Aug [3]
- 2. Leaves 50-100 cm long, 4-9 cm wide, blade broadly liguliform; inflorescence of (5)9-15 flowres; margins between free portions of filaments wavy, prominent projections absent; ovary ovoid, 0.9-1.6 cm long, 5-10 mm wide; flowering late Jun-Oct ... *H. latifolia*
- 2. Leaves 35-75 cm long, 1.5-3 cm wide, blade narrowly liguliform; inflorescence of 3-5 flowers; margins between free portions of filaments with 1-2 prominent lacerations; ovary pyriform, 1.5-2.4 cm long, ca. 10 mm wide; flowering late Jun-Sep ... *H. puntagordensis*
- 3. Ovary 14-30 mm long, 6-15 mm wide; ovules 4-8 per locule [4]
- 3. Ovary 7-15 mm long, 5-10 mm wide; ovules 1-3(4) per locule [9]
- 4. Inflorescence of 1-2 flowers; tepals pale green [5]
- 4. Inflorescence of 2-4 flowers; tepals white [7]
- 5. Inflorescence of 1 flower; tepals ascending, equal to or shorter than perianth tube ... *H. palmeri*
- 5. Inflorescence of 2(3) flowers; tepals long-spreading, nearly always longer than perianth tube [6]
- 6. Plants often in dense clumps; leaf blades glaucous ... *H. henryae* var. *glaucifolia*
- 6. Plants solitary or in loose clumps; leaf blades not glaucous or only slightly so ... *H. henryae* var. *henryae*
- 7. Corona 6-9 cm wide ... *H. rotata*
- 7. Corona 4-6 cm wide [8]
- 8. Longest leaf not exceeding 4 dm at anthesis; free filaments to 3 cm; anthers 1.2–1.5 cm ... *H. godfreyi*
- 8. Longest leaf exceeding 4 dm at anthesis; free filaments to 4 cm; anthers 1.5–2 cm ... *H. tridentata*

- 9. Leaf blades oblanceolate, distinctly wider beyond middle before tapering; inflorescence with 2-9 flowers [10]
- 9. Leaf blades liguliform to narrowly lanceolate or narrowly oblanceolate; inflorescence with 2-3 flowers [11]
- 10. Bulbs rhizomatous; leaves coriaceous, not glaucous; scape bracts 3-4(6) cm long, apex acute; flowering Apr-Jul ... *H. choctawensis*
- 10. Bulbs not rhizomatous; leaves noncoriaceous, glaucous; scape bracts 4-7 cm long, apex long-acuminate; flowering Jul-Aug ... *H. occidentalis*
- 11. Scape bracts narrowly lanceolate, 2.5-5.5 cm × 7-12 mm [12]
- 11. Scape bracts lanceolate, 3-5 cm × 10-20 mm [13]
- 12. Leaves suberect to erect, the blade channeled nearly throughout, typically liguliform; staminal corona funnellform at full anthesis, soon gradually spreading ... *H. crassifolia*
- 12. Leaves chiefly arching low, often appearing prostrate, the blade channeled proximally, occasionally narrowly oblanceolate; staminal corona rotate at full anthesis ... *H. duvalensis*
- 13. Bulbs 2.5-4 cm long; scape bracts 3-4(4.5) cm long, 1-1.5 cm wide ... *H. franklinensis*
- 13. Bulbs 4.5-7.5 cm long; scape bracts 4-5 cm long, 1.5-2 cm wide ... *H. gholsonii*

***Hymenocallis choctawensis*** Traub— {AFP}

***Hymenocallis crassifolia*** Herb.— {AFP}

***Hymenocallis duvalensis*** Traub— {AFP}

***Hymenocallis franklinensis*** G.Lom.Sm. et al.— {AFP} Endemic.

***Hymenocallis gholsonii*** G.Lom.Sm. & Garland— {AFP} Endemic.

***Hymenocallis godfreyi*** G.Lom.Sm. & Darst— {AFP} Endemic. State Endangered.

***Hymenocallis henryae*** Traub var. ***glaucifolia*** J.N.Henry & G.Lom.Sm.— {AFP} Endemic. State Endangered.

***Hymenocallis henryae*** Traub var. ***henryae***— {AFP} Endemic. State Endangered.

***Hymenocallis latifolia*** (Mill.)M.Roem.— {AFP}

***Hymenocallis occidentalis*** (Leconte)Kunth— {AFP}

***Hymenocallis palmeri*** S.Watson— {AFP} Endemic.

***Hymenocallis puntagordensis*** Traub— {AFP} Endemic.

***Hymenocallis rotata*** (Ker Gawl.)Herb.— {AFP} Endemic.

***Hymenocallis tridentata*** Small— {AFP} Endemic.

## Leucojum {AFP}

^*Leucojum aestivum* L.— {AFP}

## Lycoris {AFP}

1. Tepals and filaments yellow to orange ... *Lycoris aurea*

1. Tepals and filaments pink to red ... *Lycoris radiata*

^*Lycoris aurea* (L'Hér.)Herb.—

^*Lycoris radiata* (L'Hér.)Herb.— {AFP}

## Narcissus {AFP}

1. Inflorescence of 1-4 flowers; tepals and corona uniformly yellow [2]

1. Inflorescence of 1-15(20) flowers; tepals and corona uniformly white or yellow and white [4]

2. Leaf blades nearly terete, 2-4 mm wide ... *N. jonquilla*

2. Leaf blades flat 4-15(20) mm wide [3]

- 3. Inflorescence with 1-4 flowers; corona ca. ca. 1/2 to 3/4 as long as free portion of tepals ... *N. odor*
- 3. Inflorescence with 1 flower; corona subequal to free portion of tepals ... *N. pseudonarcissus*
- 4. Inflorescence with 1 flower [5]
- 4. Inflorescence with 5-15(20) flowers [6]
- 5. Tepals white; corona yellow to greenish with a striking red margin, 1/4 or less as long as free portion of tepals ... *N. poeticus*
- 5. Tepals white to pale yellow; corona yellow to orange, the margin sometimes darker orange, ca. 1/3 to 2/3 as long as the free portion of the tepals ... *N. incomparabilis*
- 6. Tepals and corona white ... *N. papyraceus*
- 6. Tepals white, corona yellow to orange ... *N. tazetta*

^ *Narcissus x incomparabilis* Mill.— {AFP}

^ *Narcissus jonquilla* L.—

^ *Narcissus papyraceus* Ker Gawl.—

^ *Narcissus pseudonarcissus* L.— {AFP}

^ *Narcissus tazetta* L.— {AFP}

### **Zephyranthes** {AFP}

- 1. Perianth tube 1-4 mm long [2]
- 1. Perianth tube 7-40 mm long [6]
- 2. Stigma 3-lobed capitate ... *Z. candida*
- 2. Stigma 3-fid [3]
- 3. Flower actinomorphic; filaments spreading or diverging, of 1-2 different lengths [4]
- 3. Flower subzygomorphic; filaments fasciculate, of 4 different lengths [5]
- 4. Perianth white, sometimes flushed pink abaxially; distal tepals erect; stamens in 2 distinctly subequal sets ... *Z. insularum*
- 4. Perianth rose pink; distal tepals not erect; stamens in 2 slightly subequal sets ... *Z. rosea*
- 5. Leaf blade 5-18 mm wide; tepals white to pink, sometimes dark pink or purple towards the base; anthers 6-13 mm long; stigma exserted beyond anthers ... *Z. robusta*
- 5. Leaf blade 1-4 mm wide; tepals usually yellow and reddish-darkened on the veins, on the lower surface, or towards the tepal base; anthers (2)4-5 mm long; stigma nearly level with anthers ... *Z. tubispatha*
- 6. Tepals yellow ... *Z. citrina*
- 6. Tepals white to pink [7]
- 7. Stamens fasciculate; stigma and filaments included in perianth tube ... *Z. drummondii*
- 7. Stamens diverging; stigma and filaments exserted beyond perianth tube [7]
- 8. Tepals usually bright pink; anthers 13-22 mm long ... *Z. carinata*
- 8. Tepals usually white to light pink or with pink or purple on the lower surface; anthers 3-10 mm long [9]
- 9. Perianth tube 1/3 or more as long as perianth; stigma level with or below the anthers ... *Z. simpsonii*
- 9. Perianth tube 1/3 or less as long as perianth; stigma exserted more than 2 mm beyond anthers [10]
- 10. Perianth tube less than 1/4 as long as perianth, ca. 1/2 as long as filaments and spathe ... *Z. atamasco*
- 10. Perianth tube 1/4 or more as long as perianth, subequal to the filaments and spathe ... *Z. treatiae*



**Zephyranthes atamasco** (L.)Herb.— {AFP} State Threatened.

^ *Zephyranthes candida* (Lindl.)Herb.— {AFP}

\***Zephyranthes carinata** Herb.— {AFP}

\***Zephyranthes citrina** Baker— {AFP}

^ *Zephyranthes drummondii* D.Don— {AFP}

^ *Zephyranthes insularum* H.H.Hume ex Moldenke— {AFP}

\***Zephyranthes robusta** (Herb. ex Sweet)Baker— {AFP}

^ *Zephyranthes rosea* Lindl.— {AFP}

**Zephyranthes simpsonii** Chapm.— {AFP} State Threatened.

**Zephyranthes treatiae** S.Watson— {AFP} State Threatened.

^ *Zephyranthes tubispatha* (L'Hér.)Herb.— {AFP}

## AGAPANTHACEAE

### Agapanthus

^ *Agapanthus praecox* Willd.—Subspecies *orientalis* might be common in cultivation. The name *A. africanus* is used often, but it might be misapplied or involve hybrids. Numerous hybrids appear to be in cultivation. See Snoeijer (2004).

## HYACINTHACEAE {AFP}

1. Leaves petiolate, the blade ovate ... Drimiopsis

1. Leaves sessile, linear, linear-lanceolate, to oblong [2]

2. Leaves mottled ... Ledebouria

2. Leaves green, not mottled [3]

3. Perianth tubular, usually purple to brown, the lobes extremely small ... Muscari

3. Perianth of free tepals or tepals connate with long lobes, white, yellow, orange, pink, blue, to purple [4]

4. Tepals connate basally forming a tube ... Hyacinthus

4. Tepals free ... Ornithogalum

### Drimiopsis

^ *Drimiopsis maculata* Lindl. & Paxton—

### Hyacinthus

^ *Hyacinthus orientalis* L.—

### Ledebouria

^ *Ledebouria socialis* (Baker) Jessop—

### Muscari {AFP}

1. Leaf blades 6-20(30) mm wide; tepals of fertile flowers pale to olive brown, sterile flowers bright violet, shorter than the 6-25 mm ascending pedicels ... *M. comosum*

1. Leaf blades 2-8 mm wide; tepals of fertile and sterile flowers blue, longer than the 1-4(5) mm declined, nodding, or spreading pedicels [2]

2. Leaf blades 3-8 mm wide; racemes of 12-20 flowers; perianth tubes of fertile flowers globose ... *M. botryoides*

2. Leaf blades 2-4(5) mm; racemes of 20-40 flowers; perianth tubes of fertile flowers obovoid to oblong-urceolate or cylindrical ... *M. neglectum*

^Muscari neglectum Guss.— {AFP}

### Ornithogalum

- 1. Tepals orange ... *O. dubium*
- 1. Tepals white ... *O. umbellatum*

^ *Ornithogalum dubium* Houtt.—

^ *Ornithogalum umbellatum* L.—

### AGAVACEAE {AFP}

- 1. Leaves chartaceous to coriaceous, lax [2]
- 1. Leaves fibrous or succulent, stiff [4]
- 2. Leaves petiolate, the blade ovate ... *Hosta*
- 2. Leaves sessile, linear [3]
- 3. Inflorescence arching-stoloniferous ... *Chlorophytum comosum*
- 3. Inflorescence erect ... *Schoenolirion*
- 4. Leaf tip with a conspicuous nigrescent, hardened terminal spine, distinctly unlike the rest of the blade ... *Agave*
- 4. Leaf tip without a hardened terminal spine, the tip typically relatively similar to the rest of the blade, sometimes withered or necrotic [5]
- 5. Leaf margin with fraying filaments or fibers ... *Yucca*
- 5. Leaf margin without filaments [6]
- 6. Leaves few, usually <10; inflorescence spicate ... *Agave virginica*
- 6. Leaves numerous, >10; inflorescence paniculate [7]
- 7. Leaves entire or with fine or stout marginal prickles; inflorescence sometimes bulbiferous, much longer than the exceeding the leafy portion of stem; ovary inferior ... *Furcraea*
- 7. Leaves entire to very finely denticulate; inflorescence not bulbiferous, shorter to not much longer than the leafy portion of stem; ovary superior ... *Yucca*

### Agave {AFP}

- 1. Leaf apex flexible, membranaceous ... *A. virginica*
- 1. Leaf apex with a hardened, rigid terminal spine [2]
- 2. Terminal spine decurrent (sclerified spine tissue extending down margins of leaf) [3]
- 2. Terminal spine abrupt, truncate at the base [4]
- 3. Larger leaves with stout, hardened marginal prickles throughout the margin, the larger prickles >2 mm long and often sitting on the tuberculate margins ... *A. americana*
- 3. Larger leaves entire or with weak marginal prickles to ca. 1 mm long only at the base of the leaves, the margin mostly straight ... *A. weberi*
- 4. Most or all leaves recurved ... *A. desmettiana*
- 4. Most leaves, and especially young ones, held straight (older leaves and those in shade sometimes weak and reflexed) [5]
- 5. Leaves entire or with occasional sporadic prickles or marginal prickles weak, usually < 3 mm long and < 4 mm wide ... *A. sisalana*
- 5. Leaves with marginal hardened prickles throughout; marginal prickles of larger leaves fairly robust, usually > 3 mm long, to 8 mm wide [6]
- 6. Leaves variegated or olive-green to blue-green, sometimes glaucous; flowering usually Jun-Aug; anthers 17.2-27.5 mm long; ovary 16.7-29 mm long ... *A. angustifolia*

6. Leaves virid, bright to light green and not glaucous (or glaucous only at the leaf base); flowering Jan-Feb; anthers 18-24 mm long; ovary 25-40 mm long ... *A. decipiens*

^ *Agave americana* L.— {AFP}

\* ***Agave angustifolia*** Haw.— {AFP}

^ *Agave attenuata* Salm-Dyck—

***Agave decipiens*** Baker— {AFP} Endemic.

^ *Agave desmettiana* Jacobi— {AFP}

^ *Agave lophantha* Schiede— Later synonym is *A. univittata* (Thiede et al. 2021).

^ *Agave salmiana* Otto ex Salm-Dyck—

\* ***Agave sisalana*** Perrine— {AFP}

***Agave virginica*** L.— {AFP}

\* ***Agave weberi*** F.Cels ex J.Poiss.— {AFP} State Endangered.

### Chlorophytum {AFP}

^ *Chlorophytum comosum* (Thunb.) Jacques— {AFP}

### Furcraea {AFP}

1. Leaves ensiform, sword-shaped [2]

1. Leaves linear-attenuate [3]

2. Trunk to 0.3 m tall; leaf upper surface and usually lower surface smooth, margins entire or with fine prickles near the base or throughout ... *F. foetida*

2. Trunk to 5 m tall; leaf upper and lower surface scabrid, margins with stout prickles throughout ... *F. selloana*

3. Trunk to 1 m tall; marginal prickles singular, yellow to brownish; inflorescence branched in upper 3/4 ... *F. hexapetala*

3. Trunk to 0.3 m tall; marginal prickles often double or bifurcate, pinkish or reddish; inflorescence branched in upper 2/3 ... *F. tuberosa*

\* ***Furcraea foetida*** (L.) Haw.— {AFP}

\* ***Furcraea selloana*** K.Koch— {AFP}

### Schoenolirion {AFP}

1. Leaves without fleshy bases, arising from tops of vertical rootstocks, withering to persistent fibers; inflorescence unbranched or with 2-3(6) branches; tepals and filaments white or greenish white ... *S. albiflorum*

1. Leaves with fleshy bases, arising from bulbs at tops of vertical rootstocks, not withering to persistent fibers; inflorescence unbranched (rarely branched); tepals and filaments yellow ... *S. croceum*

***Schoenolirion albiflorum*** (Raf.) R.R.Gates— {AFP}

***Schoenolirion croceum*** (Michx.) A.W.Wood— {AFP} State Endangered.

### Yucca {AFP}

1. Acaulescent aboveground (occasionally underground stem revealed by erosion), leaves all basal; leaves with marginal fibers; fruits dehiscent, erect [2]

1. Caulescent (mature plants), leaves along an elongate stem, vegetative stem of mature plants at least 0.2 m tall; leaves without marginal fibers or sometimes with marginal fibers (in *Y. gloriosa*); fruits indehiscent, pendent or occasionally erect [4]
2. Leaves broadly involute, especially at the tip, the marginal fibers lax, to 20 cm long, overlapping and attached to preceding fibers; inflorescence branches strongly ascending to strict; sepals much narrower than petals; stamens shorter than the pistil; styles erect, slightly narrower than the ovary; fruits sometimes constricted medially ... *Y. filamentosa*
2. Leaves plane, the marginal fibers stiff, rarely exceeding 4 cm, shorter than the distance between the bases of adjacent fibers; inflorescence branches divergent to spreading; sepals slightly narrower than petals; stamens longer than the pistil; styles diverging, much narrower than the ovary; fruits not constricted medially [3]
3. Inflorescence glabrous ... *Y. flaccida* var. *flaccida*
3. Inflorescence pubescent ... *Y. flaccida* var. *smalliana*
4. Stems (excluding inflorescence) 4-10+ m tall, proximal and basal portions of stem naked and devoid of leaves, distally stems usually with numerous green deflexed leaves and numerous old non-green deflexed leaves; larger leaves 5-10 cm wide, >0.5 m long, margins denticulate, apex soft, pliable; cultivated only ... *Y. gigantea*
4. Stems (excluding inflorescence) usually 0.3-4 m tall (very rarely to 7 m), stem usually completely covered in leaves including deflexed old non-green persistent leaves (occasionally stem devoid of leaves on tall plants); larger leaves 2-5(6) cm wide, <0.7 m long, rarely to 1 m long, margins entire to denticulate, apex with a stiff spine; native and cultivated [5]
5. Stems with leaves loosely imbricate, the dilated basal part of the leaf that attaches to the stem usually plainly visible; leaves dark to light green, occasionally grayish or bluish green, stiffly spreading (infrequently laxly recurved), margin sharply denticulate, rarely subentire, without marginal fibers; tepals 3-4 cm long; filaments 1.8-2.2 cm long; anthers 2-3 mm long; style 4-7 mm long; fruits fleshy and succulent ... *Y. aloifolia*
5. Stems with leaves tightly imbricate, the dilated basal part of the leaf that attaches to the stem usually not plainly visible; leaves green to blue-green or glaucous, stiff to lax, margin entire to roughened-minutely denticulate, sometimes with marginal fibers; tepals 4-5 cm long; filaments 2.2-2.8 cm long; anthers 3-4 mm long; style 6-11 mm long; fruits dry and spongy or leathery [6]
6. Leaf blade mostly stiff, rigid; fruit pendent, 5.5-8 cm long ... *Y. gloriosa* var. *gloriosa*
6. Leaf blade mostly pliable; fruit mostly erect, 2.5-4.5 cm long ... *Y. gloriosa* var. *tristis*

***Yucca aloifolia*** L.— {AFP}

***Yucca filamentosa*** L.— {AFP}

***Yucca flaccida*** Haw. var. ***flaccida***—

***Yucca flaccida*** Haw. var. ***smalliana*** (Fernald)H.E.Ahles—

^ *Yucca gigantea* Lem.— Smith & Figueiredo (2016) recognized *Y. guatemalensis* as a smaller form with the base of trunk enlarged and leaves 0.5-0.9(1) m long, 5-8 cm wide. (syn. *Y. guatemalensis*).

***Yucca gloriosa*** L. var. ***gloriosa***— {AFP} Probably native only to Nassau Co. in Florida. Forms in the panhandle and elsewhere are probably introduced. Ward (2004, in *Palmetto* 22:6-8) "It is well, perhaps, that *Yucca gloriosa* in the panhandle is cleraly of cultivated origin." State Endangered.

^ *Yucca gloriosa* L. var. *tristis* Carrière— {AFP} State Endangered.

**ASPARAGACEAE** {AFP}

## Asparagus {AFP}

1. Cladodes (leaf-like structure) linear or oblong, 0.8-2 mm wide [2]
1. Cladodes (leaf-like structure) filiform, 0.1-0.4 mm wide [3]
2. Stems climbing to erect to 1-7 m long, the branchlets typically 4 cm or longer; cladodes (5)10-40 mm long; fruit 5-7 mm wide with 1-3 seeds ... *A. aethiopicus*
2. Stems erect to weakly decumbent to 0.6 m long, the branchlets typically 3.5 cm or shorter, the cladodes 5-15 mm long; fruit ca. 5 mm wide with one seed ... *A. densiflorus*
3. Primary branches ascending to horizontal, the cladodes generally not plane; cladodes (4)10-15(30) mm long; some flowers unisexual; fruit red ... *A. officinalis*
3. Primary branches horizontal with cladodes nearly plane; cladodes 2-5(10) mm long; flowers bisexual; fruit purple-black ... *A. setaceus*

\**Asparagus aethiopicus* L.— {AFP}

^ *Asparagus densiflorus* (Kunth) Jessop—

^ *Asparagus officinalis* L.— {AFP}

\**Asparagus setaceus* (Kunth) Jessop— {AFP}

## RUSCACEAE {AFP}

1. Shrubs or trees; cultivated only [2]
1. Herbs; native, naturalized, and cultivated [4]
2. Trunk swollen at the base ... *Beaucarnea recurvata*
2. Trunk not swollen or only scarcely so at the base [3]
3. Rhizomatous, roots lacking secondary tissue; leaves often pinkish, reddish, or purplish; flower subtended by 1 bract and 1 bifid bracteole; ovary with 2-16 ovules per locule; fruit with several small seeds (Laxmanniaceae) ... *Cordyline fruticosa*
3. Lacking rhizomes, roots with secondary tissue; leaves usually green or variegated green and yellow; flower subtended by 1 bract and 0-1 non-bifid bracteoles; ovary with 1 ovule per locule; fruit with 1-3 large seeds ... *Dracaena*
4. Leaves cauline (at least larger ones) [5]
4. Leaves basal [6]
5. Flowers in a terminal panicle; fruit red, speckled or spotted when immature ... *Maianthemum racemosum*
5. Flowers and fruits axillary; fruit glaucous blue to black, rarely reddish, not speckled or spotted when immature ... *Polygonatum biflorum*
6. Leaves 5-15 cm wide [7]
6. Leaves 0.2-1.5(2.3) cm wide [8]
7. Leaves chartaceous to subcoriaceous, easily torn ... *Aspidistra elatior*
7. Leaves leathery, not easily torn (*Sansevieria*) ... *Dracaena*
8. Roots without tuberous swellings; leaves coriaceous ... *Nolina*
8. Roots sometimes with tuberous swellings; leaves chartaceous [9]
9. Flowers erect, terminal at the tip of a strict pedicel, corollas cupulate to rotate; ovaries superior (flowers hypogynous); anthers free, oblong in outline, apically obtuse, dehiscing apically and appearing poricidal, filaments longer than or as long as anthers; stigmas entire; fruits blackish ... *Liriope*
9. Flowers nodding, on a recurving pedicel or floral tube, corollas mostly campanulate; ovaries inferior to semi-inferior (flowers epigynous to perigynous); anthers more or less connate in a column, narrowly lanceolate in outline, apically narrowly attenuate-acute, dehiscing

longitudinally, filaments much shorter than the anthers (anthers subsessile); stigmas 3-lobed; fruits commonly blue, sometimes blackish ... *Ophiopogon japonicus*

### **Aspidistra** {AFP}

^ *Aspidistra elatior* Blume— {AFP}

### **Dracaena** {AFP}

1. Erect shrubs or trees, leaves cauline; cultivated only ... Key A

1. Rhizomatous herbs, leaves all basal (formerly *Sansevieria*); cultivated and naturalized ... Key B

#### Key A

1. Leaf blades strongly narrowed proximally and generally petiolate, the petiole ascending and the blade spreading to laxly recurved (if the leaf subsessile, then the base still ascending) [2]

1. Leaves sessile to subsessile, spreading to recurved (the base of the blade generally oriented similar to the rest of the blade or only the extreme sub-clasping base of the leaf ascending) [3]

2. Leaf blade base rounded and abruptly contracted to the petiole ... *Dracaena aubryana*

2. Leaf blade cuneate and the petiole rather flared at the apex and somewhat confluent with the blade [3]

3. Stems remaining green for much of their length; leaf blade 2-4.5 times longer than wide, the blade often distinct from the petiole (lucky bamboo) ... *Dracaena sanderiana*

3. Stems often quickly developing bark and becoming brownish or grayish; leaf blades 4.5-12 times longer than wide, the blade often rather indistinct from the petiole [4]

4. Leaves not densely congested, distinctly separated along the stem ... *Dracaena fragrans* var. *fragrans*

4. Leaves densely congested, pseudowhorled ... *Dracaena fragrans* var. *compacta*

5. Leafy part of stem slender, to 1-2.5 mm wide; leaf blade generally ovate to obovate, sometimes spotted-variegate ... *Dracaena surculosa*

5. Leafy part of stem robust, 2.5-8 mm wide; leaf blade generally linear to lanceolate, sometimes variegated in lines [6]

6. Arborescent, forming stout, large trunks, often 0.6-2 m wide, branches usually in distal part of plant and leaves all in the apex of the plant; leaves stiff ... *Dracaena draco*

6. Shrubby, trunk weak and usually <0.5 m wide, usually with multiple basal stems and leaves distributed not all in the apical portion of plant; leaves stiff to lax [7]

7. Leaves generally broadly lanceolate ... *Dracaena reflexa* var. *reflexa*

7. Leaves generally linear-lanceolate [8]

8. Leaves mostly lax, undulate or twisted or recurving ... *Dracaena angustifolia*

8. Leaves mostly rather stiff and flat or plane (syn. *Dracaena marginata*) ... *Dracaena reflexa* var. *angustifolia*

#### Key B

1. Leaves cylindrical ... *D. angolensis*

1. Leaves flattened [2]

2. Leaf blade with a marginal band throughout, discoloured and distinct from rest of blade, the marginal band ca. 0.5 mm wide or less and usually pale, stramineous, or orangish (or sometimes green), the band sometimes fraying; leaf blade mostly green and pale green ... *D. hyacinthoides*

2. Leaf blade margin without a distinct marginal band throughout, or the band indistinct, or much larger than 0.5 mm wide; leaf blade often with whitish green or yellowish coloration strongly contrasting with the green colors ... *D. trifasciata*

^ *Dracaena angolensis* (Welw. ex Carrière) Byng & Christenh.— {AFP}

^ *Dracaena draco* (L.) L.—

^ *Dracaena fragrans* (L.) Ker Gawl.—

\* *Dracaena hyacinthoides* (L.) Mabb.— {AFP}

^ *Dracaena reflexa* Lam.—

^ *Dracaena sanderiana* Mast.—

^ *Dracaena surculosa* Lindl.—

^ *Dracaena trifasciata* (Prain) Mabb.— {AFP}

## Liriope {AFP}

1. Plants caespitose and clumping, without stolons; leaves (5)8-16(23) mm wide, (15)30-70 cm long; inflorescence subequal to longer than the leaves, rarely shorter; peduncles 15-30 cm long; rachis 5-11 cm long, with 25-80 flower fascicles; outer bracts linear, 0.5 mm wide near apex, with abrupt, hyaline, ovate, wings borne basally, to 2 mm wide; style 1.5-2.5 mm long, subequal to shorter than stamens ... *L. muscari*

1. Plants colonial, from slender stolons; leaves (2)3-8(10) mm wide, (14)18-60 cm long; inflorescence mostly shorter than the leaves; peduncles 3.5-15 cm long; rachis 1-4 cm long, with 4-15 flower fascicles; outer bracts narrowly triangular with hyaline wings, 0.7 to 1 mm wide near apex, gradually expanding to 4 mm wide basally; style ca. 3 mm long, slightly exceeding stamens ... *L. spicata*

^ *Liriope muscari* (Decne.) L.H. Bailey— {AFP}

^ *Liriope spicata* Lour.— {AFP}

## Lomandra

^ *Lomandra longifolia* Labill.—

## Maianthemum {AFP}

*Maianthemum racemosum* (L.) Link— {AFP}

## Nolina {AFP}

1. Leaf blades 2-4(5) mm wide, 45-85 cm long; with sunken stomata in pits forming gray to white bands alternating with 7-14 longitudinal collenchymatous bands; inflorescence racemose; fruit usually asymmetrical, unwinged, 4-4.5 mm long ... *N. atopocarpa*

1. Leaf blades 5-9(11) mm wide, 70-100 cm long, with sunken stomata at the bottom of longitudinal papillate grooves (fine white lines) alternating with 20-31 longitudinal collenchymatous bands; inflorescence paniculate; fruit triangular and appearing winged, mostly symmetrical, 7-9 mm long ... *N. brittoniana*

*Nolina atopocarpa* Bartlett— {AFP} Endemic. State Threatened.

*Nolina brittoniana* Nash— {AFP} Endemic. Federally Endangered. State Endangered.

## Ophiopogon {AFP}

^ *Ophiopogon japonicus* (Thunb.) Ker Gawl.— {AFP}

## Polygonatum {AFP}

*Polygonatum biflorum* (Walter) Elliott— {AFP}

## LILIALES

### ALSTROEMERIACEAE {AFP}

#### Alstroemeria {AFP}

\**Alstroemeria psittacina* Lehm.— {AFP}

### COLCHICACEAE {AFP}

1. With lobed corms; leaf blade apex terminated by a tendril; tepals strongly reflexed, usually partly or wholly orange to red, usually strongly undulate, 4-8 cm long ... *Gloriosa superba*

1. With short or elongate rhizomes; leaf blade apex without a tendril; tepals strict to distally spreading, not noticeably undulate, whitish to pale yellow, 1-4 cm long ... *Uvularia*

#### *Gloriosa* {AFP}

^ *Gloriosa superba* L.— {AFP}

#### *Uvularia* {AFP}

1. Stems terete; leaf blades perfoliate (at least at mid-stem), margins smooth; tepals densely papillose adaxially; fruit obovoid, the apex truncate ... *U. perfoliata*

1. Stems angled distally; leaf blades sessile, margins minutely papillose-denticulate; tepals smooth adaxially; fruit generally ellipsoid, the apex acute [2]

2. Peduncles bearing 1, ovate, leafy bract directly subtending the flower; tepal apex prolonged-acute to acuminate; ovary and capsule sessile or subsessile ... *U. floridana*

2. Peduncles ebracteate; tepal apex rounded to short-acute; ovary and capsule stipitate ... *U. sessilifolia*

*Uvularia floridana* Chapm.— {AFP} State Endangered.

*Uvularia perfoliata* L.— {AFP}

*Uvularia sessilifolia* L.— {AFP}

### MELANTHIACEAE {AFP}

1. Scape with one whorl of large foliaceous bracts subtending the flowers (the rhizome has scale-like leaves or cataphylls); fruit a berry ... *Trillium*

1. Leaves basal or cauline, not in one whorl; fruit a capsule [2]

2. Leaves 5-20 cm long, 4.5(6) cm wide, more or less petiolate with an elliptic, ovate, obovate, to oblanceolate blade; anthers 2-locular ... *Chamaelirium luteum*

2. Leaves 20-70 cm long, 0.5-10 cm wide, linear and sessile, or petiolate with an elliptic to lanceolate blade 5-10 cm wide; anthers 1-locular [3]

3. Inflorescence a spike of subsessile to sessile flowers, pedicel 0-2 mm long ... *Schoenocaulon dubium*

3. Inflorescence a raceme or panicle of pedicellate flowers, pedicel 2-20 mm long [4]

4. Inflorescence floccose-puberulent; seeds winged ... *Veratrum*

4. Inflorescence rachis glabrous to pubescent; seeds not winged, sometimes angled [4]

5. Rhizomatous; tepals with conspicuous basal glands ... *Zigadenus glaberrimus*

5. Rhizomes weak or absent, plant base a bulb; tepals eglandular or the gland obscure [6]

6. Inflorescence racemose, the bracts subtending flowers 1-2 times as long as wide; tepals glands absent; leaf apex rounded, obtuse, to abruptly acute; fruit about as long as wide ...

*Amianthium muscaetoxicum*



6. Inflorescence racemose or paniculate, the bracts subtending flowers 2-5 times as long as wide; tepals gland absent or obscure; leaf apex mostly attenuate; fruit longer than wide ...  
*Stenanthium*

### **Amianthium** {AFP}

***Amianthium muscaetoxicum*** (Walter) A.Gray— {AFP}

### **Chamaelirium** {AFP}

***Chamaelirium luteum*** (L.)A.Gray— {AFP}

### **Schoenocaulon** {AFP}

***Schoenocaulon dubium*** (Michx.)Small— {AFP} Endemic.

### **Stenanthium** {AFP}

1. Inflorescence diffuse, paniculate; pedicel 4-6 mm long ... *S. gramineum*

1. Inflorescence compact and racemose, or with few basal racemose branches; pedicel 10-20 mm long [2]

2. Plants 30-80(100) cm tall; largest leaves 3-5(7) mm wide; inflorescence unbranched ... *S. densum*

2. Plants 70-155 cm tall; largest leaves 4-10(12) mm wide; inflorescence branched towards the base ... *S. texanum*

***Stenanthium densum*** (Desr.)Zomlefer & Judd— {AFP}

***Stenanthium gramineum*** (KerGawl.)Morong— {AFP} State Endangered.

***Stenanthium texanum*** (Bush)Sorrie & Weakley— {AFP}

**Trillium** {AFP} Technically, the aboveground, photosynthetic leafy tissues have been termed bracts of a flowering scape, and the true leaves being the scales of the rhizome.

1. Leaf-like bracts 2.5-3.5 times as long as wide; sepals spreading to reflexed with the tips hanging below the bracts; petals distinctly clawed, the claw purplish and darker in color than the blade, the blade yellow to pale purplish; filaments and antherse 4-6 mm long, subequal ... *T. lancifolium*

1. Leaf-like bracts 0.8-2.5 times as long as wide; sepals spreading to reflexed with the tips usually not hanging below the bracts; petals without a claw or slightly clawed, the petal generally uniformly colored, greenish to dark purplish; filaments 1-3 mm long, much shorter than the anthers, the anthers 8-16 mm long [2]

2. Leaf-like bracts usually widest near the middle; anther dehiscence introrse; petals (3)4-5(7.5) times longer than wide; ovary weakly 3-angled to smooth (rarely very obscurely 6-angled) ... *T. maculatum*

2. Leaf-like bracts widest below the middle; anther dehiscence latrorse, occasionally introrse basally with age; petals 2-5(6) times longer than wide; ovary strongly 6-angled [3]

3. Scape 17-44 cm long, 2.5-3 times longer than leaf-like bracts; bract tips at anthesis held far above the ground; petals 2-3 times longer than wide ... *T. decipiens*

3. Scape 8-20 cm long, 1-2 times longer than leaf-like bracts; bract tips at anthesis typically nearly touching the ground or nearly so; petals (2.5)3-5(6) times longer than wide ... *T. underwoodii*

***Trillium decipiens*** J.D.Freeman— {AFP}

***Trillium lancifolium*** Raf.— {AFP} State Endangered.

***Trillium maculatum*** Raf.— {AFP}

***Trillium underwoodii*** Small— {AFP}

### **Veratrum** {AFP}

1. Leaf blade linear; tepals clawed, the glands yellow-green and nectariferous ... *V. virginicum*

1. Leaf blade elliptic to lanceolate; tepals not clawed, the glands dark purple to blackish and not nectariferous ... *V. woodii*

***Veratrum virginicum*** (L.)W.T.Aiton— {AFP}

***Veratrum woodii*** J.W.Robbins ex A.W.Wood— {AFP} State Endangered.

### **Zigadenus** {AFP}

***Zigadenus glaberrimus*** Michx.— {AFP}

### **LILIACEAE** {AFP}

1. Leaves 1-2, basal, often variegated ... *Erythronium*

1. Leaves >2, cauline, usually uniformly green [2]

2. Leaves in 2 whorls; tepals yellow-green to green, 0.6-1 cm long ... *Medeola*

2. Leaves alternate, or with >2 whorls; tepals or petals 3-25 cm long [3]

3. Tepals with nectaries at base ... *Lilium*

3. Tepals without nectaries at base ... *Tulipa*

### **Erythronium** {AFP}

***Erythronium umbilicatum*** C.Parks & Hardin— {AFP} State Endangered.

### **Lilium** {AFP}

1. Leaves all alternate, to 20 cm long, to 1.5 cm wide; tepals 13-25 cm long, white, sometimes suffused with purple colors, the tepals overlapping and forming a closed tube for most of their length [2]

1. Leaves all alternate, or some or all whorled, or all whorled, to 15 cm long, 3.5 cm wide; tepals to 12 cm long, pinkish, yellow, orange, to reddish, not white, the tepals not overlapping or only overlapping at the very base [4]

2. Not rhizomatous; leaves to 15 mm wide; tepals 13-18 cm long, inner surface glabrous at base ... *L. longiflorum*

2. Rhizomatous; leaves to 10 mm wide; tepals 13-25 cm long, inner surface papillose at the base [4]

3. Stem often scabridulous; leaves numerous and crowded at base of stem, 3-10 mm wide; tepals 13-20 cm long, recurved at the tip, flower tube dilated from the middle to the apex outer ones often suffused with purple especially along midvein ... *L. formosanum*

3. Stem glabrous; leaves scattered along the stem, 2-6 mm wide; flower tube subcylindric, slightly dilated at apex; tepals 18-25 cm long, spreading at the tip ... *L. philippinense*

4. Not rhizomatous; leaves alternate, not papillose; pedicel erect to slightly curved; anthers yellow to orange-yellow ... *L. catesbaei*

4. Rhizomatous or not; leaves alternate or some or all whorled, papillose or not on the margins and lower surface veins; pedicel recurved; anthers orange-brown to brown [5]

5. Not rhizomatous; leaves distinctly succulent or fleshy, oblanceolate to obovate, the lower surface strongly pale; flowers strongly fragrant ... *L. michauxii*
5. Rhizomatous; leaves not fleshy, elliptic to lanceolate or oblanceolate (infrequently obovate), the lower surface mildly lighter green; flowers odorless or mildly fragrant [6]
6. Rhizomes 9-18 cm long, with 3-4 annual bulbs, scaleless sections between bulbs 2.7-5.4 cm; bulb-scale leaves or their abscission scars present; leaves usually papillose on the margins and lower surface veins; inflorescences with 1-4 flowers; dominant color of tepals pale yellow to orange ... *L. iridollae*
6. Rhizomes 5-10.5 cm long, with 2(3) annual bulbs, scaleless sections between bulbs 0.3-3.8(4.6) cm; bulb-scale leaves or their abscission scars absent; leaves not papillose on the margins and lower surface veins; inflorescences with 1-22 flowers; dominant color of tepals orange to red ... *L. superbum*

*Lilium catesbaei* Walter— {AFP} State Threatened.

\**Lilium formosanum* A.Wallace—

*Lilium iridollae* M.K.Henry— {AFP} State Endangered.

\**Lilium longiflorum* Thunb.— {AFP}

*Lilium michauxii* Poir.— {AFP} State Endangered.

\**Lilium philippinense* Baker— {AFP}

*Lilium superbum* L.— {AFP} State Endangered.

**Medeola** {AFP}

*Medeola virginiana* L.— {AFP} State Endangered.

**SMILACACEAE** {AFP}

**Smilax** {AFP}

1. Stems annual, herbaceous, and lacking prickles; petioles 1-9 cm long (shorter on youngest part of stems); peduncle 3.5-14 cm long [2]
1. Stems perennial, becoming woody, with prickles (especially at the base of stems) or without prickles; petioles of mature leaves usually 0.1-2 cm long (longer, to 3 cm, at the very base of the stems); peduncle usually <4.5 cm long [3]
2. Plant erect, usually <1 m tall; tendrils absent or few and short ... *S. ecirrhata*
2. Plants climbing, usually >1m tall; tendrils numerous ... *S. lasioneuron*
3. Plants usually <1 m tall; stems densely pubescent; leaf blades densely pubescent below ... *S. pumila*
3. Plants usually >1 m tall; stems glabrous; leaf blades glabrous [4]
4. Leaf blades strongly glaucous below ... *S. glauca*
4. Leaf blades green to pale green below, not glaucous or only slightly so [5]
5. Midvein of the leaf blade underside pronounced, with the lateral veins much less pronounced to somewhat obscure and the reticulate venation obscure ... *S. laurifolia*
5. Midvein and lateral veins of the leaf blade underside usually relatively similarly pronounced, at least towards the base, the reticulate venation conspicuous [6]
6. Prickles at the base of the stem dense and bristly; leaf blade margin with numerous fine, minute prickles, especially toward the basal margin ... *S. hispida*
6. Prickles well-spaced and broad-based, not dense and bristly; leaf blade margin entire or with few coriaceous prickles [7]
7. Leaf blade margin with a light-colored cartilaginously thickened band or vein, the margin with or without prickles; peduncle 0.2-6 cm long [8]

7. Leaf blade margin thin or not strongly thickened into a light-colored band, the margin without prickles; peduncle 0.5-2.0 cm long [10]
8. Inner pair of basal veins of the leaf blade distinct at the base and blending in with the pronounced reticulate venation towards the apex; peduncle 1.5-6 cm long; (leaf blade sometimes variegated, sometimes with prickles, usually widest below the middle; fertile, leafy portion of stem often with straight prickles to ca. 5 mm; berries lustrous to slightly glaucous) ...  
S. bona-nox
8. Inner pair of basal veins of the mature leaf blade distinct from the base to the apex, distinct and more pronounced than the reticulate venation; peduncle to 0.2-1.6 cm long; (leaf blade either usually widest below the middle, without prickles, and sometimes variegated (S. auriculata) or usually widest near the middle, sometimes with prickles, and not variegated (S. havenensis); fertile, leafy portion of stem usually without prickles (S. auriculata) or often with slightly curved prickles to ca. 2 mm long (S. havenensis); berries glaucous or lustrous) [9]
9. Prickles rare on distal fertile and leafy portions of the stem, more common at the stem base; leaf blade often widest below the middle, infrequently widest at or above the middle, occasionally variegated, upper surface with the veins faintly impressed, the margin and midvein without prickles; fruits round, glaucous or lustrous ... S. auriculata
9. Prickles common on distal fertile and leafy portions of the stem, also common at the stem base; leaf blade widest at the middle, not variegated, upper surface smooth, the margin and midvein below with or without prickles; fruits sometimes pointed at the apex, not glaucous ... S. havenensis
10. Distal leaf blades with the base acute, the blade margin gradually reduced into the petiole ...  
S. smallii
10. Distal leaf blades with the base truncate, broadly rounded, or cordate, the blade margin sharply reduced into the petiole [11]
11. Leaf blade usually ovate to broadly ovate; mature fruit bluish black ... S. rotundifolia
11. Leaf blade ovate-lanceolate to broadly ovate; mature fruit orange to red ... S. walteri

***Smilax auriculata*** Walter— {AFP}

***Smilax bona-nox*** L.— {AFP}

***Smilax ecirrhata*** S.Watson— {AFP}

***Smilax glauca*** Walter— {AFP}

***Smilax havenensis*** Jacq.— {AFP} State Threatened.

***Smilax hispida*** Muhl. ex Torr.— {AFP} The earlier name *Smilax tamnoides* is sometimes preferred for this species (Fernald 1944; FNA, vol. 26), while *S. hispida* is commonly preferred (Clausen 1951; Wilbur 2003). The thorns depicted in the [type illustration](#) of *S. tamnoides* are anomalous for this species.

***Smilax lasioneuron*** Hook.— {AFP}

***Smilax laurifolia*** L.— {AFP}

***Smilax pumila*** Walter— {AFP}

***Smilax rotundifolia*** L.— {AFP}

***Smilax smallii*** Morong— {AFP} The earlier name *S. maritima* is sometimes promoted. Although it is evident that the description of *S. maritima* refers to *S. auriculata*, in synonymy is cited *S. ovata*, nom. illeg. ([Wood 1861](#)), a name interpreted as a synonym of *S. smallii* (see Art. 6.13).

***Smilax walteri*** Pursh— {AFP}

## ‘COMMELINIDS’ POALES

## BROMELIACEAE {AFP}

1. Leaf unarmed, entire (mostly native species, a few non-native) [2]
1. Leaf margin with prickles, sometimes weak, minute, or sparse (all non-native, some species with entire leaves) [6]
2. Leaves usually grayish, densely covered in minute scales (mostly native spp.) ... Tillandsia
2. Leaves usually green, glabrous or with few microscopic scales, or partly whitish and covered with chalky powder [3]
3. Inflorescence usually strongly distichous or secund (non-native spp.) [4]
3. Inflorescence usually spirally arranged, or flowers few or solitary (native spp.) [5]
4. Flowers spaced or somewhat densely packed, most or at least some subtending bracts nearly completely free or only partially overlapping adjacent bracts ... Vriesea
4. Flowers very densely packed, most subtending bracts overlapping adjacent ones for half or more of their length ... Wallisia
5. Floral bracts inconspicuous, reduced, much smaller than the flowers or fruits; seed appendage apical, folded at maturity ... Catopsis
5. Floral bracts conspicuous, as large as the flowers and fruits or nearly so; seed appendage basal, straight at maturity ... Guzmania
6. Leaves narrow, grass-like ... Pitcairnia
6. Leaves broad, relatively stiff [7]
7. Inflorescence bracts inconspicuous, smaller than the flowers; ovary superior; fruit a capsule; seeds winged ... Dyckia
7. Inflorescence bracts usually conspicuous and larger than the flowers; ovary inferior; fruit fleshy or leathery, a berry or compound; seeds without an appendage [8]
8. Petals naked [9]
8. Petals appendaged; inflorescence sessile or pedunculate [10]
9. Inflorescence sessile or pedunculate, usually not accumulating water; filaments forming a tube and joined to the center of the petals ... Bromelia
9. Inflorescence sessile, embedded in the leaf rosette, sometimes accumulating standing water; filaments not forming a tube, the petals free ... Neoregelia
10. Inflorescence with an apical leaf rosette which may form a new plant; ovaries fused with each other and with the fleshy bracts to form a compound fruit ... Ananas
10. Inflorescence lacking an apical leaf rosette; ovaries distinct [11]
11. Flowers pedicellate; sepals connate ... Portea
11. Flowers sessile or pedicellate; sepals free [12]
12. Inflorescence simple or compound; sepals mucronate or pungent, or if blunt then small and the ovules long-caudate; petals mostly erect, spreading, to weakly recurved ... Aechmea
12. Inflorescence simple; sepals unarmed or soft-apiculate; petals erect to recurved [13]
13. Flowers sessile or pedicellate; petals often strongly recurved and coiled or zygomorphic ... Billbergia
13. Flowers sessile; petals mostly erect, spreading, to weakly recurved ... Quesnella

### Aechmea

- ^ *Aechmea blanchetiana* (Baker) L.B.Sm.—
- ^ *Aechmea bracteata* (Sw.) Griseb.—
- ^ *Aechmea chantinii* (Carrière) Baker—
- ^ *Aechmea distichantha* Lem.—
- ^ *Aechmea fasciata* (Lindl.) Baker—
- ^ *Aechmea gamosepala* Wittm.—

## Alcantarea

^ *Alcantarea imperialis* (Carrière) Harms.—

## Ananas

^ *Ananas comosus* (L.) Merr.—

## Billbergia {AFP}

^ *Billbergia nutans* H. Wendl.—

^ *Billbergia pyramidalis* (Sims) Lindl.— {AFP}

## Bromelia {AFP}

^ *Bromelia pinguin* L.— {AFP}

## Catopsis {AFP}

1. Leaf not chalky at the base, the tip attenuate; inflorescence with 5-20 racemes; floral bracts 4-7 mm long ... *C. floribunda*

1. Leaf often conspicuously chalky at the base (occasionally not apparent or sloughed off), the tip sharply acute-subulate; inflorescence with 1-6 racemes (rarely to 11); floral bracts 6-15 mm long [2]

2. Leaves ascending to erect-appressed, mostly >15 cm long on mature rosettes; floral bracts 6-10 mm long; flower diurnal; corolla white ... *C. berteroniana*

2. Leaves ascending to spreading, mostly <15 cm long on mature rosettes; floral bracts 12-15 mm long; flower nocturnal; corolla yellow ... *C. nutans*

***Catopsis berteroniana*** (Schult. & Schult.f.) Mez— {AFP} State Endangered.

***Catopsis floribunda*** L.B.Sm.— {AFP} State Endangered.

***Catopsis nutans*** (Sw.) Griseb.— {AFP} State Endangered.

## Dyckia {AFP}

^ *Dyckia brevifolia* Baker— {AFP}

## Guzmania {AFP}

^ *Guzmania lingulata*—

***Guzmania monostachia*** (L.) Rusby ex Mez— {AFP} State Endangered.

## Neoregelia

^ *Neoregelia carolinae* (Beer) L.B.Sm.—

^ *Neoregelia spectabilis* (Antoine) L.B.Sm.—

## Portea

^ *Portea petropolitana* (Wawra) Mez—

## Quesnelia

^ *Quesnelia testudo* Lindm.—

## Tillandsia {AFP}

1. Plant forming pendent festoons to 3 m long, individual stems or shoots tangled and difficult to discern, roots unapparent; inflorescence sessile with 1 flower; petals yellow-green ... *T. usneoides*

1. Plant erect to spreading, sometimes angled downwards, 0.03-2 m long, solitary or cespitose, individual stems or shoots apparent, roots apparent; inflorescence exserted, with 1-200 flowers; petals white to violet [2]

2. Longest leaves <13 cm long [3]

2. Longest leaves >13 cm long [6]

3. Stem with appressed leaf base 2-4 mm wide; leaves 2-ranked, the basal leaves 2-3(-4) mm wide ... *T. recurvata*

3. Stem with appressed leaf bases 10-40 mm wide; leaves rosulate, the basal leaves 5-25 mm wide [4]

4. Leaves flat or with the margins slightly involute, the margins distant and only touching at the apex, densely overlapping in a tight rosette; base of the flowers embedded in the rosette without visible, appressed bracts ... *T. ionantha*

4. Leaves strongly involute, the margins touching or nearly so, forming a pseudobulb at the base; flowers borne on an exserted inflorescence with visible, appressed bracts [5]

5. Scales appressed, the plant appearing smooth-granular; inflorescence broadly elliptic, usually not exserted beyond the leaves ... *T. paucifolia*

5. Scales erect, the plant appearing fuzzy; inflorescence linear, usually evidently exserted from the leaves ... *T. pruinosa*

6. Flowers distant, the floral bracts of one flower subequal to the rachis internodes, not overlapping or scarcely so those of adjacent flowers, the inflorescence rachis plainly visible at anthesis [7]

6. Flowers densely congested, the floral bracts imbricate with those of adjacent flowers, the inflorescence rachis not visible at anthesis [8]

7. Plant solitary or cespitose, perennial, forming basal offshoots; plant base cylindrical, the leaf bases not holding pools of water; leaves with horizontal banding; floral bracts 2.3--3.1 cm long; inflorescences with 2--6 flowers per branch; corolla pink to dark rose ... *T. flexuosa*

7. Plant solitary, monocarpic (dying after fruiting), not forming basal offshoots; plant base bowl-shaped, the leaf bases sometimes holding pools of water; leaves uniform in color, lacking banding, or rarely variegated; floral bracts 1.2--2 cm; inflorescence with 6--11 flowers per branch; corolla white ... *T. utriculata*

8. Plant base pseudobulbous, formed by the somewhat abruptly widened and appressed leaf sheaths which are rather distinct from the articulated blade; peduncle bracts lax and spreading; inflorescence unbranched or irregularly branched with 1-13 branches, not pyramidal in overall shape [9]

8. Plant base not pseudobulbous, the leaf sheaths of the basal leaves gradually transitioning into the blade; peduncle bracts strictly appressed to ascending; inflorescence with 0-15 branches, sometimes pyramidal in shape [10]

9. Leaves at the peduncle base rather abruptly differentiated from those of the pseudobulb; inflorescence unbranched to 4-branched, the branches tightly appressed to one another ... *T. balbisiana*

9. Leaves at the peduncle base somewhat gradually transitioning from the pseudobulb; inflorescence of 3-13 branches, the branches ascending and diverging, not tightly appressed ... *T. ×smalliana*

10. Basal leaves 15-75 mm wide at the base; floral bracts 18-30 mm long [11]

10. Basal leaves 4-18 mm wide at the base; floral bracts 9-17 mm long [15]

11. Leaf blade brittle, easily snapping into separate pieces; peduncle with appressed bract bases 3-4.5 mm wide; peduncle bracts with short, acuminate tips; inflorescence of 1-3 branches ... *T. variabilis*
11. Leaf coriaceous, not easily snapping into separate pieces; peduncle with appressed bract bases 4-14 mm wide; peduncle bracts with long linear-filiform tips; inflorescence of 2-15 branches [12]
12. Basal leaves 25-75 mm wide at the base; floral bracts 20-30 mm long, 8-10 mm wide from the keel to the margin, glabrate, sparsely lepidote only at the tip [13]
12. Basal leaves 15-24 mm wide at the base; floral bracts 18-21 mm long, 4-5 mm wide from the keel to the margin, uniformly lepidote ... *T. floridana*
13. Spike >10 cm long, rarely shorter, strongly complanate; bract subtending each flower 3.5-4.8 cm long; rare in south Florida ... *T. fasciculata* var. *fasciculata*
13. Spike <10 cm long, rarely longer, somewhat compressed; bract subtending each flower 2-2.5(3) cm long [14]
14. Spikes clavate with long slender bracteate sterile bases; rare in south Florida ... *T. fasciculata* var. *clavispica*
14. Spikes short-stipitate or sessile; widespread ... *T. fasciculata* var. *densispica*
15. Basal leaves 3-7 mm wide at base, 0.6-0.9 mm wide at the involute mid-blade; peduncle bracts green, reddish green, to dark purple-red, not bright; floral bracts 9-14 mm long, 2-4 mm wide from the keel to the margin, green to red; corolla 18-22 mm long ... *T. setacea*
15. Basal leaves 6-20 mm wide at base, 1.4-3 mm wide at the involute to flat mid-blade; peduncle bracts usually uniformly red to pink, bright and conspicuous, rarely light green; floral bracts 14-17 mm long, 3-5 mm wide from the keel to the margin, usually uniformly red to pink, sometimes reddish green; corolla 30-45 mm long [15]
16. Basal leaves 6-10 mm wide at the base; bracts just below the spikes and the floral bracts tightly appressed, usually the tips just as appressed ... *T. bartramii*
16. Basal leaves 10-20 mm wide at the base; bracts just below the spikes and often the floral bracts appressed at the base, with the tips often diverging or spaced from the rachis axis ... *T. simulata*

***Tillandsia balbisiana*** Schult. & Schult.f.— {AFP} State Threatened.

***Tillandsia bartramii*** Elliott— {AFP}

***Tillandsia fasciculata*** Sw.— {AFP} State Endangered.

***Tillandsia flexuosa*** Sw.— {AFP} State Threatened.

***Tillandsia floridana*** (L.B.Sm.)H.Luther— {AFP} Endemic.

^ *Tillandsia ionantha* Planch.— {AFP}

***Tillandsia paucifolia*** Baker— {AFP}

***Tillandsia pruinosa*** Sw.— {AFP} State Endangered.

***Tillandsia recurvata*** (L.)L.— {AFP}

***Tillandsia setacea*** Sw.— {AFP}

***Tillandsia simulata*** Small— {AFP} Endemic.

***Tillandsia ×smalliana*** H.Luther— {AFP}

***Tillandsia usneoides*** (L.)L.— {AFP}

***Tillandsia utriculata*** L.— {AFP} State Endangered.

***Tillandsia variabilis*** Schldl.— {AFP} State Threatened.

## Wallisia

^ *Wallisia cyanea* Barfuss & W.Till—



## TYPHACEAE {AFP}

1. Inflorescence of globose heads arising from the axils of leaf-like bracts ... *Sparganium americanum*

1. Inflorescence a terminal spike ... *Typha*

### *Sparganium* {AFP}

*Sparganium americanum* Nutt.— {AFP}

### *Typha* {AFP}

1. Spike with a conspicuous naked, sterile gap (0)1-8 cm long between distal staminate part and proximal female part; pistillate bracteoles present (evident under magnification after removal from spike, resembling perigonial hairs, with brown, enlarged tips narrower than stigmas); pistillate part (stigmas) cinnamon-brown to orange-brown when dry; pistal hair tips straw-colored to orange-brown in mass, usually with 1 subapical orange-brown, enlarged cell; stigmas linear-lanceolate; plant to 4 m tall; leaf sheath margin broadly clear; leaf mucilage glands at sheath-blade transition orange-brown, numerous on entire sheath and proximal 1-10 cm of blade ... *T. domingensis*

1. Spike lacking a sterile gap, the distal staminate and proximal pistillate part contiguous, or very rarely with a gap to 8 cm long between; pistillate bracteoles absent; pistillate part (stigmas) dark brown when dry; pistal hair tips colorless, white in mass, not enlarged; stigmas ovate to narrowly ovate-lanceolate; plant to 3 m tall; leaf sheath margin narrowly clear; leaf mucilage glands at sheath-blade transition usually colorless, obscure, absent from sheath center and blade ... *T. latifolia*

*Typha domingensis* Pers.— {AFP}

*Typha latifolia* L.— {AFP}

## CYPERACEAE {AFP}

subg. Cyperoideae

Cladieae: *Cladium*

Sclerieae: *Scleria*

Schoeninae: *Schoenus*

Rhynchosporae: *Rhynchospora*

Dulichieae: *Dulichium*

Scirpieae: *Scirpus*

Cariceae: *Carex*

Eleocharidae: *Eleocharis*

Abdilgaardieae: *Abildgaardia*, *Bulbostylis*, *Fimbristylis*

Bolboschoeneae: *Bolboschoenus*

Fuireneae: *Fuirena*

Schoenoplecteae: *Schoenoplectus*

Pseudoschoeneae: *Schoenoplectiella*

Cypereae, Ficiniinae: *Isolepis*

Cypereae, Cyperinae: *Cyperus*

1. Pistillate flowers and achenes partially to completely enclosed in an usually inflated sac (perigynium), open at the apex where the stigma or style protrudes; flowers unisexual, with the male flowers typically apical and female flowers basal ... *Carex*

1. Flowers and achenes not enclosed in a sac-like structure; flowers bisexual or unisexual (Scleria) [2]
2. Spikelet scales distichous [3]
2. Spikelet scales spirally arranged [8]
3. Perianth bristles present, subtending achene [4]
3. Perianth bristles absent [6]
4. Leaf blades absent ... *Eleocharis baldwinii*
4. Leaf blades present [5]
5. Leaves cauline; inflorescences axillary, numerous ... *Dulichium arundinaceum*
5. Leaves basal or nearly so; inflorescences terminal, solitary ... *Schoenus nigricans*
6. Achene generally yellow, brown, to black ... *Cyperus*
6. Achene white or grayish white, sometimes with darkened areas [7]
7. Inflorescence a solitary spikelet, the scales and florets densely congested ... *Abildgaardia ovata*
7. Inflorescence of 1-several spikelets, the scales and florets adjacent, but generally individually apparent and spaced ... *Scleria*
8. Achene with a persistent, apical tubercle or swollen style base [9]
8. Achene lacking an apical tubercle or swollen style base [11]
9. Leaf blades absent or to 4 mm long and scale-like; culm with 1 spikelet ... *Eleocharis*
9. Leaf blades present, >4 mm long; culm with 2 or more spikelets [10]
10. Leaf sheath fimbriate-ciliate; style 3-fid; achene trigonous, the tubercle usually <1/2 as wide as achene ... *Bulbostylis*
10. Leaf sheath glabrous; style usually 2-fid; achene usually biconvex, the tubercle usually >1/2 as wide as achene ... *Rhynchospora*
11. Inflorescence bract 1 (rarely 2), erect, confluent with the culm, the inflorescence appearing lateral; perianth bristles present or absent [12]
11. Inflorescence bract 1-8, spreading to erect, not confluent or only 1 bract confluent with the culm and perianth bristles absent, the inflorescence generally appearing terminal [14]
12. Plant rhizomatous, usually >40 cm tall; culms usually >2 mm wide; perianth bristles present ... *Schoenoplectus*
12. Plant caespitose or nearly so, usually <40 cm tall; culms 0.2-1.2 mm wide; perianth absent [13]
13. Spikelets 1(3), scales gibbous; style 3-fid ... *Isolepis carinata*
13. Spikelets (1)2-6(10), scales not gibbous; style usually 2-fid ... *Schoenoplectiella erecta* subsp. *raynallii*
14. Plant 0.5-3 m tall, rhizomatous, rhizomes 2.5-13 mm wide, 5-20 cm long, culms 4-10 mm wide [15]
14. Plant 0.2-1.5(2) m tall, caespitose or if rhizomatous, rhizomes <2.5 mm wide or <5 cm long, culms 0.1-5 mm wide [16]
15. Rhizomes with few, non-overlapping scales; leaves unarmed, not prickly; spikelets 10-30 mm long, 6-10 mm wide ... *Bolboschoenus robustus*
15. Rhizomes densely scaly-imbricate; leaves armed, copiously prickly; spikelets 2-3 mm long, 1-2 mm wide ... *Cladium*
16. Spikelet scales usually recurved or spreading; inner whorl of perianth bristles with a claw and expanded blade ... *Fuirena*
16. Spikelet scales recurved to appressed; perianth bristles lacking or these without expanded blades [17]
17. Perianth bristles (0)3-6 ... *Scirpus*
17. Perianth absent, or of 1-2 scales or bractlets [18]

18. Spikelets few to numerous, often sessile or nearly so (those with spirally arranged scales); style smooth ... Cyperus

18. Spikelets numerous and usually some pedunculate or spikelet solitary, the spikelet mostly ovate to lanceolate; style fimbriate, papillate, ciliolate, toothed, to smooth ... Fimbristylis

### **Abildgaardia** {AFP}

**Abildgaardia ovata** (Burm.f.)Kral— {AFP}

### **Bolboschoenus** {AFP}

**Bolboschoenus robustus** (Pursh)Soják— {AFP}

### **Bulbostylis** {AFP}

1. Spikelets pedunculate, at least some [2]

1. Spikelets sessile to subsessile [4]

2. Achene yellowish to pale brown, rugose ... *B. capillaris*

2. Achene waxy gray, papillate [3]

3. Plants annual, 10-20(30) cm tall; scapes mostly 0.5 mm wide; inflorescence mostly simple, open; longest involucre bract shorter than inflorescence; spikelets mostly dark red-brown or dull brown ... *B. ciliatifolia* var. *ciliatifolia*

3. Plants perennial, 15-40 cm tall; scapes mostly 0.5-0.7 mm wide; inflorescence mostly compound, open or dense; proximalmost involucre bract longer than inflorescence; spikelets red brown or pale brown ... *B. ciliatifolia* var. *coarctata*

4. Inflorescence bracts few, inconspicuous, longest usually not exceeding the spikelets; spikelets red, red-brown, or dull brown; achene 0.5-0.6 mm long, finely reticulate ... *B. barbata*

4. Inflorescence bracts numerous, conspicuous, longest much exceeding the spikelets; spikelets pale or greenish or tan; achene 1-1.2 mm long, transversely rugose or rugulose [5]

5. Annual, to 20 cm tall; inflorescence bracts with scarious, entire border gradually narrowing to blade; anthers 1, 0.5 mm long ... *B. stenophylla*

5. Perennial, to 50 cm tall; inflorescence bracts with broad, scarious, strongly pectinate-fimbriate sheath border abruptly narrowing to blade; anthers 3, 3 mm long ... *B. warei*

\***Bulbostylis barbata** (Rottb.)C.B.Clarke— {AFP}

**Bulbostylis capillaris** (L.)C.B.Clarke— {AFP}

**Bulbostylis ciliatifolia** (Elliott)Fernald— {AFP}

**Bulbostylis stenophylla** (Elliott)C.B.Clarke— {AFP}

**Bulbostylis warei** (Torr.)C.B.Clarke— {AFP}

### **Carex** {AFP}

1. Culms terminated by a single spike; margin of the staminate scales basally connate (subg. Euthyceras and Uncinia) ... Key A

1. Culms mostly with 2 or more spikes; margin of the staminate scales free [2]

2. Achene lenticular and stigmas 2; spikes sessile; cladophylls usually absent (subg. Vignea) [3]

2. Achene trigonous and stigmas 3 (if lenticular and stigmas 2, then spikes pedunculate); spikes subsessile to pedunculate; cladophylls usually present (on adaxial side of peduncle base, as a tubular sterile sheath or a utriculiform sheath containing a pistillate flower) (subg. Carex) [6]

3. Perigynium margins winged (sect. Cyperoideae, including former sect. Ovaes) ... Key B

3. Perigynium margins not winged [4]

4. Some spikes gynecandrous (basally staminate, distally pistillate) ... Key C
4. Spikes androgynous (basally pistillate, distally staminate), rarely otherwise [5]
5. Leaf blades 1.4-3 mm wide; spikes not overlapping adjacent ones; perigynia spongy- or corky-thickened near the base (*Carex rosea* group) ... Key D
5. Leaf blades 2-15 mm wide; spikes often overlapping adjacent ones; perigynia spongy- or corky-thickened or not near the base (*Carex diandra* group) ... Key E
6. Achene lenticular and stigmas 2 ... Key F
6. Achene trigonous and stigmas 3 [7]
7. Perigynium glaucous or waxy (sect. *Glaucoscentes*) ... Key G
7. Perigynium not glaucous nor waxy [8]
8. Perigynium (including beak) 10-20 mm long; achene body confluent with a hardened, persistent filiform style base (sect. *Lupulinae*) ... Key H
8. Perigynium (including beak) 3-10 mm long; achene body with or without a persistent style base [9]
9. Perigynium pubescent, or glabrous and leaves short-pilose [10]
9. Perigynium glabrous, and leaves glabrous or sometimes papillose [15]
10. Perigynium 2-4 mm long (sect. *Acrocystis*) ... Key I
10. Perigynium 4-10 mm long [11]
11. Pistillate scale truncate and short-aristate, the margin dark chestnut brown, the vein green, the rest hyaline (sect. *Pictae*) ... *C. baltzellii*
11. Pistillate scale not truncate and short-aristate [12]
12. Achene loose, not filling the perigynium [13]
12. Achene tightly or wholly filling the perigynium [14]
13. Perigynium 4-10 mm long, gradually tapering to an indistinct beak (sect. *Hymenochlaenae*, in part) ... Key J
13. Perigynium 2-6 mm long, distally rounded then abruptly tapered to a distinct beak (sect. *Paludosae*, in part) ... Key K
14. Perigynium pubescent (sect. *Hallerianae*) ... Key L
14. Perigynium glabrous (sect. *Porocystis*) ... Key M
15. Pistillate spikes 3-8 mm wide [16]
15. Pistillate spikes 8-25 mm wide [18]
16. Pistillate spikes (7)15-80 mm long (sect. *Hymenochlaenae*, in part) ... Key J
16. Pistillate spikes 4-12 mm long [17]
17. Culms obtusely trigonous; veins of the perigynium impressed to flattish and slightly raised, or raised and perigynium rounded at the base or perigynium sharply trigonous (sect. *Griseae*) ... Key N
17. Culms acutely trigonous to faintly winged; veins of the perigynium raised or prominent, perigynium cuneate at the base, terete to rounded-trigonous (sect. *Paniceae*) ... Key O
18. Pistillate spikes 1-2(3); achene 1.4-1.9 mm long (sect. *Ceratocystis*) ... *C. lutea*
18. Pistillate spikes 1-9; achene 1.4-5 mm long [19]
19. Perigynium abruptly contracted to a definite beak [20]
19. Perigynium tapered to an indefinite beak [21]
20. Perigynium body widest above the middle (sect. *Squarrosae*) ... Key P
20. Perigynium body widest near or below the middle (sect. *Vesicariae*, in part) ... Key Q
21. Pistillate spikes congested and overlapping (sect. *Vesicariae*, in part) ... Key Q
21. Pistillate spikes sparse, mostly not overlapping [22]
22. Perigynium with 10-15 (obscure) veins (sect. *Paludosae*, in part) ... Key K
22. Perigynium with 20-26 veins (sect. *Rostrales*) ... Key R

#### Key A

1. Leaves 0.4-1.3 mm wide, usually subequal to shorter than the culm (subg. *Euthyceras*) ... *C. leptalea*
1. Leaves 1.2-4.6 mm wide, usually 1.2-3 times longer than the culm (subg. *Uncinia*) [2]
2. Leaves 1.2-2 times longer than the culm; peduncles usually ascending to nodding; perigynia 6-7.5(8) mm long ... *C. basiantha*
2. Leaves 2-3 times longer than the culm; peduncles usually erect; perigynia (7)7.5-11 mm long ... *C. superata*

#### Key B

1. Perigynia 2-3.3 times longer than wide ... *C. tribuloides*
1. Perigynia 1-2 times longer than wide [2]
2. Perigynia 1-1.2 times longer than wide ... *C. reniformis*
2. Perigynia 1.3-2 times longer than wide [3]
3. Spikes tapering to the base; achene occupying ca. 1/2 of the perigynium width ... *C. festucacea*
3. Spikes rounded at the base; achene occupying ca. 1/3 of the perigynium width [4]
4. Pistillate scale aristate ... *C. alata*
4. Pistillate scales obtuse to acuminate [5]
5. Perigynia 4-6.1mm long, 3-4.4 mm wide ... *C. vexans*
5. Perigynia 2.6-4.6 mm long, 1.5-2.8 mm wide [6]
6. Pistillate scales acute, the midvein reaching the apex; perigynium beak spreading, slender, the winged margin not reaching the apex; styles laterally sinuous at base ... *C. albolutescens*
6. Pistillate scales obtuse, the midvein not reaching the apex; perigynium beak appressed-ascending, triangular, the winged margin extending to the apex; styles straight ... *C. longii*

#### Key C

1. Spikes 2-5 times longer than wide; perigynium lanceolate, 4-4.5 mm long, ascending-strict (sect. *Deweyanae*) ... *C. bromoides*
1. Spikes 1-2 times longer than wide; perigynium broadly ovate, 2-3.5 mm long, spreading to spreading-ascending (*Carex elongata* group) [2]
2. Perigynium widest near the middle, the beak smooth ... *C. seorsa*
2. Perigynium widest near the base, the beak serrulate [3]
3. Leaves 1.6-4(4.5) mm wide; inflorescence (1.5)1.8-5.5 cm long ... *C. atlantica* subsp. *atlantica*
3. Leaves (0.5)0.8-1.6 mm wide; inflorescence 0.8-2 cm long ... *C. atlantica* subsp. *capillacea*

#### Key D

1. Pistillate scale 2-3 mm long; anthers 1.5-2.3 mm long; achene 1.3-1.6 mm long ... *C. retroflexa*
1. Pistillate scale 1.4-2.1 mm long; anthers 0.8-1.3 mm long; achene 1.6-2.2 mm long ... *C. rosea*

#### Key E

1. Leaf blades 5-15 mm wide [2]
1. Leaf blades 1-5(7) mm wide [4]
2. Leaf sheath apex yellow, thickened, not fragile; leaf blade upper surface minutely papillose ... *C. laevivaginata*
2. Leaf sheath apex not yellow, thin, fragile; leaf blade not papillose [3]
3. Leaf sheath smooth, red-dotted ... *C. cruscorvi*
3. Leaf sheath rugose, colorless; achene 2 mm long ... *C. stipata*
4. Inflorescence 0.7-2 cm long, capitate ... *C. leavenworthii*

- 4. Inflorescence 1.5-15(18) cm long, cylindric [5]
- 5. Inflorescence 1.5-4 cm long; achene 1.9-2.2 mm long ... *C. muehlenbergii*
- 5. Inflorescence 3-15(18) cm long; achene 1.2-1.9 mm long [6]
- 6. Inflorescence (6)7-15(18) cm long; peryngium biconvex, deep olive green to dark brown, with 8-11 veins ... *C. decomposita*
- 6. Inflorescence 3-10 cm long; peryngium plano-convex, green to pale brown, veinless or with 3 veins [7]
- 7. Leaves shorter than the flowering stem; inflorescence 3-7 cm long; perigynia 3.2-4 mm long, 2-2.6 mm wide, beak 1/3 length of body ... *C. fissa* var. *aristata*
- 7. Leaves longer than the flowering stem; inflorescence (3)7-10 cm long; perigynia 2-3.2 mm long, 1.3-1.8 mm wide, beak 1/3-1/2 length of body ... *C. vulpinoidea*

#### Key F

- 1. Spikes 5-8 mm long; perigynia pubescent (sect. *Acrocystis*, in part) ... *C. floridana*
- 1. Spikes 20-80 mm long; perigynia papillose (sect. *Phacocystis*) ... *C. mitchelliana*

#### Key G: sect. *Glaucescentes*

- 1. Perigynia with 6-8 prominently veins; pistillate scale tapering to an acute or aristate apex ... *C. jorii*
- 1. Perigynia veinless or with 3-8 weak veins; pistillate scales retuse or rounded with an aristate tip distinct from the body [2]
- 2. Leaves strongly scabrous on margins and abaxial surface; pistillate spikes spreading to pendent; perigynia faces veinless or with 3-4 faint veins; achenes ellipsoid, longer than wide; fertile Jul-Oct ... *C. glaucescens*
- 2. Leaves glabrous or sparsely scabrous on margins and abaxial surface; pistillate spikes erect to ascending; perigynia faces with 3-8 weak veins; achenes rhomboid, length and width subequal; fertile nearly year-round ... *C. verrucosa*

#### Key H: sect. *Lupulinae*

- 1. Sheath of the distal nonbracteal leaf 0-1.5(2.5) cm long; beak of perigynium 1.5-4.2 mm long; achenes elliptic or obovate, rounded at the middle [2]
- 1. Sheath of the distal nonbracteal leaf (1.3)1.7-21 cm long; beak of perigynium 4.5-10 mm long; achenes broadly obovate, rhombic, to nearly triangular, rounded, angular, to knobby at the middle [3]
- 2. Perigynia rhombic-ovoid, usually pubescent at least near the base, base cuneate, 8-35 per spike ... *C. grayi*
- 2. Perigynia lanceoloid to ovoid, glabrous, base rounded, 1-12(20) per spike ... *C. intumescens*
- 3. Perigynia spreading to spreading-ascending; achenes wider than long, widest beyond middle ... *C. gigantea*
- 3. Perigynia ascending, sometimes some spreading-ascending; achenes longer than or as long as wide, widest near middle [4]
- 4. Achenes (2.2)2.4-3.4 mm wide, often nearly as wide as long, angles of achenes knobby ... *C. lupuliformis*
- 4. Achenes 1.7-2.6(2.8) mm wide, longer than wide, angles of achenes smoothly rounded [5]
- 5. Plants loosely colonial, long-rhizomatous; staminate peduncle (3)6-18 cm long, usually exceeding distal pistillate spike by 2-12 cm ... *C. louisianica*
- 5. Plants loosely caespitose or not, short-rhizomatous; staminate peduncle 0.5-6(7) cm long, shorter than to exceeding distal pistillate spike by <2 cm ... *C. lupulina*

Key I: sect. *Acrocystis*

1. Pistillate spikes from basal nodes and also at cauline nodes in close proximity to staminate spike ... *C. austrodeflexa*
1. Pistillate spikes produced only at cauline nodes in close proximity to staminate spike [2]
2. Culms (10)20–45 cm long, the bases (remnants of old leaves) slightly or not at all fibrous; staminate peduncles 0.4–9.9 mm long [3]
2. Culms 2–20(27) cm, the bases (remnants of old leaves) slightly to strongly fibrous; staminate peduncles 0.3–1.2 mm long [4]
3. Rhizomes 18–70 mm long ... *C. albicans* var. *australis*
3. Rhizomes 0–5(20) mm long ... *C. albicans* var. *emmonsii*
4. Leaves 1.2–2.2(2.5) mm wide; culms 1.9–10(13.7) cm tall ... *C. reznicekii*
4. Leaves (1.9)2.3–4.5 mm wide; culms (4.5)6.6–38(51) cm tall ... *C. floridana*

Key J: sect. *Hymenochlaenae*

1. Base of culms brown from old bladed leaf bases; peryginium beak 2–2.5 mm long with hyaline teeth ... *C. cherokeensis*
1. Base of culms usually with dark maroon bladeless sheaths; peryngium beak 0.3–2 mm long and usually opaque [2]
2. Leaf blades pilose and ciliate; perigynia ovoid-oblong to lance-ovoid, 2–6 mm long ... *C. oxylepis*
2. Leaf blades glabrous and sometimes scabrous; perigynia fusiform to narrowly lance-ovoid, 4.5–9.5 mm long [3]
3. Lateral pistillate spikes linear, 2–3 mm wide; pistillate scales white-hyaline with green midrib, less than 1/2 as long as mature perigynia; pistillate flowers attached 2–9 mm apart, each perigynium strongly overlapping only the 1 immediately above; perigynia 2-ribbed, obscurely and unevenly veined between ribs ... *C. debilis*
3. Lateral pistillate spikes cylindrical, 4–5 mm wide; pistillate scales chestnut-hyaline with green midrib, at least 1/2 as long as mature perigynia; pistillate flowers usually attached 1–3 mm apart, each perigynium strongly overlapping at least 2 perigynia above; perigynia strongly veined from base to apex ... *C. venusta*

Key K: sect. *Paludosae*

1. Leaf blades glaucous; perigynium with 10–15 veins, glabrous ... *C. hyalinolepis*
1. Leaf blades green; perigynium with 14–22 veins, pubescent ... *C. striata*

Key L: sect. *Hallerianae*

1. Hairs on distal part of perigynium 0.3–0.4 mm long; achenes 2.5–2.6 mm long, 1.3–1.7 mm wide, stipe to 1 mm long, filling only 1/2 of perigynia ... *C. dasycarpa*
1. Hairs on distal part of perigynium 0.1–0.2 mm long; achenes 3–3.5 mm long, 1.9–2 mm wide, sessile, almost wholly filling perigynia ... *C. tenax*

Key M: sect. *Porocystis*

1. Mature perigynia trigonous or plano-convex, ascending ... *C. complanata*
1. Mature perigynia terete, spreading ... *C. caroliniana*

Key N: sect. *Griseae*

1. Perigynia veins raised or prominent [2]
1. Perigynia veins impressed to flattish and slightly raised [7]

2. Perigynia narrowly ellipsoid to lanceolate, sharply trigonous, the faces flat or concave, the base cuneate [3]
2. Perigynia broadly ellipsoid to subglobose, terete to weakly trigonous, the faces convex, the base rounded [5]
3. Longest vegetative shoot (1.4)1.7–3.7(4.9) times as long as longest flowering culm; pistillate peduncle usually shorter than its sheath; staminate spikes 0.6–1.4(1.6) mm wide; staminate scales obtuse, those from center of spike 2.6–3.6(3.8) mm long ... *C. abscondita*
3. Longest vegetative shoot 0.5–1.3(1.8) times as long as longest flowering culm; pistillate peduncle usually longer than its sheath; staminate spikes (1)1.2–2.7 mm wide; staminate scales acute, those from center of spike 3.6–5.5 mm long [4]
4. Terminal spike usually surpassed by bract blade of distal lateral spike; longest peduncle of staminate spike 0.9–7.2(11.4) cm long; widest leaves 2.7–4.5(5.3) mm wide; perigynia 3.2–4.2 mm long, (8)11–15-veined, apex conspicuously excurved ... *C. digitalis* var. *floridana*
4. Terminal spike usually surpassing bract blade of distal lateral spike; longest peduncle of staminate spike (6.3)8.1–15.9 cm long; widest leaves 2–2.9(3.5) mm wide; perigynia 2–3.4 mm long long, 7–10-veined, apex barely excurved ... *C. digitalis* var. *macropoda*
5. Rhizomes elongate, >15 mm long, culms mostly solitary; terminal spike and distal lateral spike (unless staminate) usually separated; proximal spikes usually arising from proximal 1/2 of culms ... *C. microdonta*
5. Rhizomes absent or short, <15 mm long, culms cespitose; terminal spike and distal lateral spike usually overlapping; proximal spikes usually arising from distal 1/2 of culms [6]
6. Leaves not glaucous; longest bract blade of distal lateral spike 1.5–4.5(7) cm; ligule of proximal bract 0.5–6.5 mm long; perigynia (1.6)1.9–3 times as long as wide ... *C. gholsonii*
6. Leaves usually glaucous; longest bract blade of distal lateral spike 4–16 cm; ligule of proximal bract (2)3–18(26) mm long; perigynia 1.4–2.2(2.4) times as long as wide ... *C. granularis*
7. Culm bases brown; leaf blades glaucous [8]
7. Culm bases purplish or reddish; leaf blades not glaucous [9]
8. Pistillate spikes (5)5.7–8(9.6) mm wide; perigynia (4)4.2–5.5(6) mm long; achene bodies 0.4–0.5 times as long as perigynia, the achene beak straight to bent less than 30° ... *C. flaccosperma*
8. Pistillate spikes (3.3)4.2–6.1(7.3) mm wide; perigynia (3.7)3.9–4.5(4.7) mm long; achene bodies 0.5–0.7 times as long as perigynia, the achene beak usually bent 30–90° ... *C. pigra*
9. Proximal bracts with sheaths loose; perigynia spirally imbricate [10]
9. Proximal bracts with sheaths tight; perigynia distichously imbricate [11]
10. Purple-red part of culm base 0.3–2.4(7.3) cm high; widest leaf blades 3.3–8(9.1) mm wide; achene stipes 0.2–0.6 mm long ... *C. corrugata*
10. Purple-red part of culm base (3.4)4–7.3 cm high; widest leaf blades 2.4–4(5.3) mm wide; achene stipes 0.6–0.9 mm long ... *C. godfreyi*
11. Longest lateral spike with (2)5–8 perigynia (including undeveloped or aborted ones); perigynia 2.1–2.5(2.7) times as long as wide, apex usually abruptly contracted, the beak (0.3)0.5–1.2 mm long ... *C. calcifugens*
11. Longest lateral spike with 6–12 perigynia (including undeveloped or aborted ones); perigynia (2.4)2.5–3.3 times as long as wide, apex gradually tapering, beakless or beak 0.1–0.4 mm long [12]
12. Plant loosely cespitose, rhizome internodes 7–58 mm long; longest vegetative shoot 1.4–2.2 times as long as longest culm; longest peduncle of terminal spike 0.9–3.2(6.8) cm; 2 distalmost lateral spikes usually overlapping ... *C. paeninsulae*
12. Plant cespitose, rhizome internodes to 6.4 mm long; longest vegetative shoot 0.5–1.3 times as long as longest culm; longest peduncle of terminal spike (2.2)5.1–8.9(10.4) cm; 2 distalmost lateral spikes usually widely separate or occasionally overlapping ... *C. thornei*



Key O: sect. Paniceae

1. Bract blades of distal lateral spikes lanceolate or narrowly lanceolate, wider than spikes, concealing them when viewed from abaxial surface, widest bract blade of distalmost lateral spike (2.9)3.2–8.3 mm wide ... *C. kraliana*
1. Bract blades of distal lateral spikes linear, narrower than spikes, not concealing them, widest bract blade of distalmost lateral spike 0.5–3.4 mm wide [2]
2. Base of leaves purplish or reddish ... *C. gracilescens*
2. Base of leaves brownish [3]
3. Perigynia 2.5–3.8(4.1) mm long, 1.5–1.9 times as long as achene bodies; beak 0.2–0.6 mm long ... *C. blanda*
3. Perigynia (3.3)3.4–5.5 mm long, 1.9–2.3 times as long as achene bodies; beak 0.5–1.7 mm long [4]
4. Distal lateral spikes overlapping; terminal spike exceeded by or subequal to distal lateral spike; perigynia ascending; peduncle of proximalmost spike arising in distal 1/2 of culm ... *C. crebriflora*
4. Distal lateral spikes separate; terminal spike clearly exceeding distal lateral spike; perigynia ascending or spreading; peduncle of proximalmost spike arising in proximal 1/3 of culm [5]
5. Longer peduncles of proximal lateral spikes 4.6–14 times as long as spikes they subtend; perigynia spreading [6]
5. Longer peduncles of proximal lateral spikes 1.4–3.3(5.3) times as long as spikes they subtend; perigynia ascending [7]
6. Plant long-rhizomatous, rhizomes elongate, <1.5 mm wide, >20 mm long ... *C. chapmannii*
6. Plant densely caespitose, rhizomes absent or short, >1 mm wide, <30 mm long ... *C. styloflexa*
7. Widest leaf on vegetative shoots, including overwintered leaves, 2–6(7) mm wide; medial pistillate spikes loosely flowered with the ratio of number of perigynia to spike length 0.2–0.5 ... *C. ignota*
7. Widest leaf on vegetative shoots, including overwintered leaves, 6–14 mm wide; medial pistillate spikes densely flowered with the ratio of number of perigynia to spike length 0.5–1.0 ... *C. striatula*

Key P: sect. Squarrosae

1. Terminal spike largely staminate; pistillate scales with long awns, exceeding perigynia bodies; achenes 1.2–2.1 mm long ... *C. aureolensis*
1. Terminal spike gynecandrous; pistillate scales with short awns or awnless, completely hidden by perigynia; achenes 2–3 mm long ... *C. typhina*

Key Q: sect. Vesicariae

1. Pistillate spikes 10–15 mm long; pistillate scales awnless, margins entire ... *C. elliottii*
1. Pistillate spikes 15–50 mm long; pistillate scales scabrous-awned, margins often ciliate [2]
2. Perigynia with 12–25 veins, veins (except for 2 prominent laterals) confluent at or proximal to mid beak, bodies elliptic to lance-ovate, 1–2.2 mm wide; achenes smooth ... *C. comosa*
2. Perigynia with 5–12 veins, veins separate nearly to apex, bodies broadly elliptic to rotund, (1.8)2–4.2 mm wide; achenes rough-papillose ... *C. lurida*

Key R: sect. Rostrales

1. Perigynia lanceolate, (8.3)10.5–15.6 mm long, 4–7 times as long as wide, apex gradually tapered, bidentulate; achene beak absent ... *C. lonchocarpa*

1. Perigynia ovate to narrowly ovate, 6.4–10.7 mm long, 2.6–3.9 times as long as wide, apex contracted; achene beak 1.3–3 mm long ... *C. turgescens*

*Carex abscondita* Mack.— {AFP}

*Carex alata* Torr.— {AFP}

*Carex albicans* Willd. ex Spreng. var. **australis** (L.H.Bailey)Rettig— {AFP}

*Carex albicans* Willd. ex Spreng. var. b (Dewey ex Torr.)Rettig— {AFP}

*Carex albolutescens* Schwein.— {AFP}

*Carex atlantica* L.H.Bailey subsp. **atlantica**— {AFP}

*Carex atlantica* L.H.Bailey subsp. **capillacea** (L.H.Bailey)Reznicek— {AFP}

*Carex aureolensis* Steudel— {AFP}

*Carex austrodeflexa* P.D.McMillan et al.— {AFP}

*Carex baltzellii* Chapm. ex Dewey— {AFP} State Threatened.

*Carex basiantha* Steud.— {AFP}

*Carex blanda* Dewey— {AFP}

*Carex bromoides* Schkuhr— {AFP}

*Carex calcifugens* Naczi— {AFP}

*Carex caroliniana* Schwein.— {AFP}

*Carex chapmannii* Steud.— {AFP} State Threatened.

*Carex cherokeensis* Schwein.— {AFP}

*Carex comosa* Boott— {AFP}

*Carex complanata* Torr. & Hook.— {AFP}

*Carex corrugata* Fernald— {AFP}

*Carex crebriflora* Wiegand— {AFP}

*Carex crus-corvi* Shuttlew. ex Kunze— {AFP}

*Carex dasycarpa* Muhl.— {AFP}

*Carex debilis* Michx.— {AFP}

*Carex decomposita* Muhl.— {AFP}

*Carex digitalis* Willd. var. **floridana** (L.H.Bailey)Naczi & Bryson— {AFP} Appearing distinct based on AFLP data (Ford et al. 2006).

*Carex digitalis* Willd. var. **macropoda** Fernald— {AFP}

*Carex elliotii* Schwein. & Torr.— {AFP}

*Carex festucacea* Schkuhr ex Willd.— {AFP}

*Carex fissa* Mack. var. **aristata** F.J.Herm.— {AFP}

*Carex flaccosperma* Dewey— {AFP}

*Carex floridana* Schwein.— {AFP}

*Carex gholsonii* Naczi & Cochrane— {AFP}

*Carex gigantea* Rudge— {AFP}

*Carex glaucescens* Elliott— {AFP}

*Carex godfreyi* Naczi— {AFP}

*Carex gracilescens* Steud.— {AFP}

*Carex granularis* Muhl. ex Willd.— {AFP}

*Carex grayi* J.Carey— {AFP}

*Carex hyalinolepis* Steud.— {AFP}

*Carex intumescens* Rudge— {AFP}

*Carex joorii* L.H.Bailey— {AFP}

*Carex kraliana* Naczi & Bryson— {AFP}

*Carex laevivaginata* (Kük.)Mack.— {AFP}

*Carex leavenworthii* Dewey— {AFP} Sometimes included in *C. cephalophora*.

*Carex leptalea* Wahlenb.— {AFP}  
*Carex lonchocarpa* Willd. ex Spreng.— {AFP}  
*Carex longii* Mack.— {AFP}  
*Carex louisianica* L.H.Bailey— {AFP}  
*Carex lupuliformis* Sartw. ex Dewey— {AFP}  
*Carex lupulina* Muhl. ex Willd.— {AFP}  
*Carex lurida* Wahlenb.— {AFP}  
*Carex lutea* LeBlond— {AFP}  
*Carex microdonta* Torr. & Hook.— {AFP} State Endangered.  
*Carex mitchelliana* M.A.Curtis— {AFP}  
*Carex muehlenbergii* Schkuhr ex Willd.— {AFP}  
*Carex oxylepis* Torr. & Hook.— {AFP}  
*Carex paeninsulae* Naczi et al.— {AFP} Endemic.  
*Carex pigra* Naczi— {AFP}  
*Carex reniformis* (L.H.Bailey)Small— {AFP}  
*Carex retroflexa* Muhl. ex Willd.— {AFP}  
*Carex reznicekii* Werier— {AFP}  
*Carex rosea* Schkuhr ex Willd.— {AFP}  
*Carex seorsa* Howe— {AFP}  
*Carex stipata* Muhl. ex Willd.— {AFP}  
*Carex striata* Michx.— {AFP}  
*Carex striatula* Michx.— {AFP}  
*Carex styloflexa* Buckley— {AFP}  
*Carex superata* Naczi et al.— {AFP}  
*Carex tenax* Chapm. ex Dewey— {AFP}  
*Carex thornei* Naczi— {AFP}  
*Carex tribuloides* Wahlenb.— {AFP}  
*Carex turgescens* Torr.— {AFP}  
*Carex typhina* Michx.— {AFP}  
*Carex venusta* Dewey— {AFP}  
*Carex verrucosa* Muhl.— {AFP}  
*Carex vexans* F.J.Herm.— {AFP} Endemic.  
*Carex vulpinoidea* Michx.— {AFP}

### Cladium {AFP}

1. Culm 1–3 m tall, 5–10 mm wide; leaf blades 5–20 mm wide, flat to folded, margins strongly scabrid; inflorescences 30–50 cm long, with tertiary and quaternary branches ... *C. jamaicense*  
 1. Culm 0.3–1 m tall, 1–2 mm wide; leaf blades 2–3 mm wide, folded to involute, margins mostly smooth; inflorescences 15–25 cm long, with primary and secondary branches only ... *C. mariscoides*

*Cladium jamaicense* Crantz— {AFP}

*Cladium mariscoides* (Muhl.)Torr.— {AFP}

### Cyperus {AFP}

1. Scales spirally arranged [2]

1. Scales distichous [4]

2. Leaves 0.2-2 mm wide; spikelet scales 0.1-0.5 mm wide; perianth of 1-2 hyaline scales (former *Lipocarpha*) ... Key A
2. Leaf blades 2-7 mm wide; spikelet scales 0.5-2.5 mm wide; perianth absent [3]
3. Culms to 100 cm long, with leaves primarily basal; leaves 30-110 cm long; leaf ligule present, ciliate; style 2-fid (former *Oxycaryum*) ... *C. blepharoleptos*
3. Culms to 12 cm long, densely leafy throughout; leaves 3-8 cm long; leaf ligule absent; style 3-fid (former *Remirea*) ... *C. pedunculatus*
4. Inflorescence of 1-4 spikes, sessile; spikelets with 1-3 scales; styles 2-fid; achene lenticular (former *Kyllinga*) ... Key B
4. Inflorescence with 1-many arrays of 1-many spikes, sessile or pedunculate; spikelets with 5-76 scales; styles 2- or 3-fid; achene lenticular or trigonous [5]
5. Stigmas 2; achenes biconvex (*Pycneus* group) ... Key C
5. Stigmas 3; achenes trigonous or terete [6]
6. Spikelet disarticulating into 1-fruited segments (scale, internode, and rachilla wings) (*Diclidium* group) ... Key D
6. Spikelet not disarticulating into 1-fruited segments [7]
7. Leaves lacking blades, or blades rarely to 9 mm long ... Key E
7. Leaves with conspicuous blades [8]
8. Spikelets digitate or pseudowhorled, borne from the same point or appearingly so, internodes unapparent between the spikelets, rachis 0-2.5 mm long [9]
8. Spikelets dense to sparse along a prolonged or elongate rachis, spicate or racemose, rachis 3-25 mm long [10]
9. Spikelet scales 1-keeled longitudinally or rounded ... Key F
9. Spikelet scales 2-keeled and longitudinally flattened or depressed along the middle ... Key G
10. Spikelets with most (middle and proximal ones) descending at a downward angle, only the few distalmost spreading ... Key H
10. Spikelets with most spreading to ascending, not regularly pointing downward or only a few proximal ones descending [11]
11. Spikelets overlapping, densely spicate and radiating in nearly all directions; floral scales 2-5(7) per spikelet ... Key I
11. Spikelets spaced between distally and proximally adjacent ones, loosely spicate or paniculate, semi-distichous or loosely spiraled around the rachis; floral scales 2-30 per spikelet ... Key J

Key A: formerly genus *Lipocarpha*

1. Leaves 1-2 mm wide; spikes (1)3-6, terminal, the bracts spreading; anthers 0.5 mm (*Lipocarpha maculata*) ... *C. neotropicalis*
1. Leaves 0.3-0.6 mm wide; spikes (1)2-3, appearing lateral with the erect bract continuous with the culm; anthers 0.1-0.2 mm long [2]
2. Outer scales contracted into an awn subequal to longer than the scale body; stigmas 3 (*Lipocarpha squarrosa*) ... *C. neochinensis*
2. Outer scales apiculate; stigmas 2 (*Lipocarpha micrantha*) ... *C. subsquarrosus*

Key B: formerly genus *Kyllinga*

1. Floral scale winged, lacinate; anthers 2 mm long (*Kyllinga squamulata*) ... *C. metzii*
1. Floral scale ciliate or glabrous, not winged; anthers 0.2-1.2 mm long [2]
2. Spikes white [3]
2. Spikes green [4]

- 3. Plant with slender, delicate stolons; central spike hemispherical to pyramidal; achene brown (Kyllinga bulbosa) ... *C. richardii*
- 3. Plant caespitose; central spike cylindrical; achene black (Kyllinga odorata) ... *C. sesquiflorus*
- 4. Plant rhizomatous; anthers 0.8-1.1 mm long ... *C. brevifolius*
- 4. Plant caespitose; anthers 0.2-0.4 mm long (Kyllinga pumila) ... *C. hortensis*

Key C: *Pycneus* group

- 1. Spikelets with 3-6 floral scales, the scales with several longitudinal veins ... *C. hyalinus*
- 1. Spikelets with (4)6-54 floral scales, the scales mostly with 1 vein on either side [2]
- 2. Floral scales 3-4 mm long ... *C. unioides*
- 2. Floral scales 1-2.5 mm long [3]
- 3. Floral scales with erect to recurved awn, the awn 0.3-0.5 mm long ... *C. pumilus*
- 3. Floral scales without an awn, merely acute to acuminate [4]
- 4. Culms 1.5-2.5 m tall; inflorescence bracts 20-100 cm long; achene dorsiventrally flattened, borne with face toward rachilla ... *C. alopecuroides*
- 4. Culms 0.1-0.8 m tall; inflorescence bracts 1-35 cm long; achene laterally flattened, biconvex, or subcylindric, borne with edge toward rachilla [5]
- 5. Inflorescence bracts (2)8-35 cm long; spikelet with floral scales distant, not overlapping or scarcely overlapping; floral scales with clear or hyaline border ... *C. flavicomus*
- 5. Inflorescence bracts 2-15(23) cm long; spikelet with floral scales imbricate, closely overlapping; floral scales with a yellowish, brownish, or greenish border [6]
- 6. Achene linear-oblong, 0.4-0.5(0.6) mm wide, 2-2.5 times longer than wide ... *C. polystachyos*
- 6. Achene ellipsoid to obovoid, (0.5)0.6-0.8 mm wide, 1.3-2 times longer than wide [7]
- 7. Floral scales light to dark brown or purplish, usually at least partly dark brown or purplish; stigmas 1-1.5 mm long; achene black ... *C. bipartitus*
- 7. Floral scales yellowish to greenish or partly pale brown; stigmas 0.5-1 mm long; achene black to brown [8]
- 8. Caespitose annual; stamens 3; achene black or dark purplish ... *C. flavescens*
- 8. Rhizomatous perennial; stamens 2; achene brown ... *C. lanceolatus*

Key D: *Diclidium*

- 1. Culms 0.5-1 mm wide; leaves 0.5-2 mm wide; inflorescence bracts 0.5-1 mm wide, longest one erect; spikelet clusters usually sessile, spikelets digitate or nearly so ... *C. filiformis*
- 1. Culms (0.5)1-4 mm wide; leaves 4-12 mm wide; inflorescence bracts 1-14 mm wide, longest spreading to ascending; spikelet clusters pedunculate, spikelets on an elongate rachis ... *C. odoratus*

Key E

- 1. Primary inflorescence bracts 2-3(4) [2]
- 1. Primary inflorescence bracts 20-100 [4]
- 2. Culm (4)7-20 mm wide, distinctly septate; spikelets in spicate clusters ... *C. articulatus*
- 2. Culm 2-8 mm wide, not noticeably septate; spikelets in digitate clusters [2]
- 3. Primary inflorescence branches 5-50, mostly linear, usually of varying lengths, immature spikelets early apparent; anthers 0.3-0.5 mm long ... *C. haspan*
- 3. Primary inflorescence branches 50-250, mostly filiform, mostly all elongate and subequal in length, greatly elongate and often appearing naked before immature spikelets arise; peduncles subtending spikelet clusters filiform anthers 1-1.2 mm long ... *C. prolifer*
- 4. Primary inflorescence bracts 15-30, these 15-40 cm long; spikelets in digitate clusters, these subtended by short bracts 3-10 mm long ... *C. involucreatus*

4. Primary inflorescence bracts 4-12, these 3-45 cm long; spikelets in spicate clusters, these subtended by elongate bracts 15-250 mm long [5]
5. Primary inflorescence bracts (8)20-45 cm long; primary inflorescence branches stiff, ascending to erect; spikelet clusters subtended by linear bracts, 1.5-5 mm wide ... *C. giganteus*
5. Primary inflorescence bracts 3-8 cm long; primary inflorescence branches slender, drooping or arching; spikelet clusters subtended by filiform bracts, 0.5-2 mm wide ... *C. papyrus*

#### Key F

1. Annuals [2]
1. Perennials [5]
2. Floral scales (2.4)2.6-3 mm long; achene 1-1.5 mm long ... *C. compressus*
2. Floral scales 0.6-2.2 mm long; achene 0.5-0.8(1.1) mm long [3]
3. Floral scale apex truncate to obtuse, scarcely if at all mucronulate ... *C. difformis*
3. Floral scale apex recurved [4]
4. Floral scale with 1 lateral vein per half, the apex emarginate or retuse with a cupshaped awn ... *C. cuspidatus*
4. Floral scale with 3-4 lateral veins per half, the apex acuminate or attenuate ... *C. squarrosus*
5. Rhizomatous; leaves 2-15 mm wide [6]
5. Cespitose; leaves 1-4 mm wide [7]
6. Leaf blades and inflorescence bracts with 3(-5) major veins, these 3-15 mm wide; primary inflorescence bracts 8-14 ... *C. albostriatus*
6. Leaf blades and inflorescence bracts with 1 major vein, these 1-5 mm wide; primary inflorescence bracts 3-5 ... *C. lecontei*
7. Plant viscid; leaf blades involute [8]
7. Plant not viscid; leaf blades flat or V-shaped [9]
8. Floral scales 2.4-2.6 mm wide; achene obovate, 0.9-1 mm wide, black to dark brownish or reddish black, with a hyaline, iridescent overlay ... *C. elegans*
8. Floral scales 1.5-2.4 mm wide; achene oblanceolate, 0.5-0.8 mm wide, dull light to dark brown ... *C. oxylepis*
9. Culm bases scarcely if at all cormose; basal leaf sheaths brown to dark purplish or dark red; floral scales reddish; rachilla wings 0.2 mm wide ... *C. fuliginus*
9. Culm bases distinctly globose-cormose, the culm about half as wide as the cormose base; pale brown, pinkish red, to pale yellow or greenish; floral scales light brown, off-white, or stramineous; rachilla wingless or wings to 0.6 mm wide [10]
10. Spikelet clusters usually sessile or subsessile, rarely a few pedunculate; rachilla wings absent; floral scales 2.6-3.6 mm long; achene sessile ... *C. filiculmis*
10. Spikelet clusters (at least some) usually pedunculate; rachilla wings 0.4-0.6 mm wide; floral scales 2-2.8 mm long; achene substipitate ... *C. grayi*

#### Key G

1. Culms antrorsely scabrid; leaf blades and bracts with some distinct cross-veins [2]
1. Culms smooth to mostly retrorsely scabrid; leaf blades and bracts lacking cross-veins [3]
2. Primary inflorescence branches 3-5; floral scales ovate, 1.4-1.6 mm long; achenes 1-1.2 mm long ... *C. drummondii*
2. Primary inflorescence branches 6-12; floral scales oblanceolate, (1.3)1.5-2(2.4) mm long; achenes 1.2-1.5 mm long ... *C. virens*
3. Achene base swollen, spongy ... *C. distinctus*
3. Achene base not swollen, sometimes stipitate [4]

- 4. Floral scale apex erect to slightly recurved; achene linear, 0.2-0.3 mm wide, 4-5 times as long as wide ... *C. pseudovegetus*
- 4. Floral scale apex mostly incurved; achene ovoid to ellipsoid, 0.2-0.7 mm wide, 2-3 times as long as wide [5]
- 5. Longest inflorescence bract erect, continuous with the culm; floral scales pinkish or reddish ... *C. reflexus*
- 5. Longest inflorescence bract spreading to ascending, not continuous with the culm; floral scales yellowish to green [6]
- 6. Culms smooth; achene 0.4-0.7 mm wide, usually stipitate [7]
- 6. Culms smooth to retrorsely scabrid (rarely a prickly antrorse); achene 0.2-0.4 mm wide, not or scarcely stipitate [8]
- 7. Inflorescence usually densely congested, the spikelet clusters mostly longer than to slightly shorter than their subtending peduncles; floral scales 2-2.3 mm long; achene surface punctulate ... *C. eragrostis*
- 7. Inflorescence open, the spikelet clusters mostly much shorter than their elongate subtending peduncles; floral scales (1.2)1.5-2 mm long; achene surface partly reticulate ... *C. ochraceus*
- 8. Culm base dark reddish brown, dark purplish, to nearly black; floral scales (1.2)1.4-1.6(1.8) mm long, pale green ... *C. enterianus*
- 8. Culm base pale reddish or brownish green; floral scales 1-1.5 mm long, yellowish green ... *C. surinamensis*

#### Key H

- 1. Culms glabrous; leaves and bracts glabrous except for marginal prickles; spikes ca. 2 times long as wide; rachilla wing clasping achene for its entire length (therefore achene not visible in abaxial view); floral scales golden brown ... *C. hystericinus*
- 1. Culms (at least distally) minutely to densely scabridulous; leaves and bracts harshly scabrid or hirtellous on adaxial surface; spikes nearly as wide as long; rachilla wing clasping achene 3/4 or less of its length; floral scales grayish green to brown, often red-purple striate [2]
- 2. Culm obtusely trigonous to subterete; leaves and inflorescence bracts usually puberulent; inflorescence branches scabrid; spikes tight, burlike, turbinate; terminal scale spinose; spikelets with 1(-2) floral scales; rachilla wing hyaline, clasping achene ca. 1/2 its length; longest bract equaling or shorter than longest ray; ... *C. plukenetii*
- 2. Culm sharply angled; leaves and inflorescence bracts with pubescence confined to midrib on abaxial side; inflorescence branches glabrous (rarely with a few antrorse hairs proximal to spike); spikes loose, obtrulloid to obdeltoid; terminal scale not spinose; spikelets with 3-6(8) floral scales; rachilla wing papery with narrow, hyaline border, clasping achene for 3/4 its length; longest ray shorter than bracts ... *C. retrofractus*

#### Key I

- 1. Culms, rays, and leaf blades papillose; leaves harshly scabrid on margins and midribs ... *C. ligularis*
- 1. Culms, rays, and leaf blades not papillose; leaves scabridulous or glabrous on margins and midribs [2]
- 2. Spikelet clusters sessile, or most sessile and a few pedunculate; spikelets mostly ascending; floral scales 1.8-2.6 mm wide ... *C. aggregatus*
- 2. Spikelet clusters with numerous pedunculate ones and few sessile ones (more sessile in *C. blodgettii*); spikelets mostly spreading, or distal ones ascending, middle ones spreading, and proximal ones descending; floral scales 1-2.2 mm wide [3]
- 3. Floral scales 3.5-4.5 mm long ... *C. echinatus*

3. Floral scales 1.8-3.6 mm long [4]
4. Spikelet clusters subglobose and about as long as wide; spikelets 4-8 mm long; floral scales 2.3-3.6 mm long, 1.8-2.2 mm wide ... *C. croceus*
4. Spikelet clusters subcylindric and 1.2-3 times longer than wide; spikelets 4-7 mm long; floral scales 1.8-2.6 mm long, 1-1.5 mm wide [5]
5. Spikelets 4-7 mm long, 1.5-2 mm wide; stigma 1-2 mm long; floral scales ascending (rarely subappressed); achenes oblong-fusiform; rachilla wing thin, deciduous, covering less than 1/2 achene face [6]
5. Spikelets 2.2-4(4.5) mm long, 0.8-1.6 mm wide; stigma 0.6-0.9 mm long; floral scales appressed; achenes abruptly constricted, not fusiform; rachilla wing persistent, 0.2-0.3 mm wide, covering at least 1/2 achene face [7]
6. Most spikelet clusters sessile, few pedunculate, peduncles <2 cm long; floral scales greenish to reddish brown ... *C. blodgettii*
6. Most spikelet clusters pedunculate, few sessile, peduncles to 8 cm long ... *C. ovatus*
7. Inflorescence bracts usually divaricate; of xeric areas ... *C. nashii*
7. Inflorescence bracts usually ascending; of mesic areas ... *C. retrorsus*

#### Key J

1. Inflorescence usually branched below spikelet clusters; spikelets ascending to erect, loosely paniculate, floral scales obovate-orbiculate, apex emarginate; styles <0.1 mm long ... *C. iria*
1. Inflorescence usually unbranched below spikelet clusters, occasionally branching; spikelets mostly spreading (sometimes some distal ones ascending to erect); floral scales elliptic, oblong, or ovate, apex acute to obtuse; styles 0.2-3.6 mm long [2]
2. Floral scales 2-7 per spikelet [3]
2. Floral scales (3)6-36(42) per spikelet [4]
3. Leaf blades 3-10 mm wide; spikelets narrowly ellipsoid, 1.5-2 mm wide ... *C. tetragonus*
3. Leaf blades 0.8-3 mm wide; spikelets oblong to linear, 0.6-1.6 mm wide ... *C. thyrsoflorus*
4. Rachis hispidulous ... *C. pilosus*
4. Rachis glabrous [3]
5. Floral scales sparse along rachilla, the apex of the scale barely (if at all) reaching the base of the proceeding scale (along the same side of the rachilla) ... *C. distans*
5. Floral scales imbricate along the rachilla [6]
6. Floral scales (2.1)2.4-4 times as long as wide [7]
6. Floral scales 1-2 times as long as wide [8]
7. Floral scales densely red-glandular punctate, mucronulate to mucronate, mucro 0.2-0.5 mm, terminal scale conduplicate; anthers 0.5-0.8(-1.4) mm; styles 0.8-1 mm; stigmas 1-2 mm ... *C. lentiginosus*
7. Floral scales eglandular, acute at the apex, terminal scale involute; anthers 0.3-0.5 mm; styles 1-2 mm; stigmas 3-4 mm ... *C. strigosus*
8. Floral scales whitish with a light green edge, and often reddish speckled ... *C. sphacelatus*
8. Floral scales mostly brown, red-brown, reddish, or greenish, not speckled [9]
9. Plants without rhizomes, stolons, or tubers; floral scales 0.8-1.3 mm wide [10]
9. Plants rhizomatous, stoloniferous, or tuberous; floral scales (1)1.4-3 mm wide [11]
10. Plants perennial; culms 50-150 cm long, 2-15 mm wide; floral scales 1.6-1.8 mm long; achenes 0.9 mm long; anthers 0.4-0.5 mm long ... *C. digitatus*
10. Plants annual; culms 5-25(105) cm long, 1-2.5(8) mm wide; floral scales 1.3-1.5 mm long; achenes 0.4-0.6 mm long; anthers 0.2-0.3 mm long ... *C. erythrorhizos*
11. Robust, rhizomatous, the culm base usually reddish brown; floral scales deciduous; achene coarsely punctate ... *C. planifolius*



11. Usually weak, stoloniferous, tuber-bearing, (if robust, then the culm base mostly yellowish or greenish); floral scales persistent; achene punctulate [12]  
 12. Floral scales yellowish brown to dark brown ... *C. esculentus*  
 12. Floral scales purple to reddish brown, with green midrib ... *C. rotundus*

- \**Cyperus aggregatus* (Willd.)Endl.— {AFP}  
 \**Cyperus albostratus* Schrad.— {AFP}  
 \**Cyperus alopecuroides* Rottb.— {AFP}  
*Cyperus articulatus* L.— {AFP}  
*Cyperus bipartitus* Torr.— {AFP}  
 \**Cyperus blepharoleptos* Steud.— {AFP}  
 \**Cyperus brevifolius* (Rottb.)Endl. ex Hassk.— {AFP}  
*Cyperus compressus* L.— {AFP}  
*Cyperus croceus* Vahl— {AFP}  
*Cyperus cuspidatus* Kunth— {AFP}  
 \**Cyperus difformis* L.— {AFP}  
 \**Cyperus digitatus* Roxb.— {AFP}  
 \**Cyperus distans* L.f.— {AFP}  
*Cyperus distinctus* Steud.— {AFP}  
*Cyperus drummondii* Torr. & Hook.— {AFP}  
*Cyperus echinatus* (L.)A.W.Wood— {AFP}  
*Cyperus elegans* L.— {AFP}  
 \**Cyperus entrerianus* Boeck.— {AFP}  
 \**Cyperus eragrostis* Lam.— {AFP}  
*Cyperus erythrorhizos* Muhl.— {AFP}  
 \**Cyperus esculentus* L.— {AFP}  
*Cyperus filiculmis* Vahl— {AFP}  
*Cyperus filiformis* Sw.— {AFP} State Endangered.  
*Cyperus flavescens* L.— {AFP}  
*Cyperus flavicomus* Michx.— {AFP}  
*Cyperus fuliginosus* Chapm.— {AFP} State Endangered.  
*Cyperus grayi* Torr.— {AFP}  
*Cyperus haspan* L.— {AFP}  
*Cyperus hortensis* (Salzm. ex Steud.)Dorr— {AFP}  
 \**Cyperus hyalinus* Vahl— {AFP}  
*Cyperus hystricinus* Fernald— {AFP}  
 \**Cyperus involucratu*s Rottb.— {AFP}  
 \**Cyperus iria* L.— {AFP}  
 \**Cyperus lanceolatus* Poir.— {AFP}  
*Cyperus lecontei* Torr. ex Steud.— {AFP}  
 \**Cyperus lentiginosus* Millsp. & Chase— {AFP}  
*Cyperus ligularis* L.— {AFP}  
 \**Cyperus metzii* (Hochst. ex Steud.)Mattf. & Kük.— {AFP}  
 \**Cyperus neochinensis* (Tang & F.T.Wang)Bauters— {AFP}  
*Cyperus neotropicalis* Alain— {AFP}  
 \**Cyperus ochraceus* Vahl— {AFP}  
*Cyperus odoratus* L.— {AFP}  
*Cyperus ovatus* Baldwin— {AFP}  
 \**Cyperus oxylepis* Nees ex Steud.— {AFP}

\**Cyperus papyrus* L.— {AFP}

*Cyperus pedunculatus* (R.Br.)J.Kern— {AFP} State Endangered.

\**Cyperus pilosus* Vahl— {AFP}

*Cyperus planifolius* Rich.— {AFP}

*Cyperus plukenetii* Fernald— {AFP}

*Cyperus polystachyos* Rottb.— {AFP} Globally widespread species, wrangled by [Clarke \(1884\)](#) into varieties. The similar *C. filicinus* was distinguished by larger floral scales (2.7-3.6 mm long, 1.6-1.8 mm wide) and large achenes (1.2-1.6 mm long, 0.6-0.9 mm wide) but allegedly is absent from Florida ([Tucker et al., FNA, vol. 23](#)).

\**Cyperus prolifer* Lam.— {AFP}

*Cyperus pseudovegetus* Steud.— {AFP}

\**Cyperus pumilus* L.— {AFP}

\**Cyperus reflexus* Vahl— {AFP}

*Cyperus retrofractus* (L.)Torr. ex A.Gray— {AFP}

\**Cyperus richardii* Steud.— {AFP}

\**Cyperus rotundus* L.— {AFP}

*Cyperus sesquiflorus* (Torr.)Mattf. & Kük.— {AFP}

\**Cyperus sphacelatus* Rottb.— {AFP}

*Cyperus squarrosus* L.— {AFP}

*Cyperus strigosus* L.— {AFP}

*Cyperus subsquarrosus* (Muhl.)Bauters— {AFP}

*Cyperus surinamensis* Rottb.— {AFP}

*Cyperus tetragonus* Elliott— {AFP}

*Cyperus thyrsiflorus* Jungh.— {AFP}

\**Cyperus uniolooides* R.Br.— {AFP}

*Cyperus virens* Michx.— {AFP}

## Dulichium {AFP}

*Dulichium arundinaceum* (L.)Britton— {AFP}

## Eleocharis {AFP}

1. Culms 0.5-9 mm wide, transverse septae conspicuous and complete or obscure and incomplete; spikelets (6)9-78 mm long, most 0.6-1.1 times as wide as the culm or 2-4 times as wide ... Key A

1. Culms 0.2-1 mm wide, transverse septae incomplete and obscure; spikelets 2-12(23) mm long, 2-8 times as wide as the culm [2]

2. Culms with branches in successive false whorls, which terminate in clusters of leaves essentially indistinguishable from stems, the spikelets borne singly on branches arising from among leaves; spikelets consisting of 2 scales, the single flower subtended by the distal scale (*Websteria*) ... *E. confervoides*

2. Culms unbranched, with 1 terminal spikelets; spikelets with 4-160 scales and numerous flowers [3]

3. Styles 2-fid; achene biconvex or lenticular (*Maculosae* group) ... Key B

3. Styles 3-fid (or sometimes 2-fid in *E. ambigens*, *E. minima*, *E. obtusa*); achene trigonous to subterete or biconvex ... Key C

Key A

1. Spikes often subulate, generally dark brown to reddish in color, with 100-500+ densely arranged floral scales, 15-40 scales per mm; floral scales 1-3 mm long, 1-1.5 mm wide, with 1 vein (rarely 10 widely spaced veins) (Truncatae group) [2]
1. Spikes mostly rounded, obtuse, or abruptly acute at the tip, generally pale in color, with 4-220 floral scales, 0.5-3 scales per mm; floral scales 3-8 mm long, 2-5 mm wide, with 15+ obscure to prominent veins (subg. *Limnochloa*) [3]
2. Culms (2.8)3-6(10) mm wide, subequal to the spikelet width; achene tubercle 2-4 times longer than wide, nearly as long as the achene body ... *E. elegans*
2. Culms 0.5-3(4) mm wide, the spikelet 2-4 times wider than the culm; achene tubercle wider than or as wide as long, <1/2 as long as achene body ... *E. montana*
3. Culms 0.5-1.5 mm wide; spikelets 1.4-3 mm wide, with 4-26 floral scales; submersed culms sometimes flaccid and lacking spikelets [4]
3. Culms 2.5-9 mm wide; spikelets 3-8 mm wide, with 30-220 floral scales; submersed culms not becoming flaccid and sterile [5]
4. Floral scales 3.5-4.5 mm long, usually with a conspicuous brown to blackish submarginal band; achenes 0.6-1.3 mm long, 0.5-0.8 mm wide ... *E. elongata*
4. Floral scales 5-8 mm long, usually without a conspicuous submarginal band; achenes 1.9-2.6 mm long, 1-1.4 mm wide ... *E. robbinsii*
5. Culms distinctly septate (septae complete), internally hollow between septae [6]
5. Culms not septate or only obscurely so (septae incomplete), internally spongy [7]
6. Perianth bristles filiform, smooth to weakly toothed, shorter than to subequal to achene body; achene surface with linear-oblong cells medially and apically (rectangular towards the base) ... *E. equisetoides*
6. Perianth bristles flattened linear-lanceolate, coarsely retrorsely spinulose, longer than achene body; achene surface with rectangular cells ... *E. interstincta*
7. Achene apex gradually narrowed and spongy-thickened, apex similar in texture (reticulate) to achene body except for the darkened tip (tubercle), tubercle scarcely differentiated and confluent, narrower than achene apex [8]
7. Achene apex constricted, sharply differentiated from the flared base of the tubercle [9]
8. Culm terete to scarcely trigonous; perianth bristles usually smooth; achene (including tubercle) 2.3-3.3 mm long ... *E. cellulosa*
8. Culm sharply 3-angled; perianth bristles retrorsely spinulose; achene (including tubercle) 1.8-2.2 mm long ... *E. mutata*
9. Culm 3-angled; perianth bristles usually retrorsely spinulose; achene 1.4-2 mm long, 1.2-1.6 mm wide, tubercle 0.3-0.8 mm long ... *E. acutangula* subsp. *brevisetata*
9. Culm 4-angled; perianth bristles usually smooth to sparsely retrorsely spinulose; achene 1.8-3 mm long, 1.3-2 mm wide, tubercle 0.7-1.5 mm long ... *E. quadrangulata*

#### Key B

1. Leaf sheath thin, delicate, hyaline, the margin sometimes tearing; achenes greenish to reddish or brown [2]
1. Leaf sheath firm, opaque, the margin intact; achenes black [3]
2. Achenes red-brown to dark brown, 0.4-0.8(1.1) mm long, 0.3-0.6 mm wide, apex usually not strongly constricted proximal to tubercle, perianth bristles usually shorter than to subequal to achene ... *E. flavescens*
2. Achenes green to golden-brown, 0.5-1.1 mm long, 0.4-0.8 mm wide, usually strongly constricted proximal to tubercle, perianth bristles usually longer than the achene ... *E. olivacea*
3. Perianth bristles colorless or white; achenes 0.3-0.5 mm long, 0.3-0.4 mm wide, apex often constricted to a neck below tubercle ... *E. atropurpurea*

3. Perianth bristles red-brown, rarely whitish; achenes 0.5–1.1 mm long, 0.3–0.7 mm wide, apex rounded below tubercle ... *E. geniculata*

#### Key C

1. Achene surface with prominent longitudinal ribs, horizontal ridges much finer (*Scirpidium* group) [2]

1. Achene surface smooth, honeycomb-reticulate, finely reticulate, or cancellate, the ridges all fairly equal in prominence, lacking more strongly prominent longitudinal ribs [3]

2. Culms firm to flaccid, not very spongy, 1–45 cm long; anthers 0.5–1.5 mm long ... *E. acicularis*

2. Culms soft, very spongy, 1–12 cm long; anthers 0.3–0.5 mm ... *E. radicans*

3. Achenes apex gradually narrowed to a rudimentary or scarcely distinct tubercle, similar in texture and color to the achene body or only subtly changing [4]

3. Achenes apex generally narrowed below a distinct tubercle, the tubercle sharply differentiated from the achene body, the tubercle base usually flared [6]

4. Culms to 100 cm long, with 8 ridges; anthers 2–2.4 mm long; achene (including indistinct tubercle) 1.5–2.5 mm long ... *E. rostellata*

4. Culms to 55 cm long, with or without ridges; anthers 0.7–1.5 mm long; achene (including indistinct tubercle) 0.9–1.4 mm long [5]

5. Rhizomes with curved tubers; culms to 15(20) cm long, lacking ridges; perianth bristles 6 ... *E. parvula*

5. Rhizomes lacking curved tubers; culms to 55 cm long, with 8–12 ridges; perianth bristles absent ... *E. tricostata*

6. Achenes 0.7–1.7 mm long; spikelets or culm tips not proliferous (or if proliferous, achene nearly black) [7]

6. Achenes 0.4–0.8(0.9) mm long, smooth, finely pitted, or cancellate; spikes or culm tips sometimes proliferous [13]

7. Achene coarsely honey-comb reticulate (*Tuberculosae* group) [8]

7. Achene smoothish to finely rugulose or cancellate [9]

8. Culm usually trigonous; tubercle much narrower and shorter than the achene, much smaller than the achene ... *E. tortilis*

8. Culm terete; tubercle as long and as wide as achene, often larger than the achene ... *E. tuberculosa*

9. Achenes dark purplish brown to black, smooth, widest near the apex, the tubercle 0.7–1.1 mm wide, as wide as the achene; some culms often arching or decumbent and with tips rooting ... *E. melanocarpa*

9. Achenes stramineous, orangish, to brown, widest near the middle, the tubercle 0.2–0.6 mm wide and usually narrower than the achene; culms not rooting at tips [10]

10. Achenes (0.9)1–1.5 mm long, (0.7)0.8–1.3 mm wide, the tubercle 0.3–0.5 mm long, 0.4–0.8 mm wide [11]

10. Achenes 0.7–1 mm long, 0.6–0.8 mm wide, the tubercle 0.1–0.3 mm long, 0.2–0.4 mm wide [12]

11. Spikelets 2–3 mm wide, acute at the tip, floral scales 3–5 per mm ... *E. ambigens*

11. Spikelets (2)3–4 mm wide, obtuse or rounded at the tip; floral scales 8–20 per mm (*Ovatae* group) ... *E. obtusa*

12. Culm base pale brownish (scarcely any red color if at all); leaf sheath apex acute to lanceolate or disintegrating; perianth bristles sometimes exceeding the tubercle ... *E. albida*

12. Culm base distinctly reddish; leaf sheath apex subtruncate to obtuse; perianth bristles not exceeding the tubercle ... *E. montevidensis*

13. Scales distichous; spikes with 2–4 flowers ... *E. baldwinii*

13. Scales spirally arranged (or spirodistichous); spike mostly with 4-50(75) flowers [14]  
 14. Achenes 0.45–0.9 mm, finely reticulate or cancellate ... *E. vivipara*  
 14. Achene smooth or very finely pitted [15]  
 15. Stolons and rhizomes absent; floral scales 1–1.2 mm long; perianth bristles absent; spikelets not proliferating ... *E. nigrescens*  
 15. Stolons or rhizomes present; floral scales 1.3–2.2 mm long; perianth bristles present or absent; spikelets sometimes proliferating [16]  
 16. Spikelet proximal scale deciduous or sometimes persistent, similar to floral scales or smaller; perianth bristles present [17]  
 16. Spikelet proximal scale persistent, differentiated from floral scales, usually longer and resembling involucre bract, often with excurrent midrib; perianth bristles present or absent [18]  
 17. Rhizomes absent, stolons present; spikelets often proliferating; perianth bristles colorless to stramineous, slightly shorter than to equaling tubercle; achenes sometimes spotted olive or brown ... *E. minima*  
 17. Rhizomes present; spikelets not proliferating; perianth bristles red-brown, equaling to exceeding tubercle; achenes not spotted ... *E. nana*  
 18. Proximal scale apex rounded [19]  
 18. Proximal scale apex subacute to acute [20]  
 19. Plants usually robust; floral scales pale brown and papery; perianth bristles well developed; achenes to 0.8 mm long, minutely pitted ... *E. brittonii*  
 19. Plants usually small; floral scales whitish with red-brown markings; perianth bristles absent or poorly developed; achenes not more than 0.6 mm long, smooth ... *E. brittonii* variant  
 20. Spikelet proximal scale 0.8–1 mm wide; perianth bristles 0.6–1 mm long ... *E. microcarpa* var. *filiculmis*  
 20. Spikelet proximal scale 0.4–0.5 mm wide; perianth bristles 0.2–0.4 mm long ... *E. microcarpa* var. *microcarpa*

***Eleocharis acicularis*** (L.)Roem. & Schult.— {AFP}

\****Eleocharis acutangula*** (Roxb.)Schult. subsp. ***brevisetata*** D.J.Rosen— {AFP}

***Eleocharis albida*** Torr.— {AFP}

***Eleocharis ambigens*** Weath.— {AFP} Sometimes included in *E. fallax* (see [Sorrie & LeBlond 2014](#)).

***Eleocharis atropurpurea*** (Retz.)J.Presl & C.Presl— {AFP}

***Eleocharis baldwinii*** (Torr.)Chapm.— {AFP}

***Eleocharis brittonii*** Svenson ex Small— Sometimes included in *E. microcarpa*.

***Eleocharis cellulosa*** Torr.— {AFP}

***Eleocharis confervoides*** (Poir.)Steud.— {AFP}

\****Eleocharis elegans*** (Kunth)Roem. & Schult.— {AFP}

***Eleocharis elongata*** Chapm.— {AFP}

***Eleocharis equisetoides*** (Elliott)Torr.— {AFP}

***Eleocharis flavescens*** (Poir.)Urb.— {AFP}

***Eleocharis geniculata*** (L.)Roem. & Schult.— {AFP}

***Eleocharis interstincta*** (Vahl)Roem. & Schult.— {AFP}

***Eleocharis melanocarpa*** Torr.— {AFP}

***Eleocharis microcarpa*** Torr. var. ***filiculmis*** Torr.—

***Eleocharis microcarpa*** Torr. var. ***microcarpa***— {AFP}

***Eleocharis minima*** Kunth— {AFP}

***Eleocharis montana*** (Kunth)Roem. & Schult.— {AFP}

***Eleocharis montevidensis*** Kunth— {AFP}

\**Eleocharis mutata* (L.)Roem. & Schult.— {AFP}  
*Eleocharis nana* Kunth— {AFP}  
 \**Eleocharis nigrescens* (Nees)Steud.— {AFP}  
*Eleocharis obtusa* (Willd.)Schult.— {AFP}  
*Eleocharis olivacea* Torr.— {AFP}  
*Eleocharis parvula* (Roem. & Schult.)Link ex Bluff et al.— {AFP}  
*Eleocharis quadrangulata* (Michx.)Roem. & Schult.— {AFP}  
*Eleocharis radicans* (A.Dietr.)Kunth— {AFP}  
*Eleocharis robbinsii* Oakes— {AFP}  
*Eleocharis rostellata* (Torr.)Torr.— {AFP} State Endangered.  
*Eleocharis tortilis* (Link)Schult.— {AFP}  
*Eleocharis tricostata* Torr.— {AFP}  
*Eleocharis tuberculosa* (Michx.)Roem. & Schult.— {AFP}  
*Eleocharis vivipara* Link— {AFP}

### Fimbristylis {AFP}

1. Annual; style 3-fid; achene trigonous or ovoid [2]
1. Annual or perennial; style 2-fid; achene lenticular [3]
2. Ligule of short hairs; leaf blades flat; spikelets 3-7 mm long, narrowly lanceolate, tip acute; achene sharply trigonous, smooth to finely papillose ... *F. autumnalis*
2. Ligule not evident; leaf blades strongly folded, bifacial; spikelets 2-4 mm long, globose to ovoid, tip rounded; achene ovoid, obscurely trigonous, reticulate-pitted ... *F. littoralis*
3. Ligule not evident or inconspicuous of hairs to 0.1 mm long [4]
3. Ligule of short hairs [7]
4. Annual; leaf blades 0.2-1 mm wide ... *F. vahlii*
4. Perennial; leaf blades 1-3 mm wide [5]
5. Plants 10-60 cm tall; spikelets 2-4 mm long, mostly densely congested; ... *F. cymosa*
5. Plants 40-200 cm tall; spikelets 5-20 mm long, mostly well spaced from each other [6]
6. Leaf bases hardened, coriaceous, reddish or dark brown; often of brackish areas ... *F. castanea*
6. Leaf bases weak, mostly light in color; of freshwater areas ... *F. puberula*
7. Spikeletes 1-2(3), the scales pale light brownish; achene smooth or weakly pitted ... *F. schoenoides*
7. Spikelets (1)3-40, the scales generally reddish or brownish; achene conspicuously pitted or latticed [8]
8. Rhizomes scaly; fertile scales often puberulent ... *F. caroliniana*
8. Rhizomes absent; fertile scales usually glabrous [9]
9. Annual; achene face (1 side) smoothish or with many (20 or more) longitudinal rows of shallow pits or cells, thus finely striate ... *F. tomentosa*
9. Annual or perennial; achene face (1 side) coarsely reticulate, usually with 12 or fewer longitudinal rows of horizontally oriented, rectangular cells [10]
10. Perennial; achene not verrucose ... *F. dichotoma*
10. Annual; achene verrucose, at least apically (sometimes subtle) [11]
11. Leaf blades glabrous, or margins scabrid or ciliolate; warts of achene scattered over body, or rarely achenes smooth ... *F. annua*
11. Leaf blades hirsute-ciliate, at least proximally; warts present only at apex of achene margin ... *F. decipiens*

***Fimbristylis annua*** Kral— Sometimes included in *F. dichotoma*.

***Fimbristylis autumnalis*** (L.)Roem. & Schult.— {AFP}

***Fimbristylis caroliniana*** (Lam.)Fernald— {AFP}

***Fimbristylis castanea*** (Michx.)Vahl— {AFP} Sometimes included in *F. spadicea* (Kral 1971: 105, 132-133; Kral, FNA, vol. 23).

***Fimbristylis cymosa*** R.Br.— {AFP}

***Fimbristylis decipiens*** Kral— Sometimes included in *F. dichotoma*.

***Fimbristylis dichotoma*** (L.)Vahl— {AFP}

\****Fimbristylis littoralis*** Gaudich.— {AFP}

***Fimbristylis puberula*** (Michx.)Vahl— {AFP}

\****Fimbristylis schoenoides*** (Retz.)Vahl— {AFP}

\****Fimbristylis tomentosa*** Vahl— {AFP} Sometimes included in *F. dichotoma* (Kral 1971).

***Fimbristylis vahlii*** (Lam.)Link— {AFP}

\*\****Fuirena umbellata*** Rottb.— {AFP}

## **Fuirena** {AFP}

1. Rhizomes long-creeping; leaves lacking blades or blades to 2 cm long (very rarely to 5 cm long) [2]

1. Rhizomes absent or culms mostly clustered on the rhizome; leaves commonly with blades 2-20 cm long [3]

2. Leaf blades to 2(5) cm long; involucral bract longer than spikelets; spikelets mostly lance-ovoid or lance-cylindric, sessile in terminal cluster or sometimes some peduncled; perianth blade tips acuminate ... *F. longa*

2. Leaf blades to 4 mm long, rarely longer; involucral bract shorter than spikelets; spikelets mostly ovoid, sessile in terminal cluster; perianth blade tips mostly acute ... *F. scirpoidea*

3. Inflorescence 6-20 cm long, with 6-40 spikelet clusters, ... *F. umbellata*

3. Inflorescence 1-3 cm long, with 1-4 spikelet clusters [4]

4. Rhizomes without cormlike shoot buds; sheaths mostly glabrous; perianth blade apex with a subapical apiculus or bristle, rarely lacking ... *F. simplex*

4. Rhizomes with cormlike shoot buds; sheaths glabrous, hispid, or hirsute; perianth blade apex, without subapical, abaxial apiculus or bristle [5]

5. Perianth bristle smooth or weakly antrorsely barbed, not reaching perianth blades ... *F. breviseta*

5. Perianth bristles finely retrorsely barbed, reaching at least base of perianth blades [6]

6. Annual; perianth blade tip long-acuminate to aristate; anthers 0.5-0.7 mm long ... *F. pumila*

6. Perennial; perianth blade tip acuminate; anthers ca. 1 mm long ... *F. squarrosa*  
... *F. umbellata*

***Fuirena breviseta*** (Coville)Coville— {AFP}

***Fuirena longa*** Chapm.— Sometimes included in *F. scirpoidea*.

***Fuirena pumila*** (Torr.)Spreng.— {AFP}

***Fuirena scirpoidea*** Michx.— {AFP}

\*\****Fuirena simplex*** Vahl— {AFP}

***Fuirena squarrosa*** Michx.— {AFP}

***Fuirena umbellata*** Rottb.— {AFP}

## **Isolepis** {AFP}

***Isolepis carinata*** Hook. & Arn. ex Torr.— {AFP}

## Rhynchospora {AFP}

1. Inflorescence bracts involucrate and strikingly white basally (green near the tip), the inflorescence sessile; spikelets pale yellow to white (Dichromena) ... Key A
1. Inflorescence bracts not involucrate, green, the inflorescence usually diffuse and pedunculate [2]
2. Plants to 0.5-2 m tall; leaf blades 1-20 mm wide; style simple or slightly 2-fid; achene tubercle 4-21 mm long (Ceratoschoenus) ... Key B
2. Plants usually <1.5 m tall; leaf blades mostly 0.1-7 mm wide; style deeply 2-divided; achene tubercle 0.1-2 mm long [3]
3. Perianth bristles absent [4]
3. Perianth bristles present, sometimes vestigial [5]
4. Spikelets 3.5-11 mm long, brown to nearly black, with 8-12(15) scales, 5-10(12) fertile, perianth bristles absent; tubercle broad, the base indented or V-shaped with the sides often decurrent or upcurved; usually annual (Psilocarya) ... Key C
4. Spikelets 1.5-3 mm long, brown, with 3-8 scales, 1-2(4) fertile; tubercle base mostly subtruncate to slightly decurrent; perennial ... Key D
5. Perianth bristles plumose (at least at the base) ... Key E
5. Perianth bristles barbellate or smooth [6]
6. Perianth bristles retrorsely barbellate; achene base strongly narrowed and stipe-like (tubercle margins not setulose) ... Key F
6. Perianth bristles antrorsely barbellate or smooth; achene base usually not stipe-like (if stipe-like, then tubercle margins setulose at the base) [7]
7. Achene surface smooth or nearly so, any reticulations or lines faint and scarcely raised or only on part of the body, sometimes the only the middle part of the body smooth ... Key G
7. Achene surface prominently reticulate or ridged, the lines and ridges distinctly raised throughout the body ... Key H

### Key A: Dichromena

1. Plant caespitose; proximal floral scales ciliolate on the keel; achene body 0.8-1 mm long ... *R. floridensis*
1. Plant rhizomatous; proximal floral scales glabrous; achene body 1-1.5 mm long [2]
2. Rhizomes 1-2 mm wide; involucre bracts 3-6(7), 2-7 mm wide, white portion 1-2.5 cm long; achene tubercle base subtruncate ... *R. colorata*
2. Rhizomes 3-4 mm wide; involucre bracts (5)6-8, 5-10 mm wide, white portion 2.2-5.5 cm long; achene tubercle base angled-decurrent ... *R. latifolia*

### Key B: Ceratoschoenus

1. Leaf blades 2-4 mm wide; spikelets in globose clusters; tubercle barely exerted; spikelet 5-7 mm long (Polycephalae) ... *R. tracyi*
1. Larger spikelet clusters dense or open, hemispheric to turbinate; tubercle tip long exerted; spikelets 9-18 mm long (Longirostres) [2]
2. Plant with scaly rhizomes [3]
2. Plant without scaly rhizomes [4]
3. Rhizomes 3-4 mm wide; longer leafy bracts usually overtopped by inflorescence; achene 2.8-3.5 mm wide, widest above the middle, the perianth bristles subequal to the achene body ... *R. careyana*
3. Rhizomes 1-2 mm wide; longer leafy bracts extending beyond inflorescence; achene 2-3 mm wide, widest near the middle, the perianth bristles ca. 2 times as long as achene body ... *R. inundata*



- 4. Inflorescence elongate- or spreading-diffuse, with clusters typically of few, spaced spikelets; perianth bristles ca. 1/2 as long as achene body ... *R. corniculata*
- 4. Inflorescence shortly or narrowly compact, with clusters of numerous, densely packed spikelets; perianth bristles ca. 2 times as long as achene body ... *R. macrostachya*

#### Key C

- 1. Tubercle deltate-lanceolate, as long as or longer than wide, 0.4-0.7 mm long ... *R. scirpoides*
- 1. Tubercle broad and low, much wider than long, 0.1-0.3 mm long [2]
- 2. Achene body lacking light-colored bands, the tubercle base upcurved at the sides ... *R. eximia*
- 2. Achene body with prominent, transverse irregularly undulate light-colored bands, the tubercle bases descending or decurrent at the sides ... *R. nitens*

#### Key D

- 1. Achene body 0.6-0.9 mm long, tubercle 0.1 mm wide and perched atop the achene body, its margins discontinuous [2]
- 1. Achene body 1-1.3 mm long, tubercle 0.2-0.5 mm wide and its margins confluent with the apex of the achene body [3]
- 2. Achene surface reticulate ... *R. divergens*
- 2. Achene surface with prominent transverse bands ... *R. pusilla*
- 3. Leaf blades 0.4-1 mm wide; achene surface smoothish with a finely reticulate pattern ... *R. chapmanii*
- 3. Leaf blades 1-2.5 mm wide; achene surface strongly ridged-reticulate ... *R. perplexa*

#### Key E

- 1. Spikelets 1-3(5) per culm, each well separated from adjacent ones [2]
- 1. Spikelets (2)4-30 per culm, in dense clusters [3]
- 2. Spikelet with 3-8 fertile scales; perianth bristles not reaching the middle of the achene body; tubercle merely widest at the base ... *R. galeana*
- 2. Spikelets with 1-3 fertile scales; perianth bristles exceeding the middle of the achene body; tubercle distinctly flared above the base ... *R. oligantha*
- 3. Spikelets 8-10 mm long; perianth bristles 5-8 mm long ... *R. megaplumosa*
- 3. Spikelets 2.5-7(8) mm long; perianth bristles 0.3-2.5 mm long [4]
- 4. Leaf blades linear, 1-3 mm wide; spikelets (3.5)4-6 mm long; basal leaf sheaths dark reddish brown ... *R. intermedia*
- 4. Leaf blades filiform, 0.3-0.9(1) mm wide; spikelets 2.5-3.5(4) mm long; basal leaf sheaths dark reddish brown or pale brown [5]
- 5. Basal leaf sheaths dark reddish brown, semi-lustrous; perianth bristles reaching or exceeding the tubercle apex, plumose only at the very base ... *R. marliniana*
- 5. Basal leaf sheaths pale brown, dull; perianth bristles exceeding to not reaching the tubercle apex, plumose throughout the basal half ... *R. plumosa*

#### Key F

- 1. Spikelets pale brown; perianth bristles 14-20 ... *R. macra*
- 1. Spikelets pale brown or dark reddish brown; perianth bristles 6 [2]
- 2. Spikelets with (1)2-3(5) fruits (if 1, then the terminal floret sterile) [3]
- 2. Spikelets with 1 fruit (terminating the spikelet) [4]
- 3. Widest glomerule (12)15-21 mm wide; perianth bristles 3-4.7 mm long; fruit (including tubercle) (3)3.2-3.8 mm long, (1)1.1-1.4 mm wide, the achene body with a prominent raised margin ... *R. glomerata*

- 3. Widest glomerule 6.5-14(16) mm wide; perianth bristles 2.9-3.6 mm long; fruit (including tubercle) 2.4-3.0 mm long, 0.7-1.1 mm wide, the achene body margin not prominent or only slightly so ... *R. leptocarpa*
- 4. Spikelets mostly pale red brown, narrowly ellipsoid to lanceoloid, in turbinate to hemispheric clusters; fruit (including tubercle) (2.5)2.7-3.3(3.5) mm long; tubercle 0.2-0.4 mm wide at base ... *R. chalarocephala*
- 4. Spikelets dark red brown, broadly lanceoloid, in dense, mostly globose clusters; fruit (including tubercle) 2.5-4.5 mm long; tubercle 0.4-0.8 mm wide at base [5]
- 5. Glomerules mostly 1-2 cm wide; fruit (including tubercle) 3.5-4(4.2) mm long, achene body 1-1.5(2) mm wide ... *R. cephalantha*
- 5. Glomerules mostly 0.5-1 cm wide; fruit (including tubercle) 2.5-3 mm long, achene body 0.9-1.1 mm wide ... *R. microcephala*

#### Key G

- 1. Tubercle margins (and often pedicellar joint and perianth bristle bases) setulose or ciliate; most perianth bristles exceeding the achene body and often reaching or exceeding the tubercle [2]
- 1. Tubercle margins (and pedicellar joint, the perianth bristle bases) smooth or not setulose (if somewhat setulose, then perianth bristles shorter than to reaching the achene body apex) [6]
- 2. Leaf blades (1.5)2-4(5) mm wide; achene base narrowly cuneate-stipitate ... *R. crinipes*
- 2. Leaf blades 0.4-2 mm wide; achene base rounded, truncate, to cuneate, not stipitate or scarcely so [3]
- 3. Achene narrowly obovate, 1.8-2.2 times as long as wide ... *R. curtissii*
- 3. Achene ovate to obovate, 1.2-1.5 times as long as wide [4]
- 4. Spikelets 2.5-4 mm long ... *R. filifolia*
- 4. Spikelets (4.5)5-7 mm long [3]
- 5. Rhizomes or stolons absent; plant 10-40(50) cm tall ... *R. harperi*
- 5. Rhizomatous or stoloniferous; plant 40-70 cm tall ... *R. pleiantha*
- 6. Leaf blades 3-7 mm wide; spikelets 4-8 mm long [7]
- 6. Leaf blades 0.2-3(4) mm wide [9]
- 7. Spikelets 4-8(9) mm long; achene body 2.8-4 mm long, dark brown-purple to black ... *R. megalocarpa*
- 7. Spikelets 4-6 mm long; achene body 1.5-2.5 mm long, brown to dark brown [8]
- 8. Culms triquetrous, scabrid; perianth bristles 12 ... *R. baldwinii*
- 8. Culms terete or obscurely trigonous, papillose to scabrid-puberulent; perianth bristles 6 ... *R. ciliaris*
- 9. Fruit (including tubercle) 1-1.6 mm long [10]
- 9. Fruit (including tubercle) (1.5)1.7-3.5(4.1) mm long [11]
- 10. Perianth bristles not extending beyond the middle of the achene ... *R. brachychaeta*
- 10. Perianth bristles extending past the middle of the achene, some reaching the apex ... *R. fernaldii*
- 11. Tubercle 1.2-2 mm long, gradually narrowed, 0.8-1.2 times as long as the achene body, perianth bristles reaching just below tubercle apex to exceeding it ... *R. gracilentia*
- 11. Tubercle 0.5-0.9 mm long, often indented or abruptly narrowed, 0.3-0.6 times as long as the achene body, the perianth bristles not reaching tubercle base to reaching just the middle [12]
- 12. Leaves (1)1.5-3(4) mm wide ... *R. fascicularis*
- 12. Leaves 0.2-1.5(2.5) mm wide [13]
- 13. Fruit tubercle flat, sometimes apiculate; perianth none or more often vestigial, no bristles reaching beyond midbody of fruit ... *R. debilis*

13. Fruit tubercle tip subulate or blunt; perianth bristles mostly reaching fruit midbody to apex ...  
*R. wrightiana*

#### Key H

1. Leaf blades 0.2-0.5 mm wide [2]
1. Leaf blades 1-7(10) mm wide [4]
2. Fruit (including tubercle) 0.9-1 mm long, with a distinct flattened margin, the transverse ridges scarcely if at all more prominent than the vertical ones ... *R. thornei*
2. Fruit (including tubercle) 1.8-3 mm long, the margin indistinct, the transverse ridges much more prominent than the vertical ones [3]
3. Spikelets 3-4(4.5) mm long, with 2-4 fruits or with 1 fruit and a sterile terminal floret; perianth bristles not reaching achene middle or rarely so; tubercle 0.3-0.6 mm long ... *R. rariflora*
3. Spikelets 4.5-5.2 mm long, with 1 fruit (terminal) per spikelet; perianth bristles reaching or extending past the tubercle base; tubercle 0.8-1.5 mm long ... *R. stenophylla*
4. Fruit (including tubercle) 2-3.2 mm long [5]
4. Fruit (including tubercle) 1-2(2.1) mm long [13]
5. Achene 1.8-2.7 times as long as wide ... *R. inexpansa*
5. Achene body 0.9-1.4 times as long as wide [6]
6. Spikelets 5-8(9) mm long; achene pale yellow-brown; rhizomatous ... *R. odorata*
6. Spikelets (3)4-5(6) mm long; achene brown to very dark brown; mostly cespitose, or rhizomatous in *R. caduca* [7]
7. Achene strongly compressed, faces nearly flat [8]
7. Achene rounded to subtly compressed, faces convex [9]
8. Perianth bristles extending slightly past the achene mid-body or less; tubercle conic, flared at the base into a distinct bulging rim ... *R. compressa*
8. Perianth bristles reaching tubercle base or beyond; tubercle somewhat compressed, gradually narrowed to the sometimes slightly bulging rim ... *R. punctata*
9. Rhizomatous; tubercle uniform throughout, without a distinct base ... *R. caduca*
9. Cespitose; tubercle base usually with a distinct rim different in color and texture from the rest of the tubercle [10]
10. Fruit 2.5-3 mm; spikelets 4-5.5 mm; perianth reaching past fruit midbody ... *R. grayi*
10. Fruit 2-2.5 mm; spikelets 2.5-4 mm; perianth not reaching past fruit mid-body [11]
11. Leaves 2-5 mm wide; achene coarsely rugose ... *R. recognita*
11. Leaves 1-3 mm wide; achene finely rugose to minutely pitted [12]
12. Terminal spikelet clusters on stiffish branchlets, usually dense and exceeded at least by subulate tips of subtending leafy bract and bractlets; achene body broadly obovoid to suborbicular, medially with mostly isodiametric tiny alveoli or pits, or minutely raised reticulate in an almost honeycomb pattern of alveolae, or evenly finely cancellate ... *R. harveyi* var. *harveyi*
12. Terminal spikelet clusters on more slender, lax, erect to excurved branches and exceeding subtending bracts and bractlets; achene body obovoid, lenticular, medially with oblong or roundish pitlike alveoli, intervals between contiguous transverse rows forming shallow, broad, pale, smooth ridges ... *R. harveyi* var. *culixa*
13. Plant with stout, elongate rhizomes, 1.5-4 mm thick, 4-30 cm long; inflorescence branches nearly perpendicular to main axis, each spikelet on an elongate, filiform peduncle ... *R. miliacea*
13. Plant cespitose; inflorescence branches mostly ascending to erect, sometimes spreading-ascending, the spikelets clustered together on short peduncles [13]
14. Tubercle conic, the base flared with a distinct rim discontinuous from the achene body, the achene body tip narrower than the tubercle rim [14]

14. Tubercle somewhat flat, the base distinct but its margins continuous with the achene body [15]
15. Spikelets broadly ovoid to subglobose; achene body distinctly transversely wavy-rugose, intervals composed of irregular rows of vertical, rectangular alveolae ... R. globularis var. globularis
15. Spikelets ovoid; achene body subtly transversely wavy rugose, mostly with transverse, undulate rows of subisodiametric to very broadly rectangular lattices or alveolae ... R. globularis var. pinetorum
16. Perianth bristles 0-3, scarcely reaching the middle of the achene ... R. perplexa
16. Perianth bristles 6, extending past the middle of the achene to past the tubercle tip [16]
17. Tubercle base downcurved, the margin somewhat decurrent with the achene body ... R. decurrens
17. Tubercle base mostly straight, horizontal [17]
18. Tubercle moderately to densely setulose ... R. mixta
18. Tubercle margin smooth, papillate, to sparsely ciliolate [18]
19. Achene faces mostly flat ... R. elliottii
19. Achene faces convex, sometimes somewhat flattened [19]
20. Inflorescence comprising 0.6-0.8 of the culm length; spikelets 1.5-1.9 mm long; achene 0.7-1 mm long ... R. sulcata
20. Inflorescence comprising 0.1-0.4(0.5) of the culm length; spikelets 2-3 mm long; achene 1-1.2 mm long [20]
21. Plants slender, mostly less than 1 meter tall, with leaves typically <40 cm long and <3 mm wide; inflorescence cluster branches ascending, the clusters mostly tightly congested; perianth bristles subequal, 0.5-1.5 times as long as the achene body; achene 1.0-1.7 times as long as wide, dark brown, shallowly nearly horizontally ridged or with nearly isodiametric alveolae, ridges 7-9 ... R. microcarpa
21. Plants robust, taller culms 1.2-1.4(1.7) m tall, with leaves (11)40-60(88) cm long and (2)3-5(7) mm wide; Inflorescence cluster branches widely spreading in flower, spreading to ascending in fruit, the clusters rather open, not congested; perianth bristles unequal, 0.9-1.5 times as long as the achene body; achene 1.0-1.2 times as long as wide, light brown, strongly transversely ridged with 6-8 irregular ridges and narrow rectangular alveolae ... R. vernalis

***Rhynchospora baldwinii*** A.Gray— {AFP}

***Rhynchospora caduca*** Elliott— {AFP}

***Rhynchospora careyana*** Fernald—

***Rhynchospora cephalantha*** A.Gray— {AFP}

***Rhynchospora chalarocephala*** Fernald & Gale— {AFP}

***Rhynchospora chapmanii*** M.A.Curtis— {AFP}

***Rhynchospora ciliaris*** (Michx.)C.Mohr— {AFP}

***Rhynchospora colorata*** (L.)H.Pfeiff.— {AFP}

***Rhynchospora compressa*** J.Carey ex Chapm.— {AFP}

***Rhynchospora corniculata*** (Lam.)A.Gray— {AFP}

***Rhynchospora crinipes*** Gale— {AFP} State Endangered.

***Rhynchospora curtissii*** Britton ex Small— {AFP}

***Rhynchospora debilis*** Gale— {AFP}

***Rhynchospora decurrens*** Chapm.— {AFP}

***Rhynchospora divergens*** Chapm. ex M.A.Curtis— {AFP}

***Rhynchospora elliottii*** A.Dietr.— {AFP}

***Rhynchospora eximia*** (Nees)Boeck.— {AFP}

*Rhynchospora fascicularis* (Michx.)Vahl— {AFP}  
*Rhynchospora fernaldii* Gale— {AFP}  
*Rhynchospora filifolia* A.Gray— {AFP}  
*Rhynchospora floridensis* (Britton ex Small)H.Pfeiff.— {AFP}  
*Rhynchospora galeana* Naczi et al.— {AFP}  
*Rhynchospora globularis* (Chapm.)Small var. **globularis**—{AFP}  
*Rhynchospora globularis* (Chapm.)Small var. **pinetorum** (Britton & Small)Gale—  
*Rhynchospora glomerata* (L.)Vahl— {AFP}  
*Rhynchospora gracilentata* A.Gray— {AFP}  
*Rhynchospora grayi* Kunth— {AFP}  
*Rhynchospora harperi* Small— {AFP}  
*Rhynchospora harveyi* W.Boott var. **culixa** (Gale)Kral—  
*Rhynchospora harveyi* W.Boott var. **harveyi**— {AFP}  
*Rhynchospora inexpansa* (Michx.)Vahl— {AFP}  
*Rhynchospora intermedia* (Chapm.)Britton— {AFP}  
*Rhynchospora inundata* (Oakes)Fernald— {AFP}  
*Rhynchospora latifolia* (Baldwin)W.W.Thomas— {AFP}  
*Rhynchospora leptocarpa* (Chapm. ex Britton)Small— {AFP}  
*Rhynchospora macra* (C.B.Clarke ex Britton)Small— {AFP}  
*Rhynchospora macrostachya* Torr. ex A.Gray— {AFP}  
*Rhynchospora marliniana* Naczi et al.— {AFP}  
*Rhynchospora megalocarpa* A.Gray— {AFP}  
*Rhynchospora megaplumosa* E.L.Bridges & Orzell— {AFP} Endemic. State Endangered.  
*Rhynchospora microcarpa* Baldwin ex A.Gray— {AFP}  
*Rhynchospora microcephala* (Britton)Britton ex Small— {AFP}  
*Rhynchospora miliacea* (Lam.)A.Gray— {AFP}  
*Rhynchospora mixta* Britton ex Small— {AFP}  
*Rhynchospora nitens* (Vahl)A.Gray— {AFP}  
*Rhynchospora odorata* C.Wright ex Griseb.— {AFP}  
*Rhynchospora oligantha* A.Gray— {AFP}  
*Rhynchospora perplexa* Britton ex Small— {AFP}  
*Rhynchospora pleiantha* (Kük.)Gale— {AFP}  
*Rhynchospora plumosa* Elliott— {AFP}  
*Rhynchospora punctata* Elliott— {AFP}  
*Rhynchospora pusilla* Chapm. ex M.A.Curtis— {AFP}  
*Rhynchospora rariflora* (Michx.)Elliott— {AFP}  
*Rhynchospora recognita* (Gale)Kral— Sometimes included under *R. globularis*.  
*Rhynchospora scirpoides* (Torr.)A.Gray— {AFP}  
*Rhynchospora stenophylla* Chapm.— {AFP} State Threatened.  
*Rhynchospora sulcata* Gale— {AFP}  
*Rhynchospora thornei* Kral— {AFP}  
*Rhynchospora tracyi* Britton— {AFP}  
*Rhynchospora vernalis* E.L. Bridges & Orzell— Endemic. North and central peninsula.  
*Rhynchospora wrightiana* Boeck.— {AFP}

Schoenoplectiella {AFP}

*Schoenoplectiella erecta* (Poir.)Lye subsp. **raynalii** (Schuyler)Beentje— {AFP}

## Schoenoplectus {AFP}

1. Inflorescence pedunculate (at least partly so) [2]
1. Inflorescence sessile or subsessile [3]
2. Culms sharply trigonous; leaves 5-25, 2-6+ having blades; spikelets 10-25 mm long, 5-7 mm wide; anthers 3-3.5 mm long; achenes 3-4.5 mm long ... *S. etuberculatus*
2. Culms terete to obscurely or bluntly trigonous; leaves 3-4, 0-2 having blades; spikelets 5-11(17) mm long, 2.5-4 mm wide; anthers 1.5-2 mm long; achenes 1.5-2.8 mm long [3]
3. Perianth with 2-4 straplike bristles, these lacerate to fimbriate, reddish ... *S. californicus*
3. Perianth with 6 bristles, these retrorsely barbed, brownish ... *S. tabernaemontani*
4. Culms 0.5-1 mm wide; leaf blades 0.2-1 mm wide; spikelets 1 ... *S. subterminalis*
4. Culms 5-20 mm wide; leaf blades 2-9 mm wide; spikelets 1-35 [5]
5. Distal leaf blade 0.5-0.9(1.5) times as long as sheath; inflorescence bract 1-6 cm long; spikelet scale notch 0.1-0.4 mm deep, the awn 0.2-0.6 mm long ... *S. americanus*
5. Distal leaf blade (0.9)1.2-3 times longer than the sheath; inflorescence bract (1)3-20 cm long; spikelet scale notch (0.3)0.5-1 mm deep, the awn 0.5-1.5(2.5) mm long [6]
6. Spikelets 3-35; distal leaf blade 0.9-1.5 times longer than the sheath; achenes 1.9-2.6 mm long; styles 2-fid ... *S. deltarum*
6. Spikelets 1-5(10); distal leaf blade (1)1.5-3 times longer than the sheath; achenes (2)2.5-3.5 mm long; styles 2- or 3-fid ... *S. pungens*

***Schoenoplectus americanus*** (Pers.)Volkart ex Schinz & R.Keller— {AFP}

***Schoenoplectus californicus*** (C.A.Mey.)Soják— {AFP}

***Schoenoplectus deltarum*** (Schuyler)Soják— {AFP}

***Schoenoplectus etuberculatus*** (Steud.)Soják— {AFP}

***Schoenoplectus pungens*** (Vahl)Palla— {AFP}

***Schoenoplectus subterminalis*** (Torr.)Soják— {AFP}

***Schoenoplectus tabernaemontani*** (C.C.Gmel.)Palla— {AFP}

## Schoenus {AFP}

***Schoenus nigricans*** L.— {AFP}

## Scirpus {AFP}

1. Spikelets to ca. 700 per culm, with the perianth bristles long-exserted, giving the spikelet a woolly appearance; achene 0.6-0.9 mm long, 0.3-0.5 mm wide ... *S. cyperinus*
1. Spikelets to ca. 250 per culm, with the perianth bristles not or only scarcely exserted, not at all woolly in appearance; achene 0.8-1.7 mm long, 0.6-0.8 mm wide [2]
2. Spikelet 1-2 mm wide; spikelet scales 1-1.8 mm long; perianth bristles smooth to toothed; achene 0.8-1 mm long, strongly trigonous with flat to concave faces ... *S. divaricatus*
2. Spikelet 2-3 mm wide; spikelet scales 1.8-2.5 mm long; perianth bristles smooth; achene 1-1.5 mm long, plano-convex to trigonous with convex sides [3]
3. Mature culms reclining, inflorescences bending to (or nearly to) ground, with 2-3 lateral inflorescences in axils of distal leaves in addition to terminal inflorescence; rays and pedicels scabrous or scabrellous throughout or only in distal 1/2, often proliferous with axillary bulblets ... *S. lineatus*
3. Mature culms erect or ascending, with terminal inflorescences only or sometimes with 1(2) lateral inflorescences in axils of distal leaves; rays and pedicels scabrous near nodes, otherwise smooth, axillary bulblets absent ... *S. pendulus*

***Scirpus cyperinus*** (L.)Kunth— {AFP}

***Scirpus divaricatus*** Elliott— {AFP}

***Scirpus lineatus*** Michx.— {AFP}

***Scirpus pendulus*** Muhl.— {AFP}

**Scleria** {AFP} Several species have recently colonized Florida. If any arrived by natural means, can they be considered native?

subg. Hypoporum: *S. distans*, *S. lithosperma*, *S. verticillata*

subg. Trachylomia: *S. baldwinii*, *S. ciliata*, *S. georgiana*, *S. oligantha*, *S. triglomerata*

subg. Scleria, sect. Margaleia: *S. lacustris*

subg. Scleria, Foveolidia: *S. reticularis*

subg. Scleria, Ophryoscleria: *S. eggertiana*, *S. microcarpa*

subg. Scleria, sect. Scleria: *S. gaertneri*

1. Hypogynium present at the achene base, marginate, ciliate, lobed, tuberculate, or papillose (sometimes obscured by a ciliate-margined cupule) [2]
1. Hypogynium absent or vestigial, the tapered and lobed or indented achene base naked and visible [9]
2. Leaf blades 10–25 mm wide [3]
2. Leaf blades 1–11 mm wide [4]
3. Main stem smooth; cupule with marginal red-brown cilia concealing the eciliate hypogynium ... *S. eggertiana*
3. Main stem strongly retrorsely scabrous; cupule absent, the hypogynium without cilia ... *S. lacustris*
4. Hypogynium with papillose tubercles [5]
4. Hypogynium lobed or obscurely angled and crustose [6]
5. Hypogynium with 3 or 6 tubercles; achene ridged to tuberculate, sometimes faintly so (*S. ciliata* complex) ... Key A
5. Hypogynium with 8–9 tubercles; achene smooth ... *S. oligantha*
6. Hypogynium narrower than achene body, a papillose continuous crust, obscurely angled (*S. triglomerata* complex) ... Key B
6. Hypogynium wider than achene body, lobed [7]
7. Achene ridged, verrucose, sometimes faintly so, often pubescent but sometimes glabrate (*S. reticularis* complex) ... Key C
7. Achene smooth, glabrous [8]
8. Achene often with dark coloration, depressed globose (wider than long), without a cupule, the hypogynium lacking cilia ... *S. gaertneri*
8. Achene white, ovoid (longer than wide), cupule with sparse cilia concealing the eciliate hypogynium ... *S. microcarpa*
9. Inflorescence a single terminal cluster [10]
9. Inflorescence of few to several separated spikes (subg. Hypoporum) [11]
10. Achenes 3–4 mm long, base not papillose or granulose ... *S. baldwinii*
10. Achenes 2–3 mm long, base with papillose or granulose ... *S. georgiana*
11. Contra-ligules well-developed, ciliate; subtending bracts conspicuous and exceeding the spikes ... *S. lithosperma*
11. Contra-ligules inconspicuous; subtending bracts inconspicuous, not exceeding the spikes [12]

12. Plants rhizomatous; leaves pubescent or rarely glabrous; achene smooth ... *S. distans*  
 12. Plants without rhizomes; leaves glabrous; achene ridged ... *S. verticillata*

#### Key A

1. Achenes reticulate-ridged ... *S. curtissii*  
 1. Achenes tuberculate, verrucose, papillate, or nearly smooth [2]  
 2. Leaves 1–2.5 mm wide; hypogynium with 6 distinctly separate tubercles arranged in pairs; achenes 1–2.5 mm long [3]  
 2. Leaves 1–7 mm wide; hypogynium with 3 tubercles (these sometimes 2-lobed) or 6 tubercles; achenes 2–3.6 mm long [4]  
 3. Plants glabrous or sparsely to densely hairy, hairs 0.1–0.4 mm long ... *S. pauciflora* var. *pauciflora*  
 3. Plants copiously villous-ciliate with spreading hairs 0.5–1 mm long on culms, leaves, and bracts ... *S. pauciflora* var. *caroliniana*  
 4. Culm 40–100 cm tall; primary terminal bract 2–5 mm wide, cilia 1–2.2 mm long; hypogynium with 6 (rarely 3 deeply lobed) tubercles, the basal rim 1.4–1.8(2.1) mm wide; achenes smooth or nearly so, papillate only at the base ... *S. bellii*  
 4. Culm (15)30–70(75) cm tall; primary terminal bract 0.4–4.1 mm wide, cilia (0)0.1–1.1(1.3) mm long; hypogynium with 3 tubercles (these sometimes 2-lobed), the basal rim (0.6)0.8–1.4(1.6) mm wide; achenes usually ridged or reticulate and papillose throughout [5]  
 5. Culms, leaves, and bracts glabrate, not ciliate ... *S. ciliata* var. *glabra*  
 5. Culms hairy; leaves and bracts ciliate [6]  
 6. Leaves 1–3.5 mm wide; achenes 2–3 mm long, 1.5–2.3 mm wide ... *S. ciliata* var. *ciliata*  
 6. Leaves (2.5)3.5–7 mm wide; achenes 2.6–3.6 mm long, 2–2.6 mm wide ... *S. ciliata* var. *elliottii*

#### Key B

1. Leaves 1–2.5 mm wide; achenes 1.5–2 mm long ... *S. minor*  
 1. Leaves 3–9 mm wide; achenes 2–3 mm long [2]  
 2. Rhizomes knotty; leaf sheath contraligule (sheath apex) adaxial membranous band glabrescent, sharply differentiated from the basal line (ligule of the contraligule) marking the transition from the sheath; achenes 2–2.5 mm long, 2–2.8 mm wide ... *S. triglomerata*  
 2. Rhizomes elongate or not; leaf sheath contraligule (sheath apex) adaxial membranous band puberulent to tomentulose, indistinct from the basal line (ligule of the contraligule) marking the transition from the sheath; achenes (2)2.8–3.3 mm long [3]  
 3. Culms cespitose; inflorescence terminal and lateral; hypogynium covered with lance-acuminate scale-like laminae; of mesic to hydric areas ... *S. flaccida*  
 3. Culms along elongate rhizomes; inflorescence only terminal; hypogynium tuberculate; of mesic to xeric areas ... *S. nitida*

#### Key C

1. Culm 20–90(125) cm long; terminal stem internode 6–30 cm long; proximalmost lateral panicle spreading or drooping on filiform, flexuous peduncle (15)20–100 mm long; distalmost lateral panicle with bract (including sheath) usually 1/4–3/4 length of terminal internode; pistillate scales mostly 4–5 mm long; achene usually with tufts or lines of tawny hairs on ridges, rarely glabrous ... *S. reticularis* var. *pubescens*  
 1. Culms (6)15–50 cm long; terminal stem internode usually 3–8 cm long; proximalmost lateral panicle erect, on stiff erect peduncle 0–20(90) mm long; distalmost lateral panicle with bract (including sheath) usually 3/4 or more length of terminal internode; pistillate scales mostly 3–4 mm long; achene glabrous ... *S. reticularis* var. *reticularis*



***Scleria baldwinii*** (Torr.) Steud.— {AFP}

***Scleria ciliata*** Michx.— {AFP} Discussing the group broadly (*S. ciliata*, *S. curtissii*, and *S. pauciflora*), [Kessler \(1987\)](#) stated that "The intergradation of achene size and tuberculation make it difficult, if not impossible, to determine some specimens based solely on an examination of achenes. Scales, pubescence, culm length, and culm diameter also intergrade." The rather sporadic distribution given for *S. bellii* (keyed out above) ([LeBlond et al. 2015](#)) suggests the morphotype may have arisen multiple times independently.

***Scleria curtissii*** Britton—

***Scleria distans*** Poir.— {AFP}

***Scleria eggersiana*** Boeck.— {AFP}

***Scleria gaertneri*** Raddi— {AFP}

***Scleria georgiana*** Core— {AFP}

***Scleria lacustris*** C. Wright— {AFP}

***Scleria lithosperma*** (L.) Sw.— {AFP} State Endangered.

***Scleria microcarpa*** Nees ex Kunth— {AFP}

***Scleria minor*** Stone—Of this taxon, [Fairey, III \(1967\)](#) wrote "there is some intergradation with *Scleria triglomerata* producing transitional forms, although this intergradation seems to be minimal." and similarly [Kessler \(1987\)](#) noted "that a series of variations occurs between *S. triglomerata* and *S. minor*".

***Scleria oligantha*** Michx.— {AFP}

***Scleria pauciflora*** Muhl. ex Willd.—

***Scleria reticularis*** Michx. var. ***pubescens*** Britton— {AFP} Sometimes treated as the species *S. muehlenbergii*, i.e. it "appears to be geographically, ecologically, and morphologically distinct" but "More study is clearly needed" ([Reznicek et al., FNA vol. 23](#)). As a variety, the oldest epithet is perhaps *S. bracteata* var. *angusta*. [Fairey, III \(1967\)](#) remarked that "size variation among the two varieties is great, therefore, size alone cannot be taken as a definitive character for separating the two forms" and "Transitional forms can be traced from the common extreme form of var. *pubescens* through a line of forms in which the pubescence is gradually reduced to small distant tufts on the achenes, and finally to a form with glabrous achenes". [Kessler \(1987\)](#) treated *S. reticularis* as a polymorphic species, noting that it "is often difficult to determine where one variety [e.g. *pubescens*] ends and another begins".

***Scleria reticularis*** Michx. var. ***reticularis***— {AFP}

***Scleria triglomerata*** Michx.— {AFP} The entities *S. flaccida* and *S. nitida* are keyed out above, but [Fairey, III \(1967\)](#) felt that "Such forms probably represent only expected minor variations in a large population group and do not warrant segregation into ranks higher than formae." [Kessler \(1987\)](#) wrote that *S. flaccida* and *S. nitida* "represent variations of *S. triglomerata*, and their classification as separate species can not be justified."

***Scleria verticillata*** Muhl. ex Willd.— {AFP}

## JUNCACEAE {AFP}

1. Leaves glabrous; fruits with 1 or 3 locules; seeds many ... *Juncus*

1. Leaves hairy; fruits with 1 locule; seeds 3 ... *Luzula*

## *Juncus* {AFP}

1. Leaf blades absent (only scales or sheaths present), or 1-3, terete and primarily basal; basalmost inflorescence bract solitary, stiffly erect, essentially confluent with the culm and exceeding the inflorescence, the inflorescence appearing lateral ... Key A

1. Leaf blades present (sometimes 1-3, terete, and basal); basalmost inflorescence bracts 1-many, erect to laxly spreading, shorter to longer than the inflorescence, sometimes the larger bract appearing confluent with the culm, the inflorescence generally appearing terminal [2]
2. Leaves not septate (or if septate, most flowers solitary); flowers borne singly or (1)2-12(20) per glomerule or head ... Key B
2. Leaves septate (incomplete sometimes); flowers 2-60 per glomerule or head ... Key C

#### Key A

1. Leaf blades 1-3 and basal; flowers sessile and 2-6 per glomerule or head; of brackish to marine habitats ... *J. roemerianus*
1. Leaf blades absent or 1-2 and basal; flowers borne singly, distributed along the inflorescence branches, sometimes pedicellate; of freshwater to slightly brackish habitats [2]
2. Leaf blades (0)1(2), usually present on some culms; fruit 3.5-5 mm long, subglobose, 1-locular ... *J. coriaceus*
2. Leaf blades absent; fruit 1.5-3.2 mm long, trigonous, 3-locular [3]
3. Culms densely clumping on the short rhizome; stamens 3; fruit subequal to the tepals, mostly broadly rounded to emarginate ... *J. effusus* subsp. *solutus*
3. Culms solitary along the creeping rhizome; stamens 6; fruit longer than the tepals, usually tapered and apiculate ... *J. gymnocarpus*

#### Key B

1. Flowers sessile and (1)2-12(20) per glomerule or head [2]
1. Flowers borne singly (infrequently in clusters of 2-3), distributed along the inflorescence branches, sometimes pedicellate [5]
2. Annual or short-lived perennial; culms submersed, floating, or terrestrial and weak, often repent and mat-forming; leaves often in fascicles; fruit 3.5-5.5 mm long; seeds 0.3-0.4 mm long ... *J. repens*
2. Perennial; culms mostly erect to ascending; leaves solitary and scattered along the culm; fruit 1.8-2.9 mm long; seeds 0.4-0.7 mm long [3]
3. Rhizome internode width (0.8)1.0-1.4(1.9) mm, longest distance between adjacent rhizome cataphylls (5.3)6.3-10.5(13.0) mm; infructescence usually congested, (1.8)2.4-4.7(6.4) cm long ... *J. longii*
3. Rhizome internode width (0.4)1-3.5(4.5) mm, longest distance between adjacent rhizome cataphylls (0.1)0.4-3(4.6) mm; infructescence usually loose, sometimes congested, (1.4)17.9-103.9(145) cm long [4]
4. Tallest culm (27.2)50.8-81.2(100.7) cm, stem base (3.4)5.8-9.6(12) mm wide; sheath of lowest leaf (3.2)4.3-7.8(9.7) cm long; widest leaf blade (2.6)3.1-4.5(5.4) mm wide; anthers (0.5)0.6-1.0(1.3) mm long, exserted ... *J. biflorus*
4. Tallest culm (19.2)26.0-44(56.8) cm, base (0.4)2.0-4.4(6) mm wide; sheath of lowest leaf (1.7)2.2-3.8(4.7) cm long; widest leaf blade (1.3)1.6-2.6(3.5) mm wide; anthers (0.2)0.3-0.5(0.7) mm long, concealed by tepals ... *J. marginatus*
5. Annual, to 40 cm tall or long; inflorescence length 0.3-0.7 as long as the entire aboveground part of the plant ... *J. bufonius*
5. Perennial, 10-100 cm tall; inflorescence length 0.03-0.3 as long as the entire aboveground part of the plant [6]
6. Inflorescence diffuse, (2)6-25 cm long, (1)2-15 cm wide; fruit 1.5-3.5 mm long, the apex gradually tapering into a beak; leaf sheath auricle 0.3-1 mm long, membranous ... *J. abortivus*

6. Inflorescence relatively compact to somewhat spreading, 1-8(12) cm long, 1-7(9) cm wide; fruit (2.5)2.8-4.7 mm long, the apex rounded, retuse, to abruptly narrow to a beak; auricle 0.2-5 mm long, scarious or membranous [7]
7. Auricle at summit of leaf sheath 0.2-0.6(1) mm long, scarious, hyaline-margined; anthers 0.4-0.8 mm long; seed 0.3-0.4 mm long ... *J. dichotomus*
7. Auricles at summit of leaf sheath 1-3(5) mm long, membranous to subcoriaceous, not hyaline-margined; anthers 0.1-0.2 mm long; seed 0.5-0.7 mm long ... *J. tenuis*

#### Key C

1. Seeds tailed, 1–2.6 mm long (including tail); seed body covered with whitish translucent veil [2]
1. Seeds not tailed, 0.3–0.7 mm; seed body diaphonous yellow-brown [3]
2. Heads of 5-50 flowers; fruit subequal to the tepals; seed 1-1.9 mm long ... *J. canadensis*
2. Heads of 2-8 flowers; fruit longer than the tepals; seed 1.8-2.6 mm long ... *J. trigonocarpus*
3. Heads of (1)2-25(50) flowers, sometimes subglobose; fruit abruptly contracted or sometimes gradually tapering to the beak; cespitose [4]
3. Heads of 20-60 flowers, globose to subglobose; fruit tapering to the beak; rhizomatous or cespitose [8]
4. Fruit 1.3-2 times as long as tepals [5]
4. Fruit subequal to tepals [6]
5. Fruit 2.8-4.2 mm long ... *J. debilis*
5. Fruit 4-5.5 mm long ... *J. diffusissimus*
6. Inflorescence with 5-50 heads; tepals 2.6-3.5 mm long, subequal; fruit 2.8-3.5 mm long ... *J. acuminatus*
6. Inflorescence with 30-250 heads or glomerules; tepals 1.7-2.9 mm long, inner ones shorter; fruit 1.9-2.9 mm long [7]
7. Leaf blade with faint ringlike bands at position of septa; roots often with terminal tubers; inner tepals 2.4–2.8 mm ... *J. elliotii*
7. Leaf blade with prominent and conspicuous ringlike bands at position of cross partitions; roots without terminal tubers; inner tepals 1.7–2.1 mm ... *J. nodatus*
8. Leaf blades laterally flattened or compressed [9]
8. Leaf blades terete [10]
9. Leaf sheath auricle absent; fruit valve tips remaining united after dehiscence; seeds lance-elliptic, slightly curved and asymmetric ... *J. polycephalos*
9. Leaf sheath auricle 1-3 mm long; fruit valve tips usually free after dehiscence; seeds broadly elliptic, symmetric ... *J. validus*
10. Culms 4-8 mm wide near the base, (60)80-150 cm tall; largest leaf blades (24)40-80(108) cm long, 3-7(8) mm wide; inflorescence (10)15-25 cm long, with (15)25-55(80) heads ... *J. paludosus*
10. Culms 1-3 mm wide near the base; largest leaf blades 2-24 cm long, 1–2 mm wide; inflorescence 1-10 cm long, with 1-23(32) heads [11]
11. Basal leaf sheaths and cataphylls usually reddish; uppermost leaf blade often shorter than the sheath; heads strictly globose; tepals reddish brown to purplish, the inner ones shorter ... *J. megacephalus*
11. Basal leaf sheaths and cataphylls primarily straw-colored to brown; uppermost leaf blade often longer than the sheath; heads usually somewhat lobed; tepals green to light brown, subequal ... *J. scirpoides*

***Juncus acuminatus*** Michx.— {AFP}

*Juncus bufonius* L.— {AFP}  
*Juncus canadensis* J.Gay ex Laharpe— {AFP}  
*Juncus coriaceus* Mack.— {AFP}  
*Juncus debilis* A.Gray— {AFP}  
*Juncus dichotomus* Elliott— {AFP}  
*Juncus diffusissimus* Buckley— {AFP}  
*Juncus effusus* L. subsp. *solutus* (Fernald & Wiegand) Hämet-Ahti— {AFP}  
*Juncus elliotii* Chapm.— {AFP}  
*Juncus gymnocarpus* Coville— {AFP} State Endangered.  
*Juncus marginatus* Rostk.— {AFP}  
*Juncus megacephalus* M.A.Curtis— {AFP}  
*Juncus nodatus* Coville— {AFP}  
*Juncus paludosus* E.L.Bridges & Orzell— {AFP}  
*Juncus pelocarpus* E.Mey.— {AFP}  
*Juncus polycephalus* Michx.— {AFP}  
*Juncus repens* Michx.— {AFP}  
*Juncus roemerianus* Scheele— {AFP}  
*Juncus scirpoides* Lam.— {AFP}  
*Juncus tenuis* Willd.— {AFP}  
*Juncus trigonocarpus* Steud.— {AFP}  
*Juncus validus* Coville— {AFP}

#### Luzula {AFP}

1. Inflorescence of solitary flowers or in clusters of 2; fruit longer than tepals; caruncle subequal to seed body ... *L. acuminata*
1. Inflorescence of globose to cylindric heads or glomerules; fruit usually shorter than tepals; caruncle half or less of seed body ... *L. echinata*

*Luzula acuminata* Raf.— {AFP}  
*Luzula echinata* (Small) F.J.Herm.— {AFP}

#### MAYACACEAE {AFP}

*Mayaca* {AFP}  
*Mayaca fluviatilis* Aubl.— {AFP}

#### ERIOCAULACEAE {AFP}

1. Lacunar tissue (air spaces) evident at leaf base; larger roots pale, thickened, septate, unbranched; scape glabrous; perianth parts in 2s, petals with glands on adaxial surface; stamens 3-4 or 6; anthers 2-locular, apex of staminal column with 2-3 glands, glands unappendaged; pistil 2(3)-carpellate; style unappendaged, 2(3)-branched ... *Eriocaulon*
1. Lacunar tissue (air spaces) not evident at leaf base; larger roots either dark, fibrous, and evidently branched or pale, thickened, and spongy, neither septate nor branched; scape hairy or glabrous; perianth parts in 3s (or 2s in *Lachnocaulon digynum*), petals if present without glands; stamens (2)3; anthers 1-2-locular; apex of staminal column usually with 3 glands, glands appendaged or unappendaged; pistil (2)3-carpellate; style appendaged, 2-3-branched [2]
2. Roots dark, slender, fibrous, branched; scapes glabrate distally, hairs if present neither swollen nor glandular; involucre bracts mostly dull and brown, reflexed, obscured by

inflorescence; hairs of perianth club-shaped; staminal filaments adnate to rim of androphore; anthers 1-locular; style branches 2-cleft ... *Lachnocaulon*

2. Roots pale, thickened, spongy, appearing unbranched; scapes stipitate glandular distally, basally some hairs swollen; involucre bracts often lustrous pale golden, spreading, not obscured by inflorescence; hairs of perianth tapering, acute; staminal filaments low in corolla tube; anthers 2-locular; style branches undivided ... *Syngonanthus flavidulus*

### **Eriocaulon** {AFP}

1. Leaves to 40 cm long; fertile scape to 1 m long; heads (8)10-20 mm wide [2]

1. Leaves to 15 cm long; fertile scape to 0.4 m long; heads 3-8(10) mm wide [3]

2. Heads soft, easily flattened when pressed; sheath of scape usually longer than the longest leaves; involucre bracts gray, apex rounded or obtuse; receptacular bracteoles gray, apex acute; pistillate flower petals adaxially villous; club-shaped hairs of perianth with all cells mealy white ... *E. compressum*

2. Heads hard, not flattening when pressed; sheath of scape usually shorter than the longest leaves; involucre bracts straw-colored, apex acute; receptacular bracteoles pale, apex narrowly acuminate; pistillate flower petals adaxially glabrescent; club-shaped hairs of perianth with terminal cells whitened and the basal cells transparent ... *E. decangulare*

3. Receptacle copiously pilose; some or most receptacular bracteoles and perianth parts with chalk white hairs ... *E. texense*

3. Receptacle glabrous or sparsely hairy; receptacular bracteoles and perianth glabrous or hairy, hairs club-shaped, clear or white [4]

4. Perianth parts and receptacular bracteoles with glabrous or with few white hairs, the upper part of the head appearing gray; seeds conspicuously irregularly pale-reticulate, alveolae mainly rectangular ... *E. ravenelii*

4. Perianth parts and receptacular bracteoles with copious white hairs, the upper part of the head appearing white; seeds obscurely or faintly reticulate [5]

5. Involucre and receptacular bracts mostly white to stramineous, the lower part of the head appearing pale; seeds dark red-brown, ovoid or ellipsoid, 0.5–0.75 mm, faintly rectangular-reticulate, often papillate in lines ... *E. lineare*

5. Involucre and receptacular bracts dark gray or blackish, the lower part of the head appearing dark; seeds brown, nearly round, 0.3 mm, obscurely reticulate, alveolae irregularly and horizontally rectangular ... *E. nigrobracteatum*

***Eriocaulon compressum*** Lam.— {AFP}

***Eriocaulon decangulare*** L.— {AFP}

***Eriocaulon lineare*** Small— {AFP}

***Eriocaulon nigrobracteatum*** E.L.Bridges & Orzell— {AFP} Endemic. State Endangered.

***Eriocaulon ravenelii*** Chapm.— {AFP}

***Eriocaulon texense*** Körn.— {AFP}

**Lachnocaulon** {AFP}: Stützel et al. (2024) provide a reasonable argument for including *Lachnocaulon* in *Paepalanthus*.

1. Heads pale gray to white; apical hairs of receptacular bracts and perianth white, mealy, opaque; scapes hairy, infrequently glabrous [2]

1. Heads brown or gray-brown; apical hairs of bracts and perianth translucent, not white, the brown color of bract and perianth showing through; scapes glabrous or with ascending hairs [3]

2. Leaves linear, gradually attenuate; scapes usually pilose throughout, infrequently glabrous; mature heads 4-7(9) mm wide, whitish to pale gray; seeds pale to dark brown, not lustrous, longitudinal ribs conspicuous, transverse ribs less conspicuous than longitudinal ribs ... *L. anceps*

2. Leaves narrowly linear, abruptly attenuate; scapes glabrate within 1 cm below heads; mature heads 3.5-4(5) mm wide, dull gray-brown or pale gray; seeds dark red-brown, very lustrous, longitudinal ribs faint, transverse ribs forming finely cross-striolate pattern ... *L. beyrichianum*

3. Scapes with ascending hairs; heads dull gray-brown; hairs of receptacle copious, partly obscuring flowers (old heads may lose some hairs); gynoecium 3-carpellate ... *L. minus*

3. Scapes glabrous; heads gray to brown or reddish brown; gynoecium 2-3-carpellate [4]

4. Leaves 0.5-1(2) cm long; scape sheaths longer than above leaves; heads gray or gray-brown, usually globose by seeding time; gynoecium 2-carpellate ... *L. digynum*

4. Leaves 2-3(4) cm long; scape sheaths shorter than or subequal to leaves; heads dark brown to reddish brown, usually short cylindrical by seeding time; gynoecium 3-carpellate ... *L. engleri*

***Lachnocaulon anceps*** (Walter) Morong— {AFP}

***Lachnocaulon beyrichianum*** Sporl. ex Körn.— {AFP}

***Lachnocaulon digynum*** Körn.— {AFP} State Threatened.

***Lachnocaulon engleri*** Ruhland— {AFP}

***Lachnocaulon minus*** (Chapm.) Small— {AFP}

***Syngonanthus*** {AFP}

***Syngonanthus flavidulus*** (Michx.) Ruhland— {AFP}

**XYRIDACEAE** {AFP}

***Xyris*** {AFP}

1. Plants 4-30(60) cm tall; leaves 2-10(15) cm long; scapes 0.5-1 mm wide; scape sheaths mostly equaling or exceeding principal leaves; spikes 3-8(10) mm long; lateral sepals 2-5 mm long, the keels subentire, papillate, or ciliate; seeds 0.3-0.5 mm long [2]

1. Plants (10)15-150 cm tall; leaves 5-70 cm long; scapes 0.7-3 mm wide; scape sheaths exceeded by leaves; spikes 5-30 mm long; lateral sepals 4-15 mm long, the keels subentire, ciliate, long-fimbriate, or lacerate; seeds 0.4-1 mm long [4]

2. Spikes mostly as broad as long; margins of fertile bracts scarious, lacerate, often squarrose with red inner band; lateral sepal keel reddish apically ... *X. brevifolia*

2. Spikes mostly longer than broad; margins of fertile bracts entire or erose; lateral sepal keel not reddish apically, concolorous [3]

3. Leaf sheath base with distinct chestnut brown patch; leaf blades olive green; scape sheath subequal to leaves ... *X. drummondii*

3. Leaf sheath base without chestnut brown patch; leaf blades strongly maroon-tinged; scape sheath exceeding the leaves ... *X. flabelliformis*

4. Leaf blades 0.5-2.5(3) mm wide [5]

4. Leaf blades (2)3-25 mm wide [9]

5. Leaf blades with or without a distinct light margin; spike bracts lacerate and often recurved [6]

5. Leaf blades without a distinct margin; spike bracts entire or erose, erect [7]

6. Leaf blades flat, with a distinct light margin on both sides, the blades usually wider than the scape ... *X. elliottii*

6. Leaf blades terete to flattened, usually with only one side having a distinct light margin or absent, occasionally on both sides, the blades subequal to or narrower than the scape ... X.  
stenotera
7. Plants 30-90 cm tall; leaf sheath pinkish, soft; leaf blades 1-2.5(3) mm wide; spikes 10-32 mm long; lateral sepal exerted 0-1 mm beyond the subtending bract [8]
7. Plants 15-40(50) cm tall; leaf sheath lustrous brown to red-brown, chaffy or firm; leaf blades 0.5-1 mm wide; spikes 4-7(10) mm long; lateral sepal included [9]
8. Rhizomes scaly; spikes 20-32 mm long; lateral sepal not or scarcely exerted; petal blade slightly erose to shallowly serrate distally; seeds with regular rectangular alveolae ... X.  
correlliorum
8. Rhizomes absent; spikes 10-16 mm long; lateral sepal exerted 0.5-1 mm beyond the subtending bract; petal blade deeply lacerate apically; seeds with obscure alveolae ... X.  
longisepala
9. Stamines not bearded; seeds (0.7)0.8-1 mm long, finely lined longitudinally ... X.  
baldwiniana
9. Stamines with a dense bearded tuft; seeds 0.5 mm long, strongly longitudinally ribbed ... X.  
isoetifolia
10. Lateral sepal keel long-fimbriate, the fimbriae 0.4-1 mm long and nearly subequal to the blade width [11]
10. Lateral sepal keel subentire, lacerate, or ciliate [13]
11. Leaves not in fans; leaf sheath coriaceous, lustrous, brown; leaf blades twisted; scape edges smooth to lightly scabrous; petals expanding in afternoon sepal fimbriae reddish; ... X.  
caroliniana
11. Leaves in fans; leaf sheath chartaceous, dull, pinkish to pale yellow or green; leaf blades flat to scarcely twisted; scape edges strongly scabrous; petals expanding in morning; sepal fimbriae pale [12]
12. Stolons absent; plant base pale green, soft; spikes 12-25 mm long; style branches mostly ascending to erect ... X. fimbriata
12. Stolons sometimes present; plant base dark reddish, coriaceous-bulbous; spikes 20-40(45) mm long; style branches spreading ... X. panacea
13. Lateral sepal keel regularly ciliate through most of length [14]
13. Lateral sepal keel entire to lacerate, or with irregular teeth [16]
14. Leaf sheaths pinkish, pale purplish, to pale yellowish; leaf blade usually pale green, margins often with elongate papillae; petal blade 8-11 mm long ... X. ambigua
14. Leaf sheaths dark reddish, purplish, or brownish; leaf blade deep green with maroon tints, margins usually minutely roughened or with low, rounded papillae; petal blade 3-5 mm long [14]
15. Scape strongly 2-ribbed with intervening minor ribs, distally somewhat flattened and narrower than the spike; spike 1-2(2.7) mm long; seeds pale ... X. louisianica
15. Scape sharply 2-ribbed without intervening minor ribs or these obscure, distally flattened and nearly as wide as the spike; spike (1.5)2-3(3.5) mm long; seeds dark ... X. stricta
16. Lateral sepals slightly to strongly exerted from the subtending bracts ... X. smalliana
16. Lateral sepals included in the subtending bracts [17]
17. Plant base often pinkish; leaf blade distally twisted; scapes flexuous, often spirally twisted [18]
17. Plant base not pinkish; leaf blade usually not twisted; scapes usually not flexuous, not twisted [21]
18. Plants 50 cm tall; spikes tilted 10-20 degrees from scape apex; seed surface farinose ... X. calcicola

18. Plants 50- cm tall; spikes straight and erect with the scape apex; seed surface not farinose [18]
19. Base of plant deeply set in substrate, not bulbous, lacking outer scale leaves; leaf blades 2-4 mm wide; petals blades 2.8-4 mm long ... *X. chapmanii*
19. Base of plant shallowly set in substrate, bulbous, with blackish outer scale leaves; leaf blades 2-10 mm wide; petal blades 4.5-5.5 mm long [20]
20. Leaf blade and scape smooth or scabrous only along edges; petal blades obovate, white or yellow; seeds ovoid, 0.5-0.6 mm long ... *X. platylepis*
20. Leaf blade and scape surfaces prominently papillose or tuberculate-scabrid; petal blades suborbicular, yellow; seeds narrowly ovoid or ellipsoidal, 0.6-1 mm long ... *X. scabrifolia*
21. Scape with 2 prominent edges, otherwise without intervening ridges or these few and obscure, scape distally strongly flattened, (2)2.5-4 mm wide [22]
21. Scape with numerous prominent ridges (at least proximally), scape distally terete to slightly flattened, 1-2(2.5) mm wide [23]
22. Scape edges wing-like, each edge ca. ½ as wide or more as the central part; spikes 5-15(20) mm long ... *X. difformis*
22. Scape edges not wing-like, each edge <½ as wide as the central part; spikes 20-35 mm long ... *X. laxifolia* var. *iridifolia*
23. Leaf blades bright yellow-green, the surface smooth to sparsely scabrid; seeds translucent [24]
23. Leaf blades dull green, the surface minutely papillate to tuberculate-scabrid with distinct dark striations; seeds farinose or dark [25]
24. Perennial, usually cespitose; leaf base pinkish or purplish, spreading to expose dark scape base; leaf blades linear-curveaceous, spreading, 5-10(15) cm long; spikes (3-)5 mm long; petals not persistent ... *X. curtissii*
24. Annual, solitary or cespitose; leaf base pale yellowish, rarely pinkish, not spreading, scape base concealed; leaf blades ascending, (5)10-60 cm long; spikes 7-15(25) mm long; petals often persistent, turning black ... *X. jupicai*
25. Plants solitary or in loosely cespitose; leaf bases dark purplish, rarely pinkish; spikes sharply acute ... *X. floridana*
25. Plants densely cespitose; leaf bases dark brown to gray (inner ones pale); spikes bluntly acute ... *X. serotina*

***Xyris ambigua*** Beyr. ex Kunth— {AFP}

***Xyris baldwiniana*** Schult.— {AFP}

***Xyris brevifolia*** Michx.— {AFP}

***Xyris calcicola*** E.L.Bridges & Orzell— {AFP} Endemic.

***Xyris caroliniana*** Walter— {AFP}

***Xyris chapmanii*** E.L.Bridges & Orzell— Sometimes included under *X. scabrifolia*, "such intergradation that it is impossible to break the two out even as varieties" (Kral, FNA vol. 22).

***Xyris correlliorum*** E.L.Bridges & Orzell— {AFP} Endemic.

***Xyris curtissii*** Malme— {AFP}

***Xyris difformis*** Chapm.— {AFP}

***Xyris drummondii*** Malme— {AFP}

***Xyris elliotii*** Chapm.— {AFP}

***Xyris fimbriata*** Elliott— {AFP}

***Xyris flabelliformis*** Chapm.— {AFP}

***Xyris floridana*** (Kral)E.L.Bridges & Orzell— {AFP}

***Xyris isoetifolia*** Kral— {AFP} State Endangered.



*Xyris jupicai* Rich.— {AFP}  
*Xyris laxifolia* Mart. var. *iridifolia* (Chapm.)Kral— {AFP}  
*Xyris longisepala* Kral— {AFP} State Endangered.  
*Xyris louisianica* E.L.Bridges & Orzell— {AFP}  
*Xyris panacea* L.C.Anderson & Kral— {AFP} Endemic. State Endangered.  
*Xyris platylepis* Chapm.— {AFP}  
*Xyris scabrifolia* R.M.Harper— {AFP} State Threatened.  
*Xyris serotina* Chapm.— {AFP}  
*Xyris smalliana* Nash— {AFP}  
*Xyris stenotera* (Malme)E.L.Bridges & Orzell— {AFP} Endemic.  
*Xyris stricta* Chapm.— {AFP}

## POACEAE {AFP}

subf. Pharoideae: Pharus

subf. Orzyoideae

Oryzeae, Zizaniinae: Luziola, Zizania, Zizaniopsis

Oryzeae, Oryzinae: Leersia, Oryza

subf. Bambusoideae

Olyreae: Lithachne, Olyra

Arundinarieae, Arundinariinae: Arundinaria, Phyllostachys, Pleioblastus, Pseudosasa

Arundinarieae, Bambusinae: Bambusa

subf. Pooideae

Brachyeletreae: Brachyelytrum

Meliceae: Glyceria, Melica

Stipeae: Piptochaetium

Poeae, Aveninae: Avena, Koeleria, Lagurus, Sphenopholis

Poeae, Alopecurinae: Alopecurus

Poeae, Phleinae: Phleum

Poeae, Poinae: Poa

Poeae, Airinae: Aira

Poeae, Paraphollinae: Desmazeria

Poeae, Dactylidinae: Dactylis

Poeae, Lolinae: Festuca, Lolium

Poeae, Phalaridinae: Phalaris

Poeae, Anthoxanthinae: Anthoxanthum

Poeae, Brizinae: Briza

Poeae, Agrostidinae: Agrostis, Limnodea, Polypogon

Bromeae: Bromus

Triticeae: Elymus, Hordeum, Secale, Triticum

subf. Aristidioideae: Aristida

subf. Panicoideae

Thysolaeneae: Thysolaena

Chasmanthieae: Chasmanthium

incertae sedis: Kellochloa, Sacciolepis

Paniceae, Anthephorinae: Anthephora, Digitaria

Paniceae, Dichantheiinae: Dichantheium

Paniceae, Boivinellinae: Alloteropsis, Amphicarpum, Echinochloa, Lasiacis, Oplismenus

Paniceae, Panicinae: Panicum

Paniceae, Melidinae: Eriochloa, Melinis, Urochloa

Paniceae, Cenchrinae: Cenchrus, Paspalidium, Setaria, Stenotaphrum  
 Paspaleae, Arthropogoninae: Coleataenia, Phanopyrum  
 Paspaleae, Paspalinae: Anthenantia, Axonopus, Paspalum  
 Otachyriinae: Hymenachne, Steinchisma  
 Andropogoneae: Elionurus, Tripidium  
 Andropogoneae, Arthraxoninae: Arthraxon  
 Andropogoneae, Tripsacinae: Tripsacum, Zea  
 Andropogoneae: Chrysopogon  
 Andropogoneae, Rottboellinae: Coix, Rottboellia  
 Andropogoneae, Ratzeburgiinae: Coelorachis, Eremochloa, Hackelochloa, Hemarthria  
 Andropogoneae, Saccharinae: Miscanthus, Polytrias, Saccharum  
 Andropogoneae, Sorghinae: Sorghastrum, Sorghum  
 Andropogoneae, Germainiinae: Imperata,  
 Andropogoneae: Microstegium  
 Andropogoneae, Andropogoninae: Anatherum, Andropogon, Hyparrhenia, Schizachyrium  
 Andropogoneae, Anthistiriinae: Bothriochloa, Cymbopogon, Dichanthium, Heteropogon,  
 Themeda  
 subf. Arundinoideae: Arundo, Phragmites  
 subf. Danthonioideae: Cortaderia, Danthonia  
 subf. Chloridoideae  
 Triraphideae: Neyraudia  
 Eragrostideae: Eragrostis, Uniola  
 Zoysieae: Spartina, Sporobolus, Zoysia  
 Cynodonteae: Dactyloctenium  
 Eleusininae: Chloris, Ctenium, Cynodon, Dinebra, Diplachne, Disakisperma, Eleusine,  
 Eustachys, Leptochloa  
 Pappophorinae: Tridens  
 Monanthochloinae: Bouteloua, Distichlis, Muhlenbergia  
 Gouiniinae: Triplasis  
 Hubbardochoinae: Gymnopogon

Key: Leptochloa s.lat.

1. Inflorescence 30-100 branches; spikelets 2-4 mm long, with 2-5(6) florets; lemmas 0.9-2 mm long; anthers 0.2-0.4 mm long; caryopses 0.5-1.2 mm long (ligules 0.5-3.2 mm long, truncate-erose) ... Dinebra
1. Inflorescence with 3-35 branches; spikelets 2.5-12(14) mm long, with 3-20 florets; lemmas (1.5)2.3-6 mm long; anthers 0.2-2.7 mm long; caryopses 1-2.4 mm long (ligules various) [2]
2. Ligules 2-8 mm long, apex acute to attenuate (somewhat lacerate) ... Diplachne fusca
2. Ligules 0.3-5.4 mm long, truncate-erose or obtuse-erose [3]
3. Inflorescence of 2-15 branches, with secondary inflorescences often concealed in leaf sheaths; lemmas 4-5 mm long, membranous, apices broadly acute, obtuse, or truncate, unawned; panicles with 2-15 branches; caryopses 1.9-2.3 mm long, strongly dorsally compressed ... Disakisperma dubium
3. Inflorescence of 9-25 branches, without secondary inflorescences in leaf sheaths; lemmas 1.5-3.6 mm long, chartaceous, apices usually acute, rarely obtuse, unawned or awns to 11 mm long; panicles with 9-25 branches; caryopses 1.3-1.8 mm long, somewhat laterally compressed; ... Leptochloa

**Agrostis** {AFP}

1. Stoloniferous; palea 0.7-1.4 mm long ... *A. stolonifera*
1. Cespitose; palea absent or to 0.2 mm long [2]
2. Lemma usually with a subapical flexuous awn 3-10 mm long; callus hairs to 0.6 mm long, dense; anther 1 ... *A. eliottiana*
2. Lemma unawned or with a straight or geniculate awn to 3 mm long arising from near the middle of the lemma; anthers 3 [3]
3. Leaf blades 2-5 mm wide, flat; pedicels to 7.3 mm long; lemmas 1.3-2.2 mm long; callus hairs abundant, to 0.3 mm long; flowering Sep-Oct ... *A. perennans*
3. Leaf blades 0.5-2 mm wide, usually involute; pedicels to 9.6 mm long; lemmas 0.8-2 mm long; callus hairs sparse, to 0.2 mm long; flowering Mar-Sep [4]
4. Pedicels to 3.5 mm long, spikelets appearing clustered; lemmas 0.8-1.2 mm long, exceeding the ripe caryopses by no more than 0.2 mm; anthers 0.2-0.5 mm long; flowering Apr-Jul ... *A. hyemalis*
4. Pedicels to 9.6 mm long, spikelets not appearing clustered; lemmas 1.4-2 mm long, exceeding the ripe caryopses by 0.3+ mm; anthers 0.4-0.8 mm long; flowering Mar-Sep ... *A. scabra*

***Agrostis eliottiana*** Schult.— {AFP}

***Agrostis hyemalis*** (Walter)Britton et al.— {AFP}

***Agrostis perennans*** (Walter)Tuck.— {AFP}

***Agrostis scabra*** Willd.— {AFP}

\****Agrostis stolonifera*** L.— {AFP}

**Aira** {AFP}

\****Aira caryophylla*** L.— {AFP}

**Alloteropsis** {AFP}

\****Alloteropsis cimicina*** (L.)Stapf— {AFP}

**Alopecurus** {AFP}

***Alopecurus carolinianus*** Walter— {AFP}

**Amphicarpum** {AFP}

***Amphicarpum muehlenbergianum*** (Schult.)Hitchc.— {AFP}

**Anatherum**

1. Rames usually conspicuously wholly exerted or nearly so, and mostly distant from adjacent ones; anthers 1 or 3, 1.2-3.5 mm long ... Key A

1. Rames usually at least partly concealed by the subtending sheath and sometimes in dense arrays; anthers 1, 0.5-2 mm long ... Key B

Key A

1. Inflorescence peduncles (5)5-9(11.5) cm long; rame internode pubescence uniform; sessile spikelets 4-5 mm long; lemma awns mostly 5-10 mm long; anthers 1 [2]

1. Inflorescence peduncles (8)9-17 cm long; rame internode pubescence becoming sparse basally; sessile spikelets 5-7 mm long; lemma awns mostly 10-25 mm long; anthers 3 [2]

2. Culms 2.5–4.5 mm wide; basal leaf sheaths appressed-pubescent, often silvery-silky; basal leaf blades 5–6 mm wide, upper surface appressed-pubescent, often silvery-silky; inflorescence units (10)30–40(50) per culm, each with 2–4 rames ... *A. arctatus*
2. Culms 1.5–2.0 mm wide; basal leaf sheaths moderately to densely villous; basal leaf blades 2–2.5 mm wide, glabrous to sparsely pubescent with spreading hairs; inflorescence units (3)8–14(27) per culm, all with 2 rames ... *A. cumulicola*
3. Rame internodes with longest hairs 8–9 mm long, somewhat obscuring the spikelets; first glume nerveless and glabrous or nearly so between the keels; lemma awns (18)20–22(25) mm long; pedicellate spikelet vestigial, 1–2 mm long ... *A. ternarius*
3. Rame internodes with longest hairs 3–6 mm long, not obscuring the spikelets; first glume 2–3-nerved between the keels, its surface moderately to densely scabridulous; lemma awns (9)11–16(18) mm long; pedicellate spikelets, 2–4 mm long [4]
4. Culms (1.1)1.4–1.7(1.9) m tall; basal leaf sheaths and lower surface of basal leaf blades green or bluish-green, not glaucous; culm internodes not glaucous; inflorescence units (5)10–20(26) per culm ... *A. cabanisii*
4. Culms (1.5)1.8–2.1(2.3) m tall; basal leaf sheaths and lower surface of basal leaf blades bluish-glaucous; culm internodes slightly to evidently glaucous; inflorescence units (6)8–10(12) per culm ... *A. miamiensis*

#### Key B

1. Leaves strongly chalky-glaucous [2]
1. Leaves green to slightly glaucous [3]
2. Ligule 0.9–2 mm long (excluding cilia), the cilia 0–0.2 mm long; cauline leaf blades 33–75 cm long; pubescence below raceme sheath usually moderate to dense; racemes (1)1.3–2(2.3) cm long ... *A. cretaceus*
2. Ligule 0.2–0.5 mm long (excluding cilia), the cilia 0.3–1.2 mm long; cauline leaf blades 12–38 cm long; pubescence below raceme sheath absent or sparse to dense; racemes (1.4)1.8–2.7(4) cm long [3]
3. Pubescence below raceme sheath absent; raceme sheaths (2.1)2.6–3.8(4.9) cm long; racemes (1.4)1.7–2.4(3.2) cm long; spikelets (2.6)3.4–3.7(4.4) mm long ... *A. capillipes*
3. Pubescence below raceme sheath sparse to dense; raceme sheaths (2.4)3.2–4.8(6) cm long; racemes (1.5)2–3(4) cm long; spikelets (3)3.5–3.9(4.9) mm long ... *A. dealbatum*
4. Spikelets lacking awns; anthers 3 ... *A. bicorne*
4. Sessile spikelets with awns; anthers 1(–3) [5]
5. Leaf blades appressed-pubescent; peduncles (1)3–4(13) mm long; callus (base of sessile spikelet) hairs 1.5–5 mm long; sessile spikelets (3.5)4.1–4.5(5) mm long ... *A. longiberbis*
5. Leaf blades glabrous or with mostly spreading (rarely appressed) hairs; peduncles (1)5–70(100) mm long; callus hairs 1–3(3.5) mm long; sessile spikelets (2.6)3.5–5(5.5) mm long [6]
6. Peduncles with (2)4–13 rames ... *A. mohrii*
6. Peduncles with (1)2–5(7) rames [7]
7. Culms 0.3–1.2(1.4) m tall; leaf blades 0.8–3(5) mm wide; inflorescence units 2–31 per culm [10]
7. Culms (0.2)0.9–3.1 m tall; leaf blades (1.7)3–9.5 mm wide; inflorescence units 5–210 per culm [13]
8. Peduncles with 2 rames; anthers 1.2–2 mm long; sessile spikelets (4)4.8–5(5.5) mm long ... *A. tracyi*
8. Peduncles with 2–5 rames; anthers 0.6–1.7 mm long; sessile spikelets (3)4.1–4.4(5.7) mm long [11]
11. Ligules 0.8–1.5 mm long, the cilia <0.1 mm long ... *A. perangustatum*
11. Ligules 0.2–0.8(1) mm long [12]

12. Basal leaf sheath faces appressed-pubescent, 2.5-5 mm wide from keel to keel; basal leaf blades 2-5 mm wide unfolded, not difficult to unfold; upper culm sheaths 6.6-8.5 mm wide when unrolled; rachis internode 3.8-5 mm long; pedicel 5.6-8 mm long ... *A. gyrans*
12. Basal leaf sheaths faces glabrous, (0.5)1.4-2.6(3) mm wide from keel to keel; basal leaf blades (0.6)1-2.2(2.8) mm wide unfolded, very difficult to unfold; upper culm sheaths (4)4.7-6.3(7) mm wide when unrolled; rachis internode (2.5)3-3.8(4) mm long; pedicel 4.5-5.6(5.8) mm long ... *A. subtile*
13. Culm 1-3 m long; inflorescence branches arching; rames (1.2)1.5-2.1(2.6) cm long ... *A. brachystachyum*
13. Culms 0.3-2.5 m long; inflorescence branches erect to ascending; rames (0.5)1.7-5.3 cm long [14]
14. Leaf blades 32-61 cm long, usually glabrous; sheaths often scabrous; inflorescence units (9)50-210 per culm; rame internode hairs uniform (not sparse basally); anthers 1.3-2 mm long ... *A. floridanum*
14. Leaf blades 11-109 cm long, glabrous to densely pubescent; sheath smooth to scabrous; inflorescence units 6-600 per culm; rame internodes sparsely pubescent basally, more densely pubescent distally; anthers 0.5-1.5 mm long [15]
15. Leaf blades 13-109 cm long; sheaths usually scabrous, sometimes smooth; ligules 0.6-2.2 mm long; keels of the lower glumes sometimes scabrous below midlength [16]
15. Leaf blades 11-52 cm long; sheaths smooth, rarely somewhat scabrous; ligules 0.2-1 mm long; keels of the lower glumes usually smooth below midlength, scabrous distally [18]
16. Leaf sheaths usually smooth; ligules ciliate, the cilia 0.2-0.9 mm long; sheaths subtending the inflorescence units 1.5-3 mm wide; ... *A. tenuispathum*
16. Leaf sheaths often scabrous; ligules, when ciliate, with the cilia no more than 0.5 mm long; sheaths subtending the inflorescence units (1.5)2.3-3.4(4.4) mm wide [17]
17. Leaves usually glabrate to sparsely pilose; upper portion of the plants oblong to obpyramidal; mature peduncles (4)11-35(60) mm long; anthers eventually falling ... *A. glomeratus*
17. Leaves densely villous; upper portion of the plants cylindrical to oblong; mature peduncles 2-5 (8) mm long; withered remnants of anthers retained within the spikelets ... *A. hirsutior*
18. Sheaths subtending the inflorescence units (1.7)2.4-3.1(4) mm wide; inflorescences units usually with 2 rames; peduncles (1) 4-9 (30) mm long; rames (1.3)1.5-2.3(3) cm long ... *A. campbellii*
18. Sheaths subtending the inflorescences units (2.2)3.3-4.4(5.6) mm wide; inflorescence units with 2-5(7) rames; peduncles (2)3-6(12) mm long; rames (0.5)1.9-3.3(4.4) cm long ... *A. virginicus*

***Anatherum arctatum*** (Chapm.)Voronts. & E.A. Kellogg— {AFP} State Threatened.

\****Anatherum bicorne*** (L.)P. Beauv.— {AFP}

***Anatherum brachystachyum*** (Chapm.)Roberty— {AFP}

***Anatherum cabinisii*** (Hack.)Voronts. & E.A. Kellogg—Fernald & Griscom (1935) state "We are unable, also, to keep apart as a species *A. Cabainisii* Hack. Numerous specimens are transitional from true *A. Cabainisii* to *A. ternarius*".

***Anatherum campbellii*** (U.B. Deshmukh, M.B. Shende, & E.S. Reddy)E.L. Bridges & Orzell— {AFP}

***Anatherum capillipes*** (Nash)Voronts. & E.A. Kellogg — {AFP}

***Anatherum cretaceum*** (Weakley & Schori)Weakley & Schori— {AFP}

***Anatherum cumulicolum*** (E.L.Bridges & Orzell)Voronts. & E.A. Kellogg— {AFP} Endemic.

***Anatherum dealbatum*** (C. Mohr. ex Hack.)Weakley & LeBlond—

***Anatherum floridanum*** (Scribn.)Voronts. & E.A. Kellogg— {AFP}  
***Anatherum glaucescens*** (Kunth)Voronts. & E.A. Kellogg—  
***Anatherum glomeratum*** (Walter) Voronts. & E.A. Kellogg— {AFP}  
***Anatherum hirsutius*** (Hack.)Weakley & LeBlond— {AFP}  
***Anatherum gyrans*** (Ashe) Voronts. & E.A. Kellogg— {AFP}  
***Anatherum longiberbe*** (Hack.)Voronts. & E.A. Kellogg— {AFP}  
***Anatherum miamiense*** (E.L. Bridges & Orzell)Voronts. & E.A. Kellogg—  
***Anatherum mohrii*** (Hack.)Voronts. & E.A. Kellogg— {AFP}  
***Anatherum perangustatum*** (Nash)Voronts. & E.A. Kellogg — {AFP}  
***Anatherum subtile*** Budach & E.L. Bridges—The type specimen is from Highlands Co. No other specimens were cited but it is said to be elsewhere, “with most records from Florida and only a few confirmed records from Alabama, Georgia, and Louisiana.” (Budach & Bridges in Weakley et al. 2023).  
***Anatherum tenuispatheum*** (Nash)Sorrie & Weakley— {AFP}  
***Anatherum ternarium*** (Michx.)Voronts. & E.A. Kellogg— {AFP}  
***Anatherum tracyi*** (Nash)Voronts. & E.A. Kellogg— {AFP}  
***Anatherum virginicum*** (L.) Voronts. & E.A. Kellogg —

### **Andropogon** {AFP}

1. Cespitose; pedicellate spikelets usually vestigial or absent, or occasionally well-developed and staminate in terminal spikelet units; sessile spikelets 2.6-8.4 mm long (formerly Andropogon sect. Leptopogon) ... Anatherum  
 1. Rhizomes sometimes present; pedicellate spikelets usually well-developed, (3.5)6-12 mm long, usually staminate; sessile spikelets 5-12 mm long ... A. gerardi

***Andropogon gerardi*** Vitman— {AFP}

### **Anthenantia** {AFP}

1. Leaves 10-60 cm long, blades 2-5 mm wide, margins scabrous, the blade base underside appearing confluent with the sheath ... A. rufa  
 1. Leaves 10-30 cm long, blades 5-10 mm wide, margins papillose-hispid, the blade base bent from the sheath and of a light color ... A. villosa

***Anthenantia rufa*** (Nutt.)Schult.— {AFP}

***Anthenantia villosa*** (Michx.) P.Beauv.— {AFP}

### **Anthephora** {AFP}

\****Anthephora hermaphrodita*** (L.)Kuntze— {AFP}

### **Anthoxanthum** {AFP}

\****Anthoxanthum aristatum*** Boiss.— {AFP}

### **Aristida** {AFP}

1. Lower glume with 3-7 veins [2]  
 1. Lower glume with 1-2(3) veins [3]  
 2. Upper glume awn (7)11-20(24) mm long; lemma central and lateral awns subequal, (8)12-65(70) mm long ... A. oligantha

2. Upper glume awn 3-7 mm long; lemma lateral awns 1-4 mm long, the central awn 12-25 mm long ... *A. ramosissima*
3. Lemma central awn spirally coiled at base [4]
3. Lemma central awn straight to curved (if coiled, then awns joined to form a column)
4. Glumes unequal, lower 5-8(10) mm long, upper 7-13 mm long; lemmas smooth to scabridulous, 6-11 mm long ... *A. dichotoma* var. *curtissii*
4. Glumes subequal, lower 3-6 mm long, upper 4-7 mm long; lemmas sparsely appressed-pubescent, 3-8 mm long ... *A. dichotoma* var. *dichotoma*
5. Lemma lateral awns absent or to 1 mm long; inflorescence 5-25 cm wide ... *A. floridana*
5. Lemma lateral awns 3- mm long (if absent, inflorescence 1-6 cm wide) <1/2 as long as the central awn [6]
6. Inflorescence nodes and usually leaf sheaths lanose-floccose ... *A. lanosa*
6. Inflorescence nodes and leaf sheaths glabrous to sparsely pilose [7]
7. Leaf blade tightly involute, pilose on outer surface and often the region near ligule; generally flowering only after fire (burnt culms usually present) ... *A. stricta* var. *beyrichiana*
7. Leaf blade flat, folded, or involute and glabrate; flowering without fire or after fire [8]
8. Inflorescence densely spiciform, branches appressed, spikelets congested; upper glumes awned, the awns 10-12 mm long; lemmas terminating in a beak 7-30 mm long ... *A. spiciformis*
8. Inflorescence loosely racemiform, paniculiform, or racemiform, branches spreading to appressed, spikelets relatively well spaced; upper glumes unawned or with an awn to 6 mm long; lemmas not beaked or with a beak less than 7 mm long [9]
9. Lemma awns clearly jointed with the lemma blade, the awns disarticulating ... *A. tuberculosa*
9. Lemma awns confluent with the lemma blade [10]
10. Inflorescence 15-25 cm wide, the branches base with pulvini, the branches mostly widely spreading to drooping ... *A. patula*
10. Inflorescence 2-12 cm wide, the branches without pulvini (rarely present in *A. purpurea*), appressed, ascending, to spreading or drooping [11]
11. Rhizomatous and densely cespitose; basal leaf sheaths becoming fibrous with age ... *A. rhizomophora*
11. Cespitose, without rhizomes; basal leaf sheaths mostly remaining intact or flaking [12]
12. Inflorescence unbranched, the nodes with a single spikelet ... *A. mohrii*
12. Inflorescence nodes with branches or multiple spikelets [13]
13. Glumes unequal, lower 4-12 mm long, upper 7-25 mm long [14]
13. Glumes subequal or the lower longer, 2-11 mm long [15]
14. Lower glume 6-9(11) mm long, upper glume 9-12 mm long; lemmas 5-7 mm long, awns 8-15 mm long; callus 1-2 mm long ... *A. gyrans*
14. Lower glume 4-12 mm long, upper glume 7-25 mm long; lemmas 6-16 mm long, awns (8)15-140 mm long; callus 0.5-1.8 mm long ... *A. purpurea*
15. Lower glume strongly 2-keeled, (7.5)9-13 mm long; central awns 15-40 mm long ... *A. palustris*
15. Lower glume 1-keeled (if 2-keeled, 5-10 mm long); central awns 8-25(27) mm long [16]
16. Lemma awns divergent to reflexed, contorted at base, central awns ca. twice as thick as lateral awns, divergent to arcuate-reflexed ... *A. simpliciflora*
16. Lemma awns mostly erect to ascending, not contorted at base, central and lateral subequal in thickness or central ca. twice as thick but not contorted [17]
17. Culms 3-6 mm wide at base; primary inflorescence branches 4-20 cm long; lower glume 1-veined; callus 1-2 mm long ... *A. condensata*
17. Culms 1-4 mm wide at base; primary inflorescence branches 1-5 cm long; lower glume with 1-2 veins; callus 0.4-0.8 mm long [18]

18. Annual; internodes mostly longer than the leaf sheaths; ligules ca. 0.5 mm long; leaf blades 5-14 cm long, 1-2 mm wide; inflorescence 6-22 cm long [19]
18. Perennial; internodes mostly shorter than the leaf sheaths; ligules ca. 0.2 mm long; leaf blades 10-25 cm long, 1-3 mm wide; inflorescence (15)20-55 cm long [20]
19. Lemma central awns 8-27 mm long, lateral awns (1)6-18 mm long ... *A. longespica* var. *geniculata*
19. Lemma central awns 1-10(14) mm long, lateral awns absent or to 5(8) mm long ... *A. longespica* var. *longespica*
20. Central awns divaricate to reflexed, ca. twice as thick at the base as the lateral awns ... *A. purpurascens* var. *virgata*
20. Central and lateral awns divergent, subequal in thickness at the base [21]
21. Leaf blades 1-3 mm wide, often curling; glumes unequal, lower 6-10 mm long, upper 5-8 mm long; lemma awns straight or only slightly contorted at the base; ... *A. purpurascens* var. *purpurascens*
21. Leaf blades 1(-1.5) mm wide, usually not curling; glumes subequal, 8-9 mm long; lemma awns spirally contorted at the base; ... *A. purpurascens* var. *tenuispica*

***Aristida condensata*** Chapm.— {AFP}

***Aristida dichotoma*** Michx. var. ***curtissii*** A.Gray ex S.Watson & J.M.Coult.— {AFP}

***Aristida dichotoma*** Michx. var. ***dichotoma***— {AFP}

***Aristida floridana*** (Chapm.)Vasey— {AFP}

***Aristida gyrans*** Chapm.— {AFP}

***Aristida lanosa*** Muhl. ex Elliott— {AFP}

***Aristida longespica*** Poir. var. ***geniculata*** (Raf.)Fernald— {AFP}

***Aristida longespica*** Poir. var. ***longespica***— {AFP}

***Aristida mohrii*** Nash— {AFP}

***Aristida oligantha*** Michx.— {AFP}

***Aristida palustris*** (Chapm.)Vasey— {AFP}

***Aristida patula*** Chapm. ex Nash— {AFP} Endemic.

***Aristida purpurascens*** Poir. var. ***purpurascens***— {AFP}

***Aristida purpurascens*** Poir. var. ***tenuispica*** (Hitchc.)Allred— {AFP}

***Aristida purpurascens*** Poir. var. ***virgata*** (Trin.)Allred— {AFP}

\****Aristida purpurea*** Nutt.— {AFP}

***Aristida ramosissima*** Engelm. ex A.Gray— {AFP}

***Aristida rhizomophora*** Swallen— {AFP} Endemic.

***Aristida simpliciflora*** Chapm.— {AFP}

***Aristida spiciformis*** Elliott— {AFP}

***Aristida stricta*** Michx. var. ***beyrichiana*** (Trin.)D.B.Ward— {AFP} Treated as a species by [Peet \(1993\)](#). According to [Kesler et al. \(2003\)](#), 17% of *stricta* s.str. specimens were bearded (dense woolly indumentum abaxially around base of leaf blade) and 63% were conspicuously tufted (hairs at collar corners near ligule), and differences in glume lengths were not significant, contrary to Peet (1993). Relationships among populations have been studied via allozymes ([Walters et al. 1994](#)) and ISSR ([Sharma et al. 2011](#)).

***Aristida tuberculosa*** Nutt.— {AFP}

**Arthraxon** {AFP}

\****Arthraxon hispidus*** (Thunb.)Makino— {AFP}



## Arundinaria {AFP}

1. Rhizome horizontal, solid or hollow-centered, without air canals; culms 2-8 m tall, to 3 cm wide; primary branches to 25 cm long, with 0-1 compressed basal internodes; culm internodes usually sulcate; culm leaves deciduous ... *A. gigantea*

1. Rhizome shortly horizontal, then upturned, hollow-centered, the periphery with air canals (ca. 1 mm long); culms 1-2.5(3) m tall, to 2 cm wide; primary branches (25)50-80 cm long, with 2-5 compressed basal internodes; culm internodes usually terete; culm leaves persistent to tardily deciduous ... *A. tecta*

***Arundinaria gigantea*** (Walter)Muhl.— {AFP}

***Arundinaria tecta*** (Walter)Muhl.—

## Arundo {AFP}

\****Arundo donax*** L.— {AFP}

## Avena {AFP}

^***Avena fatua*** L. var. *sativa* (L.)Hauskn.— {AFP}

## Axonopus {AFP}

1. Leaf blades 1.5-6 mm wide; spikelets 1.6-2.2(2.8) mm long, upper glume (lower absent) and lower lemma sparsely pilose, 2-veined ... *A. fissifolius*

1. Leaf blades 2-20 mm wide; spikelets 2-5.5 mm long, glume and lower lemma glabrous to sparsely pilose, with 2-7 veins [2]

2. Spikelets 2-3.5 mm long; glume and lower lemma sparsely pilose, with 2-5 veins ... *A. compressus*

2. Spikelets 3.5-5.5 mm long; glume glabrous, lower lemma glabrous to sparsely pilose, with 5-7 veins ... *A. furcatus*

***Axonopus compressus*** (Sw.)P.Beauv.— {AFP}

***Axonopus fissifolius*** (Raddi)Kuhl.— {AFP}

***Axonopus furcatus*** (Flüggé)Hitchc.— {AFP}

## Bambusa {AFP}

1. Branchlets of the lower branches perpendicular and recurved, hardened, thorn-like, lacking foliage leaves (subg. *Bambusa*) [2]

1. Branchlets of the lower branches bearing foliage leaves, not thornlike [2]

2. Culm leaf blade adaxially sparsely puberulous to glabrous ... *B. balcooa*

2. Culm leaf blade adaxially densely pubescent ... *B. bambos*

3. Culm leaf auricles absent or poorly developed [4]

3. Culm leaf auricles well developed, 1.5-5 cm long, 0.4-1.5 cm wide [5]

4. Culms 6-15 m tall, erect; culm internodes glabrous; culm leaf auricles small, rounded, ciliate; foliage leaf blades abaxially pubescent initially, becoming glabrous, adaxially glabrous (subg. *Dendrocalamopsis*) ... *B. oldhamii*

4. Culms 1-7 m tall, broadly arching distally; culm internodes antrorsely hispid; culm leaf auricles very small or inconspicuous; foliage leaf blades abaxially densely pubescent, adaxially glabrous ... *B. multiplex*

5. Culm leaf sheath with stiff, dark brown hairs, the auricles subequal; foliage leaf blades glabrous on both surfaces ... *B. vulgaris*

5. Culm leaf sheath glabrous or with stiff, brown hairs, the auricles unequal, the larger one to 2 times as large as smaller one; foliage leaf blades abaxially densely pubescent, adaxially glabrous or sparsely pilose near base [6]

6. Culm leaf sheath glabrous or with stiff, brown hairs, larger auricle narrowly oblong to lanceolate, ca. 1.5 cm long, 0.4-0.5 cm wide ... *B. textilis*

6. Culm leaf sheath glabrous, larger auricle ovate to ovate-elliptic, ca. 2.5 cm long, 1-1.4 cm wide ... *B. tuldoides*

\**Bambusa multiplex* (Lour.)Raeusch. ex Schult. & Schult.f.— {AFP}

^ *Bambusa oldhamii* Munro—

^ *Bambusa vulgaris* Schrad. ex J.C.Wendl.— {AFP}

### Bothriochloa {AFP}

1. Sessile spikelet 4.5-7.3 mm long, pedicellate spikelet 3-4 mm long ... *B. barbinodis*

1. Sessile spikelet 2.5-4.5 mm long, pedicellate spikelet 1.5-4.5 mm long [2]

2. Panicle with 10-20 branches, the primary rachis longer than the branches [3]

2. Panicle with 1-8 branches, the primary rachis shorter than the branches [4]

3. Panicles reddish when mature; hairs below the sessile spikelets about 1/4 as long as the spikelets, sparse, not obscuring the spikelets ... *B. bladhii*

3. Panicles silvery-white or light tan; hairs below the sessile spikelets at least 1/2 as long as the spikelets, copious, at least somewhat obscuring the spikelets ... *B. laguroides* subsp. *torreyana*

4. Lower glumes of sessile spikelet without a glandular pit ... *B. ischaemum* var. *songarica*

4. Lower glumes of sessile spikelet with a conspicuous glandular pit ... *B. pertusa*

\**Bothriochloa barbinodis* (Lag.)Herter— {AFP}

\**Bothriochloa bladhii* (Retz.)S.T.Blake— {AFP}

\**Bothriochloa ischaemum* (L.)Keng var. *songarica* (Rupr. ex Fisch. & C.A.Mey.)Celarier & J.R.Harlan— {AFP}

*Bothriochloa laguroides* (DC.)Herter subsp. b (Steud.)Allred & Gould— {AFP}

\**Bothriochloa pertusa* (L.)A.Camus— {AFP}

### Bouteloua {AFP}

1. Culms 1-15(30) cm long; leaf blades 1-10 cm long; spikelets 2.8-4 mm long, glabrous; florets unisexual ... *B. dimorpha*

1. Culms (8)10-80 cm long; leaf blades 1-30 cm long; spikelets 4-8 mm long, glabrous or pubescent; florets bisexual [2]

2. Inflorescence branches (12)30-80, each disarticulating as a whole and with (1)2-7(15) spikelets ... *B. curtipendula*

2. Inflorescence branches 1-6, each with 20-50 spikelets, disarticulation above the glumes ... *B. hirsuta*

\**Bouteloua curtipendula* (Michx.)Torr.— {AFP}

\**Bouteloua dimorpha* Columbus— {AFP}

*Bouteloua hirsuta* Lag.— {AFP}

### Brachyelytrum {AFP}

*Brachyelytrum erectum* (Schreb. ex Spreng.)P.Beauv.— {AFP}

## Briza {AFP}

1. Spikelets 10-20 mm long, lower glume 5-6 mm long, upper glume 6-7 mm long, proximal lemmas 7-9 mm long and villous distally ... *B. maxima*

1. Spikelets 2-7 mm long, lower glume 2-3 mm long, upper glume 2-4 mm long, proximal lemmas 1-2 mm long and glabrous to minutely scurfy ... *B. minor*

\**Briza maxima* L.— {AFP}

\**Briza minor* L.— {AFP}

## Bromus {AFP}

1. Spikelets strongly laterally compressed; lower glume with 5-7(9) veins; lemma strongly keeled, awns absent or to 3.5 mm long; leaf sheath densely hairy ... *B. catharticus*

1. Spikelets terete to slightly compressed; lower glume with 1-5 veins; lemma rounded, the awns absent or 1-13 mm long; leaf sheath hairy or glabrous [2]

2. Lower leaf sheaths glabrous or glabrate; lemmas 6.5-8.5(10) mm long ... *B. secalinus*

2. Lower leaf sheaths uniformly hairy; lemmas 7-12 mm long

3. Lower glume with 1 vein [4]

3. Lower glume with 3-5 veins [5]

4. Perennial; lemma awns (3)4-7(8) mm long, arising <1.5 mm below lemma tip ... *B. pubescens*

4. Annual; lemma awns 10-18 mm long, arising 1.5 mm or more below lemma tip ... *B. tectorum*

5. Lemma 8-12 mm long, 1.7-2.6 mm wide, awns 3-10 mm long, straight, arising <1.5 mm below lemma tip ... *B. commutatus*

5. Lemma 7-9 mm long, 1.2-2.2 mm wide, awns 8-13 mm long, divergent to erect, arising >1.5 mm below lemma tip ... *B. japonicus*

\**Bromus catharticus* Vahl— {AFP}

\**Bromus commutatus* Schrad.— {AFP}

\**Bromus japonicus* Thunb.— {AFP}

*Bromus pubescens* Spreng.— {AFP}

\**Bromus secalinus* L.— {AFP}

\**Bromus tectorum* L.— {AFP}

## Cenchrus {AFP}

1. Spikelets subtended by hardened, retrorsely scabrid, spinose bristles; plants <1 m tall [2]

1. Spikelets subtended by soft, plumose or antrorsely scabrid bristles (if spinose, then antrorsely scabrid); plants 0.5-8 m tall (former Pennisetum) [8]

2. Bristles all terete ... *C. myosuroides*

2. Inner bristles flattened, at least at the base [3]

3. Outer bristles terete, slender, whorled [4]

3. All bristles flattened [5]

4. Rachis internodes 0.8-1.7 mm long; most outer bristles subequal to slightly exceeding the inner ones; mature bur body 2.7-4.2 mm wide (excluding bristles), 4-5.3 mm long ... *C. brownii*

4. Rachis internodes 2-4 mm long; most outer bristles reaching near the middle of the inner ones; mature bur body 4.1-6.3 mm wide (excluding bristles), 5.3-8 mm long ... *C. echinatus*

5. Leaf blades 1-3.5 mm wide; rachis internodes 2-4 mm long; spikelet glabrate ... *C. gracillimus*

5. Leaf blades (1)3-14.2 mm wide; rachis internodes <2 mm long; spikelet pubescent, sometimes glabrate [6]

6. Fascicles with 45-75 bristles, the inner 0.5-0.9(1.4) mm wide at base ... *C. longispinus*

6. Fascicles with 8-43 bristles, the inner 1-3 mm wide at base [7]
7. Fascicles 5.5-10.2 mm long, 2.5-5 mm wide, glabrate to moderately pubescent; inner bristles 2-5.8 mm long ... *C. spinifex*
7. Fascicles 9-16 mm long, 4-8 mm wide, densely pubescent, the inner bristles 4-8 mm long ... *C. tribuloides*
8. Leaf blades 2-3.5 mm wide, folded or involute ... *C. setaceus*
8. Leaf blades (2)3.5-12 mm wide, flat [9]
9. Panicles 4-200 cm long; fascicles not disarticulating from the rachis; bristles subequal to the spikelets, to 6 mm long; upper lemma margins pubescent; caryopses protruding from the florets at maturity ... *C. americanus*
9. Panicles 2-37.5 cm long; fascicles disarticulating from the rachis at maturity; some bristles longer than the spikelets, to 35 mm long; upper lemma margins glabrous; caryopses concealed by the lemmas and paleas at maturity [10]
10. Upper lemma smooth, lustrous, differentiated from the lower lemma; upper florets disarticulating [11]
10. Upper and lower lemma similar; upper florets not disarticulating [12]
11. Spikes terminal and axillary; fascicles with 40-90 long-ciliate inner bristles and 10-20 scabrous outer bristles; fascicle axes 1.5-2.5 mm long; spikelets pedicellate, pedicels 1-3.5 mm long ... *C. pedicellatus*
11. Spikes terminal; fascicles with 6-14 long-ciliate inner bristles and 13-30 scabrous outer bristles; fascicle axes 0.2-0.5 mm long; spikelets sessile ... *C. setosus*
12. Lower portion of the rachises scabrous; inner bristles fused at the base ... *C. ciliaris*
12. Lower portion of the rachises pubescent; inner bristles not fused [14]
13. Culms 0.5-1.5 m tall, internodes not glaucous; leaf blades 6-11 mm wide, usually reddish or purplish; lower glume 0.5-1 mm long ... *C. cupreus*
13. Culms (1)2-8 m tall, internodes often partly glaucous; leaf blades (4)12-40 mm wide, usually green; lower glume 0-0.3 mm long ... *C. purpureus*

\**Cenchrus americanus* (L.)Morrone— {AFP}

*Cenchrus brownii* Roem. & Schult.— {AFP}

\**Cenchrus ciliaris* L.— {AFP}

^ *Cenchrus cupreus* (Thorpe)Govaerts— {AFP}

*Cenchrus echinatus* L.— {AFP}

*Cenchrus gracillimus* Nash— {AFP}

*Cenchrus myosuroides* Kunth— {AFP}

\**Cenchrus pedicellatus* (Trin.)Morrone— {AFP}

\**Cenchrus setosus* Sw.— {AFP} Once recognized as *P. polystachion*, it appears that name was misapplied ([Veldkamp 2014](#); [Jarvis, Linnaean Typification Project](#)).

\**Cenchrus purpureus* (Schumach.)Morrone— {AFP} The blade channeled along midrib basally, midrib becoming conspicuous on older leaves, barely auriculate-clasping at base; nodes hairy; stems glaucous helps to distinguish this species from other tall grasses.

\**Cenchrus setaceus* (Forssk.)Morrone— {AFP}

*Cenchrus spinifex* Cav.— {AFP}

*Cenchrus tribuloides* L.— {AFP}

*Chasmanthium* {AFP}

1. Inflorescence branches lax, drooping; pedicels 10-30 mm long; lower glumes 4.2-9.1 mm long; callus pilose; fertile lemma keel wing scabrous to pilose throughout; caryopses 2.9-5 mm long ... *C. latifolium*

1. Inflorescence branches spreading, ascending to erect, generally stiff; pedicels 0.5-5 mm long; lower glumes 1.2-5 mm long; callus glabrous; fertile lemma keel not winged, scabridulous only near the apex; caryopses 1.9-3 mm long [2]

2. Culms leafy in proximal half; leaf blades (8)20-50 cm long; inflorescence branches mostly appressed; spikelets 4-10 mm long; fertile lemma with 3-9 veins; lemma and palea spreading open, exposing the caryopses [3]

2. Culms leafy nearly throughout; leaf blades 7-16(33) cm long; inflorescence branches mostly ascending to spreading; spikelets 9.5-24 mm long; fertile lemma with 9-13 veins; lemma and palea closely imbricate, concealing the caryopses [4]

3. Culm nodes to 1 mm wide; leaf sheath and collar glabrous; fertile lemma straight, with 3-7 veins ... *C. laxum*

3. Culm nodes (1)2-3.5 mm wide; leaf sheath and collar pilose; fertile lemma usually curved or irregularly contorted, with 7-9 veins ... *C. sessiliflorum*

4. Culm nodes often dark purple to blackish; ligules entire; inflorescence branch axils scabrous; fertile floret ascending from the rachilla; sterile florets (0)1(2); lower glumes 3.1-5 mm long ... *C. nitidum*

4. Culm nodes mostly light brown; ligules irregularly lacinate; inflorescence branch axils pilose; fertile floret diverging-spreading from the rachilla; sterile florets 2-4; lower glumes 2.5-2.9 mm long, with 2-3 veins ... *C. ornithorhynchum*

***Chasmanthium latifolium*** (Michx.)H.O.Yates— {AFP}

***Chasmanthium laxum*** (L.)H.O.Yates— {AFP}

***Chasmanthium nitidum*** (Baldwin)H.O.Yates— {AFP}

***Chasmanthium ornithorhynchum*** (Steud.)H.O.Yates— {AFP}

***Chasmanthium sessiliflorum*** (Poir.)H.O.Yates— {AFP}

## **Chloris** {AFP}

1. Lower glume 0.5-0.7 mm long; upper glume 1-1.5 mm long; proximalmost lemma awn 0.3-1.5 mm long ... *C. cucullata*

1. Lower glume 0.7-2.8 mm long; upper glume 1.9-4.3 mm long; proximalmost lemma awn 1.4-15 mm long [2]

2. Second floret 1.4-3.2 mm long [3]

2. Second floret 0.4-1.6 mm long [4]

3. Spikelets with 1 fertile floret and (1)2-4 staminate or sterile florets; third floret longer than subtending rachilla segment ... *C. gayana*

3. Spikelets with 1 fertile floret and 1(3) sterile florets; third floret absent or shorter than subtending rachilla segment ... *C. virgata*

4. Spikelets with 1 fertile floret and 1 sterile floret; proximalmost lemma awn 6-13 mm long; second floret 0.4-0.7 mm long ... *C. radiata*

4. Spikelets with 1 fertile floret and (1)2(3) sterile florets; proximalmost lemma awn 1.4-7.7 mm long; second floret 0.9-1.6 mm long [5]

5. Inflorescence branches 3-8 cm long, generally straight; proximalmost lemma awn 4-7.7 mm long and hairs to 1 mm long ... *C. barbata*

5. Inflorescence branches (5)8-20 cm long, lax and curvaceous; proximalmost lemma awn 1.4-4.8 mm long and hairs 1-3 mm long ... *C. elata*

- \**Chloris barbata* Sw.— {AFP}
- \**Chloris cucullata* Bischoff— {AFP}
- Chloris elata* Desv.— {AFP}
- \**Chloris gayana* Kunth— {AFP}
- \**Chloris radiata* (L.)Sw.— {AFP}
- \**Chloris virgata* Sw.— {AFP}

### Chrysopogon {AFP}

- 1. Upper lemma of sessile spikelet unawned, or awns to 0.8 cm long; pedicellate spikelet 2.5-8 mm long [2]
- 1. Upper lemma of sessile spikelet with awns 2-16 cm long; pedicellate spikelet 2.5-15 mm long [3]
- 2. Stoloniferous; callus of sessile spikelets 3-6.4 mm long, sharp, with golden-yellow hairs ... *C. aciculatus*
- 2. Cespitose; calluses of sessile spikelets 0.6-0.8 mm long, rounded, with white hairs ... *C. zizanioides*
- 3. Sessile spikelets 3.5-5(8) mm long, callus 0.7-1.5 mm long; upper lemma awn 2-3 cm long; pedicellate spikelets 7-15 mm long ... *C. fulvus*
- 3. Sessile spikelets 8-10 mm long, callus ca. 7 mm long; upper lemma awn 10-16 cm long; pedicellate spikelets 7-15 mm long ... *C. pauciflorus*

- \**Chrysopogon aciculatus* (Retz.)Trin.— {AFP}
- \**Chrysopogon fulvus* (Spreng.)Chiov.— {AFP}
- Chrysopogon pauciflorus* (Chapm.)Benth. ex Vasey— {AFP}

### Coelorachis {AFP}

- 1. Culms and sheaths terete; sessile spikelet lower glumes with pits along the veins, medially smooth or with rectangular pits ... *C. cylindrica*
- 1. Culms and sheaths flattened and keeled; sessile spikelet lower glumes smooth, rugose, or with ridges or rectangular pits [2]
- 2. Spikelets 2.1-2.4 mm wide; sessile spikelet lower glumes with rectangular pits ... *C. tessellata*
- 2. Spikelets 1.3-2 mm wide; sessile spikelet lower glume rugose or smooth [3]
- 3. Rachis distinctly indented below sessile spikelets; sessile spikelet lower glume conspicuously transversely rugose ... *C. rugosa*
- 3. Rachis not indented below sessile spikelets or only slightly so; sessile spikelet lower glume smooth to lightly transversely rugose ... *C. tuberculosa*

- Coelorachis cylindrica* (Michx.)Nash— {AFP}
- Coelorachis rugosa* (Nutt.)Nash— {AFP}
- Coelorachis tessellata* (Steud.)Nash— {AFP}
- Coelorachis tuberculosa* (Nash)Nash— {AFP} State Threatened.

### Coleataenia {AFP}

- 1. Leaf sheath broad, relatively even width from base to apex, the apex truncate to auriculate and the sheath margin extended 1-3 mm in width from the blade, the sheath much wider than the blade, the blade 1.5-2.5 mm wide; with creeping rhizomes ... *C. abscissa*

1. Leaf sheath relatively narrow, tapered or not, the apex not auriculate, the sheath margin not extended or only slightly extended (<0.6 mm) from the blade, the sheath subequal to slightly wider than the blade, the blade 1.5-12 mm wide; cespitose or with creeping rhizomes [2]
2. Leaf blades 1.5-4 mm wide, usually involute; glumes and lower lemmas without keeled midveins; upper florets with glabrous apices; panicles with appressed branches, relatively few spikelets; with short-creeping, knotty rhizomes, sometimes appearing nearly cespitose ... *C. tenera*
2. Leaf blades 2-12 mm wide, involute or not; glumes and lower lemmas with keeled midveins; upper florets with a tuft of small hairs at the apices; panicles appressed to spreading branches, with relatively many spikelets; cespitose or with scaly rhizomes [3]
3. Plants with conspicuous, elongate, scaly rhizomes; ligule membranous with scabrous edge, cilia <0.1 mm long; spikelets 2.3-3.9 mm long, rarely lanceolate, often falcate ... *C. anceps*
3. Plants cespitose, lacking conspicuous rhizomes; ligule membranous or ciliate; spikelets usually 1.6-3.8 mm long, lanceolate, not falcate [4]
4. Blades usually 2-7 mm wide; ligule ciliate, the cilia 0.5-3 mm long [5]
4. Blades usually 5-12 mm wide; ligule membranous with scabrous edge, cilia <0.1 mm long [6]
5. Spikelets 2-2.7 mm long, green or purplish-stained, often obliquely set on the pedicels ... *C. longifolia* subsp. *longifolia*
5. Spikelets 2.6-3.8 mm long, usually purple, slender, erect on the pedicels ... *C. longifolia* subsp. *combsii*
6. Spikelets 2.4-3 mm long, usually <0.7 mm wide, fruit stipitate ... *C. rigidula* subsp. *elongata*
6. Spikelets 1.6-2.5 mm long, usually >0.6 mm wide, fruit not or slightly stipitate [7]
7. Lower inflorescence branches ascending to erect; spikelets 1.9-2.5 mm long ... *C. rigidula* subsp. *condensa*
7. Lower inflorescence branches ascending to spreading; spikelets 1.6-2.3 mm long ... *C. rigidula* subsp. *rigidula*

***Coleataenia abscissa*** (Swallen)LeBlond— {AFP} Endemic. State Endangered.

***Coleataenia anceps*** (Michx.)Soreng— {AFP}

***Coleataenia longifolia*** (Torr.)Soreng— {AFP}

***Coleataenia rigidula*** (Bosc ex Nees)LeBlond— {AFP}

***Coleataenia tenera*** (Beyrich ex Trin.)Soreng— {AFP}

### Cortaderia {AFP}

\****Cortaderia selloana*** (Schult. & Schult.f.)Asch. & Graebn.— {AFP}

### Ctenium {AFP}

1. Rhizomes absent; upper glume with a row of prominent glands on each side of midrib, the glume awn diverging at maturity ... *C. aromaticum*

1. Rhizomes scaly; upper glume eglandular or glands few, inconspicuous, glume awn straight to ascending ... *C. floridanum*

***Ctenium aromaticum*** (Walter)A.W.Wood— {AFP}

***Ctenium floridanum*** (Hitchc.)Hitchc.— {AFP} State Endangered.

### Cymbopogon {AFP}

1. Pedicel margin pilose, adaxially glabrous; ligules 3-6 mm long; lower glume keels of sessile spikelets narrowly winged; citronella ... *C. nardus*

1. Pedicel margin pilose, adaxially pilose; ligule and glume keel various [2]
2. Ligules 0.5-2 mm long; leaf blades green; lower glumes of the sessile spikelets flat above, the keels narrowly winged; lemongrass ... *C. citratus*
2. Ligules 2-6 mm long; leaf blades whitish; lower glumes of the sessile spikelets shallowly concave distally, the keels not winged ... *C. jwarancusa*

^ *Cymbopogon citratus* (DC. ex Nees) Stapf— {AFP}

^ *Cymbopogon jwarancusa* (Jones) Schult.— {AFP}

^ *Cymbopogon nardus* (L.) Rendle— {AFP}

### Cynodon {AFP}

1. Plant with subterranean rhizomes and surface stolons; larger main stems 0.5-1 mm wide; racemes straight and stiff, <5.5 cm long ... *C. dactylon*
1. Plant with surface stolons, without rhizomes; larger main stems 2-3 mm wide; racemes typically lax and curvaceous, >4.5 cm long ... *C. nlemfuensis*

\* *Cynodon dactylon* (L.) Pers.— {AFP}

\* *Cynodon nlemfuensis* Vanderyst— {AFP}

### Dactylis {AFP}

\* *Dactylis glomerata* L.— {AFP}

### Dactyloctenium {AFP}

\* *Dactyloctenium aegyptium* (L.) Willd.— {AFP}

### Danthonia {AFP}

1. Leaf sheaths usually villous, occasionally glabrate; glumes 14-18 mm long; lemma margin hairs 2.5-4 mm long; lemma awns 10-17 mm long ... *D. sericea*
1. Leaf sheaths glabrous or pilose at base; glumes 7-10 mm long; lemma hairs 0.5-2 mm long, awns 2-8 mm long ... *D. spicata*

*Danthonia sericea* Nutt.— {AFP}

*Danthonia spicata* (L.) P. Beauv. ex Roem. & Schult.— {AFP}

### Desmazeria {AFP}

\* *Desmazeria rigida* (L.) Tutin— {AFP}

### Dichantherium {AFP}

1. Plant rather low, with numerous basal spreading or sprawling branches and leaves, the inflorescence often not exceeding or only slightly exceeding the leaves ... Key A
1. Plant usually elongate and erect, unbranched or some branches cauline, with numerous cauline leaves, the inflorescence exerted or not [2]
2. Ligules (or pseudoligule) of hairs 1-5 mm long, at least some hairs 2-5 mm long ... Key B
2. Ligules (or pseudoligule) membranous or of hairs to 1.8(2) mm long [3]
3. Leaf sheaths mottled, sometimes viscid; culm stout 2-6 mm wide ... Key C
3. Leaf sheaths not mottled (if mottled, culm slender, 0.3-2 mm wide) [4]
4. Leaf blades rounded-cordate at the base, the blade base abruptly contracted to the sheath (erectifolium-commutatatum group) ... Key D



4. Leaf blades generally cuneate at the base, gradually narrowed to the sheath [5]
5. Distal internodes greatly elongated, the leaves nearly all in the basal part, mostly with only a solitary leaf (often reduced in size) somewhat midway between the basal leaves and the inflorescence ... *D. nudicaule*
5. Distal internodes subequal to proximal ones, the leaves usually well developed throughout the culm below the inflorescence [6]
6. Lower glumes thinner and more weakly veined than the upper glumes, attached 0.1-0.5 mm below the upper glumes, the bases clasping the pedicels; spikelets attenuate basally [7]
6. Lower glumes similar in texture and vein prominence to the upper glumes, attached immediately below the upper glumes, the bases not clasping the pedicels; spikelets usually not attenuate basally [9]
7. Culm leaf blades 2-7 cm long, 7-12 times as long as wide, not or slightly involute, spreading, without raised veins, not longitudinally wrinkled; spikelets obovoid-obpyriform, planoconvex in side view (lancearium group) ... Key E
7. Culm leaf blades 4-16 cm long, 15-50 times as long as wide, or involute, stiffly erect or ascending, with prominently raised veins, the lower blades usually longitudinally wrinkled; spikelets ellipsoid to obovoid, biconvex in side view [8]
8. Culm internodes and nodes, and spikelets densely villous or densely pubescent ... *D. consanguineum*
8. Culm internodes and nodes, and spikelets glabrous to moderately pubescent (aciculare group) ... Key F
9. Culms 5-40(55) cm tall, delicate, 0.2-0.8(1.6) mm wide; spikelets 1.1-1.7 mm long; larger leaf blades 1.5-6 cm long, 1.5-6 mm wide (ensifolium group) ... Key G
9. Culms (18)40-100 cm tall, rarely delicate, (0.8)1-2 mm wide; spikelets 1.5-2.7 mm long; larger leaf blades 3.5-14 cm long, 5-14 mm wide (dichotomum group) ... Key H

#### Key A

1. Leaf sheath hairs retrorse to spreading; distal leaf blades 4-17 cm long, at least 3/4 as long as basal ones, the margins short-ciliate; spikelets with papillose-based hairs ... *D. laxiflorum*
1. Leaf sheath glabrous or hairs ascending; distal leaf blades 1.5-6 cm long, <3/4 as long as basal ones, the margins with papillose-based cilia; spikelets glabrous or pubescent, lacking papillae [2]
2. Spikelet pubescent, 1.5-2.1 mm long ... *D. strigosum* var. *leucoblepharis*
2. Spikelet glabrous, 1.1-1.8 mm long [3]
3. Stem nodes and leaf blade surfaces glabrous ... *D. strigosum* var. *glabrescens*
3. Stem nodes and leaf blade surfaces pubescent ... *D. strigosum* var. *strigosum*

#### Key B

1. Spikelets 2.5-4.3 mm long, usually obovoid, turgid; upper glumes usually with an orange or purple spot at the base, the veins prominent [2]
1. Spikelets 0.8-3 mm long, ellipsoid or obovoid, not turgid; upper glumes lacking an orange or purple spot at the base and the veins not prominent [4]
2. Culm nodes with dense, spreading to retrorse hairs; leaf blade lower surface softly velvety pubescent ... *D. ravenelii*
2. Culm nodes glabrous or sparsely pubescent; leaf blade lower surface glabrous or pubescent, but not velvety pubescent [3]
3. Ligule of hairs 2-3 mm; larger leaf blades 4-9 mm wide, 10-15 times longer than wide, often partly involute; spikelets ellipsoid to oblong-obovoid, (3)3.4-4.2 mm long, 1.7-2(2.2) mm wide, sparsely pubescent or rarely glabrous ... *D. oligosanthos* subsp. *oligosanthos*

3. Ligule of hairs 1-1.5 mm long; larger leaf blades 6-15 mm wide, 7-10 times longer than wide, flat; spikelets broadly obovoid-ellipsoid, 2.7-3.5 mm long, 2-2.4 mm wide, glabrous or rarely sparsely pubescent ... *D. oligosanthos* subsp. *scribnerianum*
4. Sheaths with hairs to 4 mm long; spikelets 1.8-3 mm long [5]
4. Sheaths glabrous or pubescent with hairs no more than 3 mm long; spikelets 0.8-1.6(2.1) mm long [7]
5. Proximal culm internodes and associated leaf sheaths with soft, spreading or retrorse, papillose-based hairs, the longer hairs to 4-7 mm long; spikelets 1.8-2.5 mm long ... *D. ovale* subsp. *villosissimum*
5. Proximal culm internodes and associated leaf sheaths glabrate or with ascending or appressed hairs (lacking papillae) 2-4 mm; spikelets 2.1-3 mm long [6]
6. Basal leaf blades long-ciliate on or near the margins and bases; spikelets 2.5-3 mm long ... *D. ovale* subsp. *ovale*
6. Basal leaf blades lacking long cilia on or near the margins and bases; spikelets 2.1-2.6 mm long ... *D. ovale* subsp. *pseudopubescens*
7. Culms weak, 0.3-0.8 mm wide; spikelets 0.8-1.1 mm long, puberulent to subglabrous ... *D. wrightianum*
7. Culms weak to robust, (0.8)1-2.5 mm wide; spikelets 1.1-1.6 mm long [8]
8. Spikelets 1.1-1.5 mm long [9]
8. Spikelets 1.3-1.6 mm long [10]
9. Culm nodes, internodes, and leaf sheaths pubescent to glabrate ... *D. leucothrix* subsp. *leucothrix*
9. Culm nodes, internodes, and leaf sheaths glabrous ... *D. leucothrix* subsp. *longiligulatum*
10. Inflorescence 2-6 times as long as wide, the branches ascending-appressed; spikelets ascending to appressed ... *D. spretum*
10. Inflorescence 1-2 times as long as wide, the branches spreading to ascending; spikelets diverging to ascending [11]
11. Culm nodes, internodes, and leaf sheaths glabrous ... *D. acuminatum* subsp. *lindheimeri*
11. Culm nodes, internodes, and leaf sheaths pubescent to glabrate [12]
12. Culms and proximal leaf sheaths with spreading long hairs (sometimes with short hairs also present); leaf blade lower surface softly pubescent ... *D. acuminatum* subsp. *acuminatum*
12. Culms and sheaths pilose with with mostly ascending hairs or short spreading hairs; leaf blade lower surface appressed-pubescent or puberulent ... *D. acuminatum* subsp. *fasciculatum*

#### Key C

1. Culm nodes densely villous, often turgid, subtended by a viscid glabrous ring; leaf blades densely soft pubescent ... *D. scoparium*
1. Culm nodes glabrous or sparsely pubescent, not turgid; leaf blades glabrous or sparsely pubescent [2]
2. Cauline blades 15-30 mm wide, apices flat, acuminate; spikelets sparsely pubescent ... *D. clandestinum*
2. Cauline blades 7-15 mm wide, apices involute, long tapering; spikelets glabrous or sparsely puberulent ... *D. scabriusculum*

#### Key D

1. Culm leaf blades ascending, some margins often with white-cartilaginous; spikelets 1-1.4 mm long ... *D. erectifolium*
1. Culm leaf blades ascending to spreading, lacking white, cartilaginous margins; spikelets 1.4-5.2 mm long [2]

- 2. Spikelets 1.4-2.2 mm long ... *D. sphaerocarpon*
- 2. Spikelets 2.4-3.2 mm long [3]
- 3. Ligule membranous-ciliate, 0.4-0.9 mm long; spikelets 3.8-5.2 mm long; some lower florets staminate ... *D. boscii*
- 3. Ligule membranous-ciliate, 0.1-0.4 mm long; spikelets 2.2-3.2 mm long; lower floret sterile [4]
- 4. Leaf blade undersides glaucous, light green ... *D. mutabile*
- 4. Leaf blade undersides green, not glaucous [5]
- 5. Culm leaf blades nearly linear, 5-14 mm wide, 9-12 times as long as wide; spikelets 3-3.2 mm long; spikelets 1.8-2.5 times as long as the lower glume ... *D. equilaterale*
- 5. Culm leaf blades ovate-lanceolate, 6-25 mm wide, 4-8 times as long as wide; spikelets 2.5-3.2 mm long; spikelets 3-4 times as long as the lower glume [6]
- 6. Culms more or less erect, with caudices; leaf blades nearly symmetrical, straight; spikelets 2.5-2.9 mm long; lower lemma apex obtuse ... *D. commutatum* subsp. *commutatum*
- 6. Culms decumbent or sprawling, with loose caudices or rhizomes; leaf blades strongly asymmetric-falcate; spikelets 2.9-3.2 mm long; lower lemma apex acute ... *D. commutatum* subsp. *joorii*

#### Key E

- 1. Culm leaf blades 2-5 cm long, 2.5-4.5 mm wide; spikelets 1.5-2.0 mm long, puberulent to nearly glabrous ... *D. lancearium* subsp. *portoricense*
- 1. Culm leaf blades 4-7 cm long, 3.5-8 mm wide; spikelets 1.8-2.6 mm long, usually densely pubescent or puberulent (rarely glabrous); [2]
- 2. Basal leaf blades 2-5 cm long; culm leaf blades 2-5 mm wide, spreading (*patulum*) ... *D. lancearium* subsp. *lancearium*
- 2. Basal leaf blades 3-8 cm long; culm leaf blades 6-12 mm wide, ascending ... *D. lancearium* subsp. *webberianum*

#### Key F

- 1. Spikelets 2.9-3.6 mm long, strongly attenuate at the base; lower glumes attached 0.3-0.5 mm below the upper glumes ... *D. aciculare* subsp. *fusiforme*
- 1. Spikelets 1.7-3(3.2) mm long, not strongly attenuate at the base; lower glumes attached 0.1-0.2 mm below the upper glumes [2]
- 2. Basal leaf blades 1-3 cm long, often  $< \frac{1}{2}$  as long as the cauline blades; inflorescence usually more than  $\frac{1}{2}$  as wide as long, branches spreading; spikelets 1.7-2.3 mm long ... *D. aciculare* subsp. *aciculare*
- 2. Basal leaf blades 4-8 cm long, mostly  $> \frac{1}{2}$  as long as the cauline blades; inflorescence usually less than  $\frac{1}{2}$  as wide as long, branches ascending to erect; spikelets (1.8)2-3(3.2) mm long [3]
- 3. Larger cauline blades 5-8 cm long, 3-5 mm wide, 10-25 times as long as wide; inflorescence usually  $< \frac{1}{4}$  as wide as long, branches strongly ascending to erect; spikelets 1.8-2.2 mm long, pubescent, apex obtuse; upper glume and lower lemma reaching the upper lemma ... *D. aciculare* subsp. *neuranthum*
- 3. Larger cauline blades 5-9 cm long, 2-3 mm wide, 15-40 times as long as wide; inflorescence usually  $\frac{1}{4}$ - $\frac{1}{2}$  as wide as long, branches ascending; spikelets 2.3-3(3.2) mm long, glabrous to sparsely pubescent, apex acute; upper glume and lower lemma exceeding the upper lemma [4]
- 4. Culms, leaf sheaths, and spikelets usually pubescent, at least proximally ... *D. aciculare* subsp. *angustifolium*
- 4. Culms, leaf sheaths, and spikelets sparsely pubescent to almost glabrous ... *D. aciculare* subsp. *pinetorum*

### Key G

1. Culm nodes pubescent; leaf sheath with spreading hairs; ligule of hairs 1-2 mm long ... *D. curtifolium*
1. Culm nodes glabrous to sparsely pubescent; leaf sheath glabrous or sparsely ciliate; ligule of hairs 0.2-1 mm long [2]
2. Culms reclining or weakly erect; ligule of hairs (0.2)0.8-1.8 mm long; cauline leaf blade margins not white-cartilaginous ... *D. ensifolium*
2. Culms erect, sometimes geniculate basally; ligule of hairs 0.2-0.7 mm long; cauline leaf blade margins white- cartilaginous [3]
3. Culms and branches few; cauline leaf blades flat, the bases rounded; flag leaves subtending inflorescence much shorter than proximal leaves ... *D. tenue*
3. Culms and branches numerous; cauline leaf blades often involute, the bases subcordate; flag leaves subtending inflorescence slightly shorter than proximal leaves [4]
4. Culms 5-20 cm tall, glabrous or puberulent; spikelets 1.3-1.5 mm long, puberulent ... *D. chamaelonche* subsp. *breve*
4. Culms 10-45 cm tall, glabrous; spikelets 1.1-1.4 mm long, glabrous ... *D. chamaelonche* subsp. *chamaelonche*

### Key H

1. Proximal culm nodes pubescent (or culms erect, terete, leaf blades spreading) [2]
1. Proximal culm nodes glabrous (culms weak, flattened if leaf blades spreading) [4]
2. Spikelets 1.5-1.8 mm long, upper floret 0.6-0.8 mm wide ... *D. dichotomum* subsp. *microcarpon*
2. Spikelets 1.8-2.5 mm long; upper floret 0.7-1.0 mm wide [3]
3. Culm nodes often glabrous, sometimes pubescent; spikelets glabrous, rarely pubescent; mid-culm leaf blades 5-7 mm wide ... *D. dichotomum* subsp. *dichotomum*
3. Culm nodes pubescent; spikelets pubescent; mid-culm blades 7-14 mm wide ... *D. dichotomum* subsp. *nitidum*
4. Culms weak, reclining or sprawling, often flattened; leaf blades spreading, green; inflorescence branches spreading to ascending ... *D. lucidum*
4. Culms robust, erect, terete; leaf blades ascending, green to olive-green; inflorescence branches ascending to subappressed [5]
5. Leaf blades thickened, olive green; spikelets moderately pubescent ... *D. sphagnicola*
5. Leaf blades moderately thick, green; spikelets glabrous [6]
6. Distal leaf sheaths 2.5-7.5(10.5) mm long; peduncle 5-18.5 cm long; lower glume 0.6-0.9 mm long ... *D. dichotomum* subsp. *roanokense*
6. Distal leaf sheaths (6)8-15 mm long; peduncle (20)30-50(60) cm long; lower glume 0.3-0.7(0.9) mm long ... *D. hirstii*

***Dichantherium aciculare*** (Desv. ex Poir.)Gould & C.A.Clark— {AFP}

***Dichantherium acuminatum*** (Sw.)Gould & C.A.Clark var. ***acuminatum***— {AFP}

***Dichantherium acuminatum*** (Sw.)Gould & C.A.Clark var. ***lindheimeri*** (Nash)Gould & C.A.Clark— {AFP}

***Dichantherium arenicollinum*** LeBlond & S.C. Carr—Clay & Volusia cos. Thought to be part of sect. *Pedicellata*.

***Dichantherium boscii*** (Poir.)Gould & C.A.Clark— {AFP}

***Dichantherium chamaelonche*** subsp. ***breve***—{AFP} Endemic.

***Dichantherium chamaelonche*** (Trin.)Freckman & Long subsp. ***chamaelonche***—

*Dichantherium clandestinum* (L.)Gould— {AFP}  
*Dichantherium commutatum* (Schult.)Gould— {AFP}  
*Dichantherium curtifolium* (Nash)LeBlond—  
*Dichantherium dichotomum* (L.) Gould— {AFP}  
*Dichantherium ensifolium* (Baldwin ex Elliott)Gould— {AFP}  
*Dichantherium equilaterale* (Scribn.)Wipff—  
*Dichantherium erectifolium* (Nash)Gould & C.A.Clark— {AFP}  
*Dichantherium laxiflorum* (Lam.)Gould— {AFP}  
*Dichantherium leucothrix* (Nash)Freckmann— {AFP}  
*Dichantherium lucidum* (Ashe)LeBlond—  
*Dichantherium mutabile* (Scribn. & J.G.Sm.)Wipff—  
*Dichantherium nudicaule* (Vasey)B.F.Hansen & Wunderlin— {AFP} State Threatened.  
*Dichantherium oligosanthes* (Schult.)Gould— {AFP}  
*Dichantherium ovale* (Elliott)Gould & C.A.Clark— {AFP}  
*Dichantherium portoricense* (Desv. ex Ham.)B.F.Hansen & Wunderlin— {AFP}  
*Dichantherium ravenelii* (Scribn. & Merr.)Gould— {AFP}  
*Dichantherium scabriusculum* (Elliott)Gould & C.A.Clark— {AFP}  
*Dichantherium scoparium* (Lam.)Gould— {AFP}  
*Dichantherium sphaerocarpon* (Elliott)Gould— {AFP}  
*Dichantherium strigosum* (Muhl. ex Elliott)Freckmann var. *glabrescens* (Griseb.)Freckmann—  
{AFP}  
*Dichantherium strigosum* (Muhl. ex Elliott)Freckmann var. *leucoblepharis* (Trin.)Freckmann—  
{AFP}  
*Dichantherium strigosum* (Muhl. ex Elliott)Freckmann var. *strigosum*— {AFP}  
*Dichantherium tenue*—{AFP}

### Dichanthium {AFP}

1. Rame (inflorescence branch) densely villous, sessile or subsessile, with spikelets occurring at the very base ... *D. sericeum*

1. Rame glabrous to pilose, pedunculate, with a bare region or peduncle 2-10 mm long below the first set of spikelets [2]

2. Rame peduncle glabrate to glabrous except for a tuft of hairs at the very base, inflorescence peduncle glabrous ... *D. annulatum*

2. Rame peduncle and often the upper part of the inflorescence peduncle strongly pilose ... *D. aristatum*

\**Dichanthium annulatum* (Forssk.)Stapf— {AFP}

\**Dichanthium aristatum* (Poir.)C.E.Hubb.— {AFP}

### Digitaria {AFP}

1. Inflorescence a diffuse panicle, the spikelets widely separated from each other, the pedicels to 8 cm long ... *D. cognata*

1. Inflorescence with spikelike branches, the spikelets mostly densely aggregated, the pedicels to 0.5 cm long [2]

2. Upper glume and often lower lemma with capitate to clavate trichomes [3]

2. Upper glume and lower lemma without capitate or clavate trichomes [4]

3. Basal leaf sheaths often glabrous; leaf blades usually <1.1 mm wide and involute ... *D. filiformis* var. *dolichophylla*

3. Basal leaf sheaths often pubescent; leaf blades usually >1.1 mm wide and flat ... *D. filiformis* var. *filiformis*
4. Spikelets 1.3-2.2 mm long [5]
4. Spikelets 2.1-5.2 mm long [11]
5. Stems with exserted terminal inflorescences and usually some with axillary (sometimes concealed) inflorescences ... *D. ischaemum*
5. Stems with exserted terminal inflorescences only [6]
6. Inflorescence 20-30 cm long; upper glume glabrous, 0.9-1 mm long, lower lemma 5-veined ... *D. gracillima*
6. Inflorescence 2-15 cm long; upper glume pubescent, 0.7-1.3 mm long, lower lemma 5-7-veined [7]
7. Spikelets paired on the middle portions of the primary branches; pedicels not adnate to the branch axes ... *D. nuda*
7. Spikelets in groups of 3-5 on the middle portions of the primary branches, the longer pedicels in each group often adnate to the branch axes for part of their length [8]
8. Primary panicle branches usually all digitate, sometimes 1 below the others, the branches erect to ascending; upper lemmas dark brown at maturity; upper glumes 1/2 as long as to almost equaling the upper lemmas ... *D. violascens*
8. Primary panicle branches, if more than 2, racemose, the terminal branches erect, the other branches usually divergent; upper lemmas light brown to brown at maturity; upper glumes almost as long as the upper lemmas [9]
9. Leaf sheaths and upper leaf blades usually densely pilose; upper glumes 1/6-1/3 long as the spikelets ... *D. serotina*
9. Leaf sheaths and upper leaf blades usually glabrate; upper glumes subequaling the spikelets [10]
10. Upper glumes 3-veined; spikelets lanceolate; plants not stoloniferous ... *D. floridana*
10. Upper glumes 5-veined; spikelets elliptic to obovate; plants stoloniferous ... *D. longiflora*
11. Lower lemma villous with golden brown trichomes to 6 mm long ... *D. insularis*
11. Lower lemma with whitish to faintly yellowish trichomes <2 mm long [12]
12. Inflorescence branches not winged or the wings not more than 1/2 the width of the midrib [13]
12. Inflorescence branches winged, the wings at least 1/2 the width of the midrib [15]
13. Culms sometimes branching at the aerial nodes, not rooting at the lower nodes; leaf blades 2-2.2 mm wide, flat or folded; upper glumes glabrous ... *D. pauciflora*
13. Culms not branching at the aerial nodes, often rooting at the lower nodes; leaf blades 2-7 mm wide, flat; upper glumes villous or glabrous [14]
14. Upper glumes 7-9-veined, glabrous or obscurely pubescent ... *D. simpsonii*
14. Upper glumes (3-)5-veined, shortly villous on the margins and sometimes between the margins ... *D. texana*
15. Plant densely cespitose or rhizomatous, the stems hardened and knobby at the base, sometimes with long stolons rooting at distant nodes [16]
15. Plant cespitose to diffuse, the stems weak or not knobby at the base, sometimes rooting at the proximal nodes, without long stolons that root primarily at distant nodes [17]
16. Midveins of the lower lemmas smooth throughout ... *D. eriantha*
16. Midveins of the lower lemmas scabrous, at least on the distal 1/2 ... *D. milanjana*
17. Inner pair of lateral veins of the lower lemma of the sessile spikelet moderately well spaced between the midvein and the margin [18]
17. Inner pair of lateral veins of the lower lemma of the sessile spikelet crowded near the margin [20]

18. Lowest panicle nodes glabrous or with hairs less than 0.4 mm long; spikelets 2.6-3.7 mm long; spikelets dimorphic with respect to their pubescence; lower lemmas of the upper spikelets of each spikelet pair with marginal hairs that become widely divergent at maturity; lower lemmas of the lower spikelets in each pair glabrous or with hairs that remain appressed at maturity ... *D. bicornis*
18. Lowest panicle nodes with hairs more than 0.4 mm long; spikelets 1.7-2.8 mm long; spikelets homomorphic with respect to their pubescence [19]
19. Leaf sheaths usually pilose throughout, especially the proximal sheaths; upper surfaces of the blades evenly, sometimes densely, hairy; upper glumes 1/3-1/2 as long as the spikelets ... *D. horizontalis*
19. Leaf sheaths glabrous or with sparsely pilose near the base; upper surfaces of the blades glabrous or with a few long hairs near the base; upper glumes 2/5-4/5 as long as the spikelets ... *D. nuda*
20. Lower glumes absent or no more than 0.1 mm long [21]
20. Lower glumes 0.1-0.8 mm long [22]
21. Upper glumes 1-2.2 mm long, 0.4-0.8 times as long as the spikelets; anthers 0.3-0.6 mm ... *D. nuda*
21. Upper glumes 0.2-1.3 mm long, less than 0.4 times as long as the spikelets; anthers 0.6-1.3 mm long ... *D. setigera*
22. Primary branches glabrous or with hairs shorter than 1 mm; spikelets 2.7-4.1 mm long; lower glumes 0.2-0.8 mm long [23]
22. Primary branches with scattered hairs 1-4 mm long; spikelets 1.7-2.8 mm long; lower glumes 0.1-0.2 mm long [24]
23. Lowermost inflorescence node glabrous or the hairs <0.4 mm long; lower glume rounded to truncate at the apex; lower lemma of the sessile spikelet with equidistant veins ... *D. bicornis*
23. Lower most inflorescence node with hairs >0.4 mm long; lower glume acute at the apex; lower lemma of the sessile spikelet with veins crowded at the margin ... *D. ciliaris*
24. Leaf sheaths usually pilose throughout, especially the proximal sheaths; upper surfaces of the blades evenly, sometimes densely, hairy; upper glumes 1/3-1/2 as long as the spikelets ... *D. horizontalis*
24. Leaf sheaths glabrous or with sparsely pilose near the base; upper surfaces of the blades glabrous or with a few long hairs near the base; upper glumes 2/5-4/5 as long as the spikelets ... *D. nuda*

\**Digitaria bicornis* (Lam.)Roem. & Schult.— {AFP}

*Digitaria ciliaris* (Retz.)Koeler— {AFP}

*Digitaria cognata* (Schult.)Pilg.— {AFP}

\**Digitaria eriantha* Steud.— {AFP}

*Digitaria filiformis* (L.)Koeler var. *dolichophylla* (Henrard)Wipff— {AFP} Probably restricted to Miami-Dade, and probably misapplied elsewhere in Florida. State Threatened.

*Digitaria filiformis* (L.)Koeler var. *filiformis*— {AFP}

*Digitaria floridana* Hitchc.— {AFP} Endemic.

*Digitaria gracillima* (Scribn.)Fernald— {AFP} Endemic.

*Digitaria horizontalis* Willd.— {AFP}

*Digitaria insularis* (L.)Fedde— {AFP}

\**Digitaria ischaemum* (Schreb. ex Schweigg.)Schreb. ex Muhl.— {AFP}

\**Digitaria longiflora* (Retz.)Pers.— {AFP}

\**Digitaria milaniana* (Rendle)Stapf— {AFP}

\**Digitaria nuda* Schumach.— {AFP}

***Digitaria pauciflora*** Hitchc.— {AFP} Endemic. State Endangered.

***Digitaria serotina*** (Walter)Michx.— {AFP}

\****Digitaria setigera*** Roth ex Roem. & Schult.— {AFP}

***Digitaria simpsonii*** (Vasey)Fernald— {AFP} Endemic.

\****Digitaria texana*** Hitchc.— {AFP}

\****Digitaria violascens*** Link— {AFP}

### Dinebra {AFP}

1. Leaf sheath glabrous to minutely scabrous; inflorescence 1-3 cm wide ... *D. nealleyi*

1. Leaf sheath sparsely to densely hairy, hairs papillose-based; inflorescence 4-17 cm wide ... *D. panicea* subsp. *mucronata*)

\****Dinebra nealleyi*** (Vasey)P.M.Peterson & N.Snow— {AFP}

***Dinebra panicea*** (Retz.)P.M.Peterson & N.Snow subsp. ***mucronata*** (Michx.)P.M.Peterson & N.Snow— {AFP}

### Diplachne {AFP}

1. Inflorescence usually partially enclosed in the leaf sheaths, exceeded by the leaves; lower glume 1.5-3 mm long; lemmas often with a dark spot in the basal ½ ... *D. fusca* subsp. *fascicularis*

1. Inflorescence usually completely exserted, exceeding the leaves; lower glume 0.6-1.3(2.6) mm long; lemmas usually lacking a dark spot ... *D. fusca* subsp. *uninervia*

***Diplachne fusca*** (L.)P.Beauv. ex Roem. & Schult. subsp. ***fascicularis*** (Lam.)P.M.Peterson & N.Snow— {AFP}

***Diplachne fusca*** (L.)P.Beauv. ex Roem. & Schult. subsp. ***uninervia*** (J.Presl)P.M.Peterson & N.Snow— {AFP}

### Disakisperma {AFP}

***Disakisperma dubium*** (Kunth)P.M.Peterson & N.Snow— {AFP}

### Distichlis {AFP}

1. Leaves clustered on short-shoots, the blades 0.5-1(1.5) cm long; inflorescence with 1 spikelet ... *D. littoralis*

1. Leaves well spaced on the main culm, the blades (1)3-12(20) cm long; inflorescence with 2-20 spikelets ... *D. spicata*

***Distichlis littoralis*** (Engelm.)H.L.Bell & Columbus— {AFP}

***Distichlis spicata*** (L.)Greene— {AFP}

### Echinochloa {AFP}

1. Ligules hispid, at least on the lower leaves ... *E. polystachya*

1. Ligules absent, glabrous, or short-pubescent [2]

2. Leaf sheaths, at least the lowermost, distinctly hirsute or hispid or papillose, usually with papilla-based trichomes ... *E. walteri*

2. Leaf sheaths glabrous or rarely with a few scattered soft trichomes [3]

3. Lateral branches of the panicle simple, <2 cm long, with spikelets in four regular rows; spikelets awnless [4]



3. Lateral branches of panicle sometimes rebranched, often >2 cm long, with spikelets in irregular rows; spikelets awned or awnless [5]
4. Inflorescence branches ascending to spreading; spikelets disarticulating at maturity, the grain shed ... *E. colonum* subsp. *colonum*
4. Inflorescence branches often incurved; spikelets plump, not disarticulating at maturity, the grain persisting (*E. frumentacea*) ... *E. colonum* subsp. *edulis*
5. Lemma of the fertile floret narrowly ovate or ellipsoid ... *E. crus-pavonis*
5. Lemma of fertile floret broadly ovate or ellipsoid [6]
6. Shiny, coriaceous apex of the fertile lemma acute or obtuse, sharply differentiated into a withering, membranous tip and with a ring of short trichomes at the separation of the two zones [7]
6. Shiny, coriaceous apex of the fertile lemma acute to acuminate, gradually differentiated into the membranous tip and without a ring of short trichomes (although the apex may be setulose) [8]
7. Inflorescence branches (at least some) ascending to spreading; spikelets green to purplish, disarticulating at maturity, the grain shed, awns absent or prolific (to 3 mm long) ... *E. crusgalli* subsp. *crusgalli*
7. Inflorescence branches often incurved; spikelets plump, purplish brown, not disarticulating at maturity, the grain persisting, awns absent or few (to 2 mm long) (*E. esculenta*) ... *E. crusgalli* subsp. *utilis*
8. Lower floret (the floret not enclosed by the coriaceous lemma) of the spikelet sterile or absent; anthers of upper florets (floret enclosed by coriaceous lemma) 0.4-1.2 mm long ... *E. muricata*
8. Lower floret (the floret not enclosed by the coriaceous lemma) of the spikelet male; anthers of upper florets (floret enclosed by coriaceous lemma) 1.2--1.7 mm long ... *E. paludigena*

\**Echinochloa colonum* (L.)Link— {AFP}

\**Echinochloa crus-galli* (L.)P.Beauv. subsp. *crus-galli*— {AFP}

^ *Echinochloa crus-galli* (L.)Link subsp. *utilis* (Ohwi & Yabuno)T.Koyama— {AFP}

\**Echinochloa crus-pavonis* (Kunth)Schult.— {AFP}

*Echinochloa muricata* (P.Beauv.)Fernald— {AFP}

*Echinochloa paludigena* Wiegand— {AFP} Endemic.

\**Echinochloa polystachya* (Kunth)Hitchc.— {AFP}

*Echinochloa walteri* (Pursh)A.Heller— {AFP}

Eleusine {AFP}

\**Eleusine indica* (L.)Gaertn.— {AFP}

Elionurus {AFP}

*Elionurus tripsacoides* Humb. & Bonpl. ex Willd.— {AFP}

Elymus {AFP}

*Elymus virginicus* L.— {AFP}

Eragrostis {AFP}

1. Palea keel conspicuously ciliate, cilia 0.2-0.8 mm long and subequal to longer than the lemma width (lemma glandular) ... Key A

1. Palea keel scabrous or with cilia <0.3 mm long, much shorter than the lemma width (if cilia to 0.3 mm long, then lemma glandular) [2]
2. Culms, leaves, lemmas, inflorescence rachis, or pedicels with glands ... Key B
2. Culms, leaves, lemmas, inflorescence rachis, or pedicels eglandular [3]
3. Annual, culm bases weak ... Key C
3. Perennials, culm base tough [4]
4. Inflorescence very diffuse, to 45 cm wide, the spikelets distant from each other along the branches (pedicels and internodes between pedicels to 4.5 cm long), the branches spreading to spreading-ascending ... Key D
4. Inflorescence relatively compact, to 15(30) cm wide, the spikelets overlapping along the branches (pedicels and internodes between pedicels mostly <1.5 cm long), the branches spreading to appressed ... Key E

#### Key A

1. Pedicels 1-4(7) mm long, straight to curved, subequal to longer than the spikelets; lemma margin cilia 0.3-0.5 mm long; anthers 3 ... *E. tenella*
1. Pedicels 0.1-1 mm long, straight, mostly shorter than the spikelets; anthers 2 [2]
2. Inflorescence 0.2-1.5 cm wide, branches mostly appressed; spikelets densely congested ... *E. ciliaris* var. *ciliaris*
2. Panicles 1.5-5 cm wide, branches spreading to ascending; spikelets relatively distant ... *E. ciliaris* var. *laxa*

#### Key B

1. Pedicels 1-10 mm long, lax, appressed or divergent; spikelets 0.6-1.4 mm wide ... *E. pilosa*
1. Pedicels 0.2-4 mm long, stiff, straight, usually divergent; spikelets 1.1-4 mm wide [2]
2. Spikelets 6-20 mm long, 2-4 mm wide, with 10-40 florets; lemmas 2-2.8 mm long, with 1-3 crateriform glands along the keels; disarticulation below the florets, the rachillas persistent; anthers yellow ... *E. cilianensis*
2. Spikelets 4-7(11) mm long, 1.1-2.2 mm wide, with 7-12(20) florets; lemmas 1.4-1.8 mm long, rarely with 1 or 2 crateriform glands along the keels; disarticulation below the lemmas, both the paleas and rachillas usually persistent; anthers reddish-brown [3]
3. Leaf blades and pedicels eglandular, below the inflorescence nodes with gland areas even with the rachis, lacking a bulbous margin, often lustrous; anthers 3 ... *E. barrelieri*
3. Leaf blade margins and inflorescence rachis sometimes and pedicels usually glandular, with a bulbous margin, dull; anthers 2 ... *E. minor*

#### Key C

1. Repent stem stoloniferous, erect fertile stems usually <12 cm long ... *E. hypnoides*
1. Stems erect, usually >10 cm long [2]
2. Ligules membranous, without cilia; inflorescence elongate with numerous overlapping appressed to ascending primary branches ... *E. japonica*
2. Ligules membranous and with cilia, these often longer than the ligule blade; inflorescence primary branches mostly ascending to spreading, not densely overlapping [3]
3. Caryopses shallowly to deeply grooved on the adaxial surface ... *E. mexicana* subsp. *virescens*
3. Caryopses without a ventral groove, usually globose [4]
4. Spikelets ovoid, (1.6)2-4 mm wide; florets disarticulating intact from the persistent rachillas ... *E. unioides*
4. Spikelets generally oblong, 0.6-2.5 mm wide; lemmas disarticulating separately from the paleas, sometimes both the paleas and the rachillas persistent [5]

5. Lemmas 1.6-3 mm long; caryopses 0.7-1.3 mm long, obovoid, smooth, light brown to white ...  
E. tef
5. Lemmas 1-2.2 mm long; caryopses 0.3-1.1 mm long, subglobose, pyriform, or obovoid to prism-shaped, smooth or faintly striate, brownish [6]
6. Lemma lateral veins often greenish and apparent; caryopses 0.3-0.6 mm long, ovoid, subglobose to obovoid [7]
6. Lemma lateral veins usually obscure, pale; caryopses 0.5-1.1 mm long, pyriform or obovoid to prism-shaped [8]
7. Inflorescence primary branches 6-10 per culm; spikelets 5-12(18) mm long, with 12-42 florets; lemmas 1.3-2 mm long; anthers 3 ... E. cumingii)
7. Inflorescence primary branches (12)15-20 per culm; spikelets 2-4.6 mm long, with 5-15 florets; lemmas 1-1.3 mm long; anthers 2 ... E. gangetica
8. Proximal nodes of inflorescence with whorl of (2)3-6 branches; spikelets 0.6-1.4 mm wide; lower glumes 0.3-0.6(0.8) mm long, usually <1/2 as long as the lowest lemmas; lemmas with inconspicuous lateral veins ... E. pilosa
8. Proximal nodes of inflorescence with 1-2 branches; spikelets 1.2-2.5 mm wide; lower glumes 0.5-1.5 mm long, at least 1/2 as long as the lowest lemmas; lemmas with evident lateral veins [9]
9. Spikelets mostly uniformly pinkish to purplish red; anthers 0.5-0.7 mm long ... E. tracyi
9. Spikelets mostly pale to dark olive, greenish, sometimes partly reddish; anthers 0.2-0.4 mm long [10]
10. Pedicels along branches spreading to spreading-ascending (at least some) ... E. pectinacea var. miserrima
10. Pedicels along branches appressed to ascending-appressed ... E. pectinacea var. pectinacea

#### Key D

1. Spikelets mostly pale gray to dark gray, margins or some spots sometimes stramineous [2]
1. Spikelets mostly pale greenish, stramineous, to pink, red, or purplish [4]
2. Leaf blades glabrate, hairy around the collar and ligule, otherwise hairs few to none along blade surface and margins; spikelets 0.5-1(1.3) mm wide; flowering Jun-Nov ... E. lugens
2. Leaves pilose, especially the blade surface; spikelets 1-1.8 mm wide; flowering Mar-May [3]
3. Leaf sheaths glabrous or with few hairs along the margins; spikelets 3-7 mm long; lemmas 1.6-2.2 mm long; anthers 0.5-0.8 mm long ... E. intermedia
3. Leaf sheaths pilose; spikelets (2.5)3-5 mm long; lemmas 1.2-1.8 mm long; anthers 0.3-0.5 mm long ... E. polytricha
4. Leaf sheaths densely pilose; spikelets 2-7.5 mm long, florets 2-10(12); anthers 3 [5]
4. Leaf sheaths glabrate; spikelets 4-18(23) mm long, florets 4-22(30); anthers 2 [6]
5. Cespitose; proximal inflorescence nodes glabrate; florets 2-4(6); upper glume 1.5-2.8 mm long ... E. hirsuta
5. Rhizomatous; proximal inflorescence nodes moderately to densely pilose; florets (3)6-10(12); upper glume 1-2(2.3) mm long ... E. spectabilis
6. Pedicels ascending to spreading, occasionally some appressed, longer than the spikelets; disarticulation below the lemmas, the paleas persistent ... E. elliottii
6. Pedicels appressed, shorter than the spikelets (except the terminal spikelet); disarticulation usually in the rachilla beneath the florets ... E. refracta

#### Key E

1. Spikelets 2.4-5 mm wide; glumes 1.7-4 mm long; lemmas 2-6 mm long ... E. secundiflora subsp. oxylepis

1. Spikelets 1-2.4 mm wide; glumes 1-2.2 mm long; lemmas 1.1-2.5 mm long [2]
2. Inflorescence 20-50(60) cm long; spikelets 0.7-1.4 mm wide; anthers 2, 0.2-0.3 mm long; caryopses flattened ventrally ... *E. prolifera*
2. Inflorescence 8-40(45) cm long; spikelets 1.2-2.4 mm wide; anthers 2-3, 0.2-0.9 mm long; caryopses subglobose, terete, grooved, or dorsally compressed [3]
3. Anthers 3, 0.7-1.2 mm long; florets completely disarticulating [4]
3. Anthers 2, 0.2-0.7 mm long; paleas often persistent after disarticulation of the glumes and lemmas [5]
4. Culm nodes mostly dark red to dark purplish black; spikelets with 10-22 florets; caryopses terete to laterally compressed, opaque, uniformly reddish brown ... *E. atrovirens*
4. Culm nodes pale stramineous to pale purplish; spikelets with 3-12(14) florets; caryopses dorsally compressed, translucent, greenish over the embryo; caryopses dorsally compressed, adaxial surfaces with a shallow, broad groove or ungrooved, smooth, mostly translucent, light brown, bases often greenish ... *E. curvula*
5. Inflorescence 1-3.5 cm wide, contracted, condensed into glomerate lobes; primary branches 0.8-3 cm long ... *E. elongata*
5. Inflorescence (1)2-17 cm wide, open to contracted; primary branches 1-15 cm long [6]
6. Culm nodes mostly dark red to dark purplish black; leaf blades (8)12-40 cm long, 2-5 mm wide; inflorescences all exserted, 15-45 cm long; caryopses 0.6-0.8 mm long, striate, obovoid to ellipsoid ... *E. bahiensis*
6. Culm nodes pale stramineous to pale purplish; leaf blades 4-8(18) cm long, 1-2 mm wide; inflorescence 5-15 cm long, often some inflorescences partially to completely enclosed by the subtending sheaths; caryopses 0.5-0.6 mm long, smooth, globose ... *E. scaligera*

\**Eragrostis atrovirens* (Desf.)Trin. ex Steud.— {AFP}

\**Eragrostis bahiensis* Schrad. ex Schult.— {AFP}

\**Eragrostis barrelieri* Daveau— {AFP}

\**Eragrostis cilianensis* (All.)Vignolo ex Janch.— {AFP}

\**Eragrostis ciliaris* (L.)R.Br.— {AFP}

\**Eragrostis cumingii* Steud.— {AFP}

\**Eragrostis curvula* (Schrad.)Nees— {AFP}

*Eragrostis elliotii* S.Watson— {AFP}

\**Eragrostis elongata* (Willd.)Jacq.f.— {AFP}

\**Eragrostis gangetica* (Roxb.)Steud.— {AFP}

*Eragrostis hirsuta* (Michx.)Nees— {AFP}

*Eragrostis hypnoides* (Lam.)Britton et al.— {AFP}

\**Eragrostis intermedia* Hitchc.— {AFP}

\**Eragrostis japonica* (Thunb.)Trin.— {AFP}

\**Eragrostis lugens* Nees— {AFP}

\**Eragrostis mexicana* (Hornem.)Link subsp. *virescens* (J.Presl)S.D.Koch & I.Sánchez— {AFP}

\**Eragrostis minor* Host— {AFP}

*Eragrostis pectinacea* (Michx.)Nees ex Jedwabn. var. *miserrima* (E.Fourn.)Reeder— {AFP}

*Eragrostis pectinacea* (Michx.)Nees ex Jedwabn. var. *pectinacea*— {AFP}

\**Eragrostis pilosa* (L.)P.Beauv.— {AFP}

*Eragrostis polytricha* Nees— {AFP}

\**Eragrostis prolifera* (Sw.)Steud.— {AFP}

*Eragrostis refracta* (Muhl.)Scribn.— {AFP}

\**Eragrostis scaligera* Salzm. ex Steud.— {AFP}

*Eragrostis secundiflora* J.Presl subsp. *oxylepis* (Torr.)S.D.Koch— {AFP}

***Eragrostis spectabilis*** (Pursh) Steud.— {AFP}

\****Eragrostis tenella*** (L.) P. Beauv. ex Roem. & Schult.— {AFP}

***Eragrostis tracyi*** Hitchc.— {AFP} Endemic. State Endangered.

\****Eragrostis unioloides*** (Retz.) Nees ex Steud.— {AFP}

### **Eremochloa** {AFP}

\****Eremochloa ophiuroides*** (Munro) Hack.— {AFP}

### **Eriochloa** {AFP}

1. Internodes pilose to pubescent; inflorescence branches appressed to the main axis; spikelets solitary at the middle of the branches, sometimes in unequally pedicellate pairs near the base ...  
*E. contracta*

1. Internodes glabrous to sparsely pubescent; inflorescence branches spreading to ascending-appressed, at the least basal branches divergent from the main axis; spikelets in unequally pedicellate pairs or triplets at the middle of the branches, sometimes solitary distally [2]

2. Plants annual; upper glumes acute to acuminate, often terminating in awnlike apices up to 1.5 mm long; lower florets without paleas ... *E. acuminata*

2. Plants perennial; upper glumes acute, unawned; lower floret of each spikelet usually with a palea [3]

3. Culms decumbent, rooting at the lower nodes; spikelets 3.2-3.9 mm long, 1.1-1.3 mm wide; lower floret of each spikelet with or without a palea ... *E. polystachya*

3. Culms erect to slightly decumbent, not rooting at the lower nodes; spikelets 3.7-5.7 mm long, 1.3-1.8 mm wide; lower floret of each spikelet always with a palea [4]

4. Lower florets staminate; blades generally flat, usually 8-15 mm wide ... *E. michauxii* var. *michauxii*

4. Lower floret sterile; blades involute to conduplicate, 5-8 mm wide ... *E. michauxii* var. *simpsonii*

\****Eriochloa acuminata*** (J. Presl) Kunth— {AFP}

\****Eriochloa contracta*** Hitchc.— {AFP}

***Eriochloa michauxii*** (Poir.) Hitchc. var. ***simpsonii*** Hitchc.— {AFP} Endemic. Possibly extinct.

***Eriochloa michauxii*** (Poir.) Hitchc. var. ***michauxii***— {AFP}

\****Eriochloa polystachya*** Kunth— {AFP}

### **Eustachys** {AFP}

1. Spikelets 2.4-3.7 mm long [2]

1. Spikelets 1.5-2.5 mm long [4]

2. Inflorescence branches 1-3; spikelets 3-3.7 mm long; lower lemma awn 0.4-0.6 mm long ... *E. floridana*

2. Inflorescence branches (3)4-36; spikelets 2.4-3 mm long; lower lemma awn 0.7-1.2 mm long or only mucronate [3]

3. Inflorescence branches 10-36, lax and curvaceous; keel of lower lemma glabrous ... *E. distichophylla*

3. Inflorescence branches (3)4-9, stiff; keel of lower lemma pubescent ... *E. neglecta*

4. Culms 60-150 cm long; inflorescence branches 8-24; lower lemma veins and keel glabrous or with few hairs ... *E. glauca*

4. Culms 20-80(100) cm long; inflorescence branches (1)4-15; lower lemma veins or keels pubescent [5]

5. Inflorescence branches 8-15; keel of lower lemma glabrous, lateral veins with white hairs 1-2 mm long ... *E. retusa*

5. Inflorescence branches (1)4-11; keel and lateral veins of lower lemma densely pubescent, hairs to 1 mm long [6]

6. Lower lemma pale to reddish brown, lateral vein hairs spreading, white, and 0.5-1 mm long; upper sterile lemma 1.3-1.5 mm long ... *E. caribaea*

6. Lower lemma dark brown to nearly black, lateral veins hairs appressed, brown, and 0.1-0.4 mm long; upper sterile lemma 0.8-1(1.2) mm long ... *E. petraea*

\**Eustachys distichophylla* (Lag.)Nees— {AFP}

*Eustachys floridana* Chapm.— {AFP}

*Eustachys glauca* Chapm.— {AFP}

*Eustachys neglecta* (Nash)Nash— {AFP}

*Eustachys petraea* (Sw.)Desv.— {AFP}

\**Eustachys retusa* (Lag.)Kunth— {AFP}

### **Festuca** {AFP}

1. Perennial; spikelets 4-5(7) mm long, with 2-4 florets; anthers 3 ... *F. subverticillata*

1. Annual (perennial); spikelets 3.5-12 mm long, with 3-11(17) florets; anthers 1(3) [2]

2. Lower glume 0.5-2 mm long, <1/2 the length of the upper glume ... *F. myuros*

2. Lower glume 1.5-5 mm long, >1/2 the length of the upper glume [3]

3. Lemmas 2.5-5 mm long, the apices more pubescent than the bases; caryopses 1.5-2.5 mm long ... *F. sciurea*

3. Lemmas 2.7-9.5 mm long, if pubescent, the apices no more so than the bases but occasionally ciliate; caryopses 1.7-6.5 mm long [4]

4. Inflorescence nodes with 1 branch; spikelets with (1)4-8 florets, the internodes 0.6-1.1 mm long; caryopses 3.5-5 mm long ... *F. bromoides*

4. Inflorescence nodes with 1-2 branches; spikelets with (4)5-11(17) florets, the internodes 0.5-0.7 mm long; caryopses 1.7-3.7 mm long ... *F. octoflora*

\**Festuca bromoides* L.— {AFP}

\**Festuca myuros* L.— {AFP}

*Festuca octoflora* Walter— {AFP}

*Festuca sciurea* Nutt.— {AFP}

*Festuca subverticillata* (Pers.)E.B.Alexeev— {AFP}

### **Glyceria** {AFP}

1. Spikelets (6.5)10-23 mm long, with (5)8-16 florets ... *G. septentrionalis*

1. Spikelets 1.8-4 mm long, with 3-7 florets ... *G. striata*

\**Glyceria septentrionalis* Hitchc.— {AFP}

*Glyceria striata* (Lam.)Hitchc.— {AFP}

### **Gymnopogon** {AFP}

1. Cespitose; spikelets with 1(2) florets, lemma awns (2.4)4-12.2 mm long ... *G. ambiguus*

1. Cespitose or rhizomatous; spikelets with 1-2 florets, lemma awns 0.7-3 mm long [2]

2. Rhizomes elongate; spikelets with 1(2) florets; lower glume 2-3.5 mm long ... *G. brevifolius*

2. Cespitose; spikelets with (1)2-3(4) florets; lower glume (2.5)3-6 mm long ... *G. chapmanianus*

***Gymnopogon ambiguus*** (Michx.)Britton et al.— {AFP}

***Gymnopogon brevifolius*** Trin.— {AFP}

***Gymnopogon chapmanianus*** Hitchc.— {AFP}

**Hackelochloa** {AFP}

\****Hackelochloa granularis*** (L.)Kuntze— {AFP}

**Hemarthria** {AFP}

\****Hemarthria altissima*** (Poir.)Stapf & C.E.Hubb.— {AFP}

**Heteropogon** {AFP}

1. Perennial; glumes eglandular, glabrous or hirsute ... *H. contortus*

1. Annual; glumes with glandular pits, glabrous ... *H. melanocarpus*

\****Heteropogon contortus*** (L.)P.Beauv. ex Roem. & Schult.— {AFP}

\****Heteropogon melanocarpus*** (Elliott)Elliott ex Benth.— {AFP}

**Hordeum** {AFP}

1. Leaf sheath without auricles; lateral spikelets sterile and pedicellate, sometimes with awns to 1.8 mm long ... *H. pusillum*

1. Leaf sheath auricles to 6 mm long; lateral spikelets usually sessile and fertile and with awns to 18 cm long, sometimes pedicellate and sterile and awnless ... *H. vulgare*

***Hordeum pusillum*** Nutt.— {AFP} Possibly was variously domesticated in the USA outside of Florida ([Graham et al. 2017](#)).

\****Hordeum vulgare*** L.— {AFP}

**Hymenachne** {AFP}

1. Ligules 1-2.5 mm long; leaf blades (9)12-28 mm wide, the base cordate and much wider than the culm; spikelets 3.5-5 mm long, the apex filiform-acuminate ... *H. amplexicaulis*

1. Ligules 0.3-0.7 mm long; leaf blades 5-15 mm wide, the base usually truncate to cuneate and not much wider than the culm; spikelets 2-2.8 mm long, acute ... *H. hemitomon*

\****Hymenachne amplexicaulis*** (Rudge)Nees— {AFP}

***Hymenachne hemitomon*** (Schult.)C.C.Hsu— {AFP}

**Hyparrhenia** {AFP}

1. Spikelet hairs whitish ... *H. hirta*

1. Spikelet hairs reddish ... *H. rufa*

\****Hyparrhenia hirta*** (L.)Stapf— {AFP}

\****Hyparrhenia rufa*** (Nees)Stapf— {AFP}

**Imperata** {AFP}

1. Major secondary veins of leaf blades typically whitish and distinctly discolored from rest of blade; flowering after fire or cutting of shoots; upper hyaline lemmas 0-2.5 mm long; stamens 1 per floret, filaments dilated at base, anthers 1.4-2.8(3.2) mm long ... *I. brasiliensis*

1. Major secondary veins of leaf blades light green, scarcely discolored from rest of blade, or whitish and discolored; flowering year-round; upper hyaline lemmas (0.7)1.3-2.3(3.4) mm long; stamens 2 per floret, filaments not dilated at base, anthers (2.2)2.5-4.2 mm long ... *I. cylindrica*

***Imperata brasiliensis*** Trin.— {AFP} Levy & Marion cos. south to Miami-Dade. The native ilk (as *I. brasiliensis* here) flowers only when cut or burned and has been misapplied to various northern and panhandle populations. Earliest collections by Chapman (FLAS, NY).

\****Imperata cylindrica*** (L.)P.Beauv.— {AFP} Cultivated in Florida in 1937, and was naturalized by the 1950s in Hernando and Walton counties. Analyses by Burrell et al. (2015) suggest that one clonal lineage (CL2, possibly from the Philippines) is predominant in Florida (probably the robust one with larger anthers), with another (CL1, possibly from southern Japan) present in the panhandle (probably with smaller anthers).

### **Kellochloa** {AFP}

1. Leaf blades 2-4 mm wide; spikelets 3-4 mm long, ca. 1.5 mm wide; upper glume and lower lemma tuberculate-hispid ... *K. brachyantha*

1. Leaf blades 3-10 mm wide; spikelets 1.5-2.2 mm long, ca. 1 mm wide; upper glume and lower lemma verrucose ... *K. verrucosa*

\****Kellochloa brachyantha*** (Steud.)Lizarazu et al.— {AFP}

***Kellochloa verrucosa*** (Muhl.)Lizarazu et al.— {AFP}

### **Koeleria** {AFP}

\****Koeleria gerardi*** (Vill.)Shinners— {AFP}

### **Lagurus** {AFP}

\****Lagurus ovatus*** L.— {AFP}

### **Lasiacis** {AFP}

1. Leaves glabrous to glabrate or sparsely ciliate, the blades linear-lanceolate to narrowly lanceolate, (3)5-12(30) mm wide; fertile florets whitish to light brown at maturity ... *L. divaricata*

1. Leaves often pubescent, the blades ovate to broadly lanceolate,(8)15-30(56) mm wide; fertile florets dark brown to nearly black at maturity ... *L. ruscifolia*

***Lasiacis divaricata*** (L.)Hitchc.— {AFP}

\****Lasiacis ruscifolia*** (Kunth)Hitchc.— {AFP}

### **Leersia** {AFP}

1. Cespitose; spikelets 1.5-2 mm long, glabrous ... *L. monandra*

1. Rhizomatous; spikelets 2.5-6.5 mm long, the margins usually ciliate [2]

2. Spikelets 2.7-3.5(4) mm wide ... *L. lenticularis*

2. Spikelets 0.5-2 mm wide [3]

3. Rhizome scales imbricate; inflorescence branches solitary at nodes; spikelets 2.4-3.3(3.6) mm long; anthers 2 ... *L. virginica*



3. Rhizome scales lacking or not imbricate; inflorescence branches 2-4 at the proximal nodes; spikelets 3.2-6.5 mm long; anthers 3 or 6 [4]
4. Inflorescence exserted, 5-15 cm long, branches appressed to ascending, spikelet-bearing to near the base; spikelets 3.2-4.7(5) mm long; anthers 6 ... L. hexandra
4. Inflorescence exserted or enclosed partly by the leaf sheath, 10-30 cm long, branches spreading when exserted, naked on the lower 1/3; spikelets (4)4.2-6.5 mm long; anthers 3 ... L. oryzoides

***Leersia hexandra*** Sw.— {AFP}

***Leersia lenticularis*** Michx.— {AFP}

***Leersia monandra*** Sw.— {AFP}

***Leersia oryzoides*** (L.)Sw.— {AFP}

***Leersia virginica*** Willd.— {AFP}

**Leptochloa** {AFP}

***Leptochloa virgata*** (L.)P.Beauv.— {AFP}

**Limnodea** {AFP}

***Limnodea arkansana*** (Nutt.)L.H.Dewey— {AFP}

**Lithachne** {AFP}

**\**Lithachne pauciflora*** (Sw.)P.Beauv.— {AFP}

**Lolium** {AFP}

1. Inflorescence paniculiform [2]

1. Inflorescence spiciform [3]

2. Leaf sheath auricles ciliate (at least 1 or 2 hairs); inflorescence branches usually 2 at the proximal node, the shorter with 1-13 spikelets, the longer with 3-19 spikelets; lemmas usually scabrous or hispidulous, unawned or with an awn up to 4 mm long ... L. arundinaceum

2. Leaf sheath auricles glabrous; inflorescence branches 1-2 at the proximal node, if 2 the shorter with 1-2(3) spikelets, the longer with 2-6(9) spikelets; lemmas usually smooth, sometimes slightly scabrous, unawned or with a mucro to 0.2 mm long ... L. pratense

3. Spikelets with 10-22 florets; lemma awns absent or to 8 mm long ... L. multiflorum

3. Spikelets with 2-10(11) florets; lemmas awns to 23 mm long, occasionally absent [4]

4. Perennial; second glume usually shorter than the floret; lemma 0.8-2 mm wide; caryopses 0.7-1.5 mm wide, 3-4.5 times longer than wide ... L. perenne

4. Annual; second glume subequal to longer than the floret; lemma 1.2-3 mm wide; caryopses 1-3 mm wide, 2-3 times longer than wide ... L. temulentum

**\**Lolium arundinaceum*** (Schreb.)Darbysh.— {AFP}

**\**Lolium perenne*** L.— {AFP}

**\**Lolium temulentum*** L.— {AFP}

**Luziola** {AFP}

1. Culm weak, prostrate or immersed; leaf blades floating or immersed, 1.5-5(8) cm long, the tip rounded to subacute; inflorescences 0.5-2 cm long, 2-5 spikelets, the pistillate one nearly concealed with only the stigma exserted ... L. fluitans

1. Culm stiff, erect; leaf blades emergent or immersed, 3-30(39) cm long, the tip long-acute to attenuate; inflorescences 1-12 cm long, 8-50 spikelets, mostly exserted [2]
2. Culm robust 3-10 mm wide; ligules 10-40 mm long; leaf blades 7-20 mm wide ... *L. subintegra*
2. Culm slender, 0.5-2 mm wide; ligules 2-6 mm long; leaf blades 0.5-6 mm wide [3]
3. Pistillate spikelet 3-5 mm long; fruit striate ... *L. bahiensis*
3. Pistillate spikelet 2-2.5 mm long; fruit smooth ... *L. peruviana*

***Luziola bahiensis*** (Steud.) Hitchc.— {AFP}

***Luziola fluitans*** (Michx.) Terrell & H. Rob.— {AFP}

\****Luziola peruviana*** J.F. Gmel.— {AFP}

\****Luziola subintegra*** Swallen— {AFP}

**Melica** {AFP}

***Melica mutica*** Walter— {AFP}

**Melinis** {AFP}

1. Sheaths and blades densely pilose, sticky, aromatic; spikelets 1.7-2.4 mm long, glabrate, lemmas often awned; glumes and pedicels glabrous, scabridulous; lower florets without paleas ... *M. minutiflora*
1. Sheaths glabrate to moderately pilose, not noticeably sticky nor aromatic; spikelets 2-5.7 mm long, copiously hairy (glumes and usually pedicels), with hairs to 7 mm long, glumes or lemmas often awned; lower florets with paleas ... *M. repens*

\****Melinis minutiflora*** P. Beauv.— {AFP}

\****Melinis repens*** (Willd.) Zizka— {AFP}

**Microstegium** {AFP}

\****Microstegium vimineum*** (Trin.) A. Camus— {AFP}

**Miscanthus** {AFP}

\****Miscanthus sinensis*** Andersson— {AFP}

**Muhlenbergia** {AFP}

1. Culms 1-3 m tall, 3-6 mm wide, woody; cauline leaf blades (esp. proximal ones) absent or vestigial ... *M. dumosa*
1. Culms 0.1-1.4(1.6) m tall, 0.5-2 mm wide, not woody; cauline leaf blades present [2]
2. Culms 0.1-0.5(0.7) m tall, decumbent, sometimes rooting at nodes; leaf blades (1)3-5(10) cm long; inflorescence 1-1.6 cm wide ... *M. schreberi*
2. Culms 0.6-1.4(1.6) m tall, erect; leaf blades 10-100 cm long; inflorescence 5-30(41) cm wide [3]
3. Leaf blades involute, 35-100 cm long; upper glume with awns 2-25 mm long; lemma apex with 2 setaceous teeth 1-5 mm long; lemma awns 8-35 mm long ... *M. capillaris* var. *filipes*
3. Leaf blades flat or involute, 10-50(80) cm long; upper glume unawned or with awns to 5 mm long; lemma apex without setaceous teeth or the teeth no more than 1 mm long; lemma awns 2-13(18) mm long or absent [4]
4. Glumes less than 1/2 as long as the lemmas; lemmas with awns to 2-13(18) mm long ... *M. capillaris* var. *capillaris*

4. Glumes more than 1/2 as long as the lemmas; lemmas usually unawned, or with awns <3 mm long ... *M. capillaris* var. *trichopodes*

***Muhlenbergia capillaris*** (Lam.)Trin. var. ***capillaris***— {AFP}

***Muhlenbergia capillaris*** (Lam.)Trin. var. ***filipes*** (M.A.Curtis)Chapm. ex Beal— {AFP}

***Muhlenbergia capillaris*** (Lam.)Trin. var. ***trichopodes*** (Elliott)Vasey— {AFP}

^ *Muhlenbergia dumosa* Scribn. ex Vasey—

***Muhlenbergia schreberi*** J.F.Gmel.— {AFP}

### **Neyraudia** {AFP}

\****Neyraudia reynaudiana*** (Kunth)Keng ex Hitchc.— {AFP} The blade not channeled much at all, and auriculate-clasping half of the stem help to distinguish this from other tall grasses.

### **Oplismenus** {AFP}

1. Leaf blades generally more ovate-lanceolate; awns slender, whitish, and minutely antrorsely scabrous; stigma pale, whitish, inconspicuous ... *O. burmannii*

1. Leaf blades generally more lanceolate to linear-lanceolate; awns thicker, reddish, scabrous; stigma red, conspciuous [2]

2. Larger leaf blades >6 cm long; fertile part of inflorescence usually >7 cm long ... *O. hirtellus*

2. Larger leaf blades <5.5 cm long; fertile part of inflorescence <7 cm long ... *O. setarius*

\****Oplismenus burmannii*** (Retz.)P.Beauv.— {AFP}

\****Oplismenus hirtellus*** (L.)P.Beauv.— {AFP}

***Oplismenus setarius*** (Lam.)Roem. & Schult.— {AFP}

### **Oryza** {AFP}

1. Rhizomes sometimes present; leaf sheath auricles absent or to 15 mm long; spikelets deciduous; lemmas awned, awns 4-11(16) cm long; anthers 3.5-7.4 mm long ... *O. rufipogon*

1. Rhizomes absent; leaf sheath auricles absent or to 5 mm long; spikelets persistent; lemmas usually unawned or awns to 6(15) cm long; anthers 1-2.5 mm long ... *O. sativa*

\****Oryza rufipogon*** Griff.— {AFP}

^ *Oryza sativa* L.—

### **Panicum** {AFP}

1. Spikelet 2.5-7.5 mm long; lower glume 1.8-4 mm long [2]

1. Spikelet 1.8-4.1 mm long; lower glume 0.4-1.8 mm long [4]

2. Annual; nodes puberulent; leaf sheath pilose with some papillose-based hairs; leaf blade upper surface pubescent ... *P. miliaceum*

2. Rhizomatous perennial; nodes glabrous; leaf sheath glabrous to pilose; leaf blade upper surface glabrous or with few trichomes at the base [3]

3. Plant glabrous throughout; panicle narrow and compact, the branches ascending to appressed; coastal, saline-influenced sites ... *P. amarum*)

3. Plant usually at least pilose basally on upper surface of leaf blades; panicle open and diffuse, the branches ascending to spreading; habitats various ... *P. virgatum*

4. Rhizomatous perennial; lower floret staminate ... *P. repens*

4. Annual or perennial without rhizomes, sometimes rooting at basal nodes; lower floret sterile [5]

- 5. Nodes glabrous; lower glume 0.4-0.8 mm long; ligule of dense bristly to 2 mm long [6]
- 5. Nodes pilose; lower glume 0.8-2 mm long [7]
- 6. Leaf sheath and upper blade surface pilose with papillose-based hairs ... *P. dichotomiflorum* var. *bartowense*
- 6. Leaf sheath and upper blade surface glabrous to pilose, not papillose-based ... *P. dichotomiflorum* var. *dichotomiflorum*
- 7. Panicle 3.8-31 cm wide, <2 times longer than wide ... *P. capillare*
- 7. Panicle 1.4-5.1 cm wide, 2-3 times longer than wide ... *P. flexile*

***Panicum amarum*** Elliott— {AFP}

***Panicum capillare*** L.— {AFP}

***Panicum dichotomiflorum*** Michx. var. ***bartowense*** (Scribn. & Merr.)Fernald— {AFP}

***Panicum dichotomiflorum*** Michx. var. ***dichotomiflorum***— {AFP}

***Panicum flexile*** (Gatt.)Scribn.— {AFP}

\****Panicum miliaceum*** L.— {AFP}

\****Panicum repens*** L.— {AFP}

***Panicum virgatum*** L.— {AFP}

### **Paspalidium** {AFP}

- 1. Cespitose; inflorescence branch terminating in a bristle 3-6 mm long (subtending the terminal spikelet); spikelets 1.8-2.2 mm long ... *P. chapmanii*
- 1. Rhizomatous; inflorescence branch terminating in a short point lacking a bristle; spikelets 2.2-3.2 mm long ... *P. geminatum*

***Paspalidium chapmanii*** (Vasey)Davidse & R.W.Pohl— {AFP} State Endangered.

***Paspalidium geminatum*** (Forssk.)Stapf— {AFP}

### **Paspalum** {AFP}

- 1. Spikelets solitary (1 pedicel) ... Key A
- 1. Spikelets paired (both fertile), or sometimes 1 fertile spikelet paired with a naked pedicel or a sterile spikelet [2]
- 2. Spikelets glabrous (generally green, greenish, to stramineous, or glaucous and spikelet pairs not overlapping on a narrow rachis) ... Key B
- 2. Spikelets pubescent, or glabrous and distinctly brown, olive to dark brown (at least partly so on some spikelets), or glabrous and glaucous (with a rachis >0.8 mm wide and overlapping spikelet pairs) ... Key C

#### Key A

- 1. Inflorescence branches not paired at the terminus, of 1-70 racemosely arranged branches [2]
- 1. Inflorescence with a pair of branches at the tip arising from the same point or nearly so (sometimes the branches separated by 1 cm), occasionally with 1(-5) branches below [5]
- 2. Inflorescence axis 0.6-1.3 mm wide, not winged or scarcely so, the spikelets exposed ... *P. laeve*
- 2. Inflorescence axis (including wings) 1-4 mm wide, winged and mostly or wholly concealing or hooded over the spikelets [2]
- 3. Branches 7-70, disarticulating at maturity, the axes extending beyond the distal spikelets; spikelets 1-1.9 mm long ... *P. repens*
- 3. Branches (1)2-6, persistent, terminating in a spikelet [4]

- 4. Spikelets 3.2-4 mm long; upper lemmas with a few short hairs at the apex ... *P. acuminatum*
- 4. Spikelets 1.7-2.1 mm long; upper lemmas glabrous ... *P. dissectum*
- 5. Spikelets 3.8-5.2 mm long; lower and upper glume absent; upper lemma and palea membranous, not inrolled; stamens 1-2 ... *P. eglume*
- 5. Spikelets 1.3-4.5 mm long; lower glume usually absent, upper glume present; upper lemma and palea coriaceous-indurate, the lemma margins usually inrolled; stamens 3 [6]
- 6. Upper glume pubescent (lower glume usually absent or to 1 mm long) [7]
- 6. Upper glume glabrous (lower glume usually absent or to 1 mm long) [8]
- 7. Spikelets 1.3-1.9 mm long; upper glumes pilose along the margins ... *P. conjugatum*
- 7. Spikelets 2.4-3.2 mm long; upper glumes sparsely short pubescent on the abaxial surface ... *P. distichum*
- 8. Spikelets 1.9-2.3 mm long ... *P. minus*
- 8. Spikelets 2.5-4.5 mm long [9]
- 9. Ligules 1-2 mm long; spikelets 3-4.5 mm long, 1.1-2 mm wide; upper glume and lower lemma 3-veined; of coastal habitats ... *P. vaginatum*
- 9. Ligules 0.2-0.5 mm long; spikelets 2.5-4 mm long, 2-2.8 mm wide; upper glume and lower lemma 5-veined; widely distributed [10]
- 10. Leaf blades flat, (2)4-10 mm wide; spikelet 3.2-4 mm long, (2)2.4-2.8 mm wide ... *P. notatum* var. *notatum*
- 10. Leaf blades folded, 2-4 mm wide; spikelet 2.5-3.2 mm long, 2-2.2 mm wide ... *P. notatum* var. *saurae*

#### Key B

- 1. Leaf blades usually involute, 0.2-2(2.8) mm wide; inflorescence branches 1(3), 5-23 cm long ... *P. monostachyum*
- 1. Leaf blades flat or folded, 1.9-18 mm wide; inflorescence branches (1)2-15(28), 0.8-18 cm long [2]
- 2. Inflorescence branches 8-25; glumes absent; lower lemma ribbed over the veins ... *P. malacophyllum*
- 2. Inflorescence branches (1)2-15(28); upper glume present (lower glume usually absent); lower lemma not ribbed over the veins [3]
- 3. Ligules 0.2-0.5 mm long; spikelets 1.3-2.6 mm long [4]
- 3. Ligules 1-4 mm long; spikelets 2-4.1 mm long [5]
- 4. Inflorescence terminal; spikelets 1.3-2 mm long; upper glumes and lower lemmas 5-veined ... *P. caespitosum*
- 4. Inflorescence both terminal and axillary, the axillary ones partially or completely enclosed by the subtending leaf sheath; spikelets 1.4-2.6 mm long; upper glumes and lower lemmas 3-veined ... *P. setaceum*
- 5. Plant often glaucous; inflorescence branch axis 0.2-0.8 mm wide; spikelet pairs distant, not overlapping; lower glume often present, 0.1-0.3 mm long ... *P. bifidum*
- 5. Plant not glaucous, or sparingly so; inflorescence branch axis 0.3-2 mm wide, sometimes winged; spikelet pairs overlapping adjacent ones; lower glume absent (rarely present) [6]
- 6. Inflorescence branches (0.8)2-8(10) cm long; upper glume 3-veined [7]
- 6. Inflorescence branches 4-19 cm long; upper glume 5-veined [8]
- 7. Plants shortly rhizomatous; leaf blades conduplicate to flat; spikelets 2-2.8 mm wide ... *P. praecox*
- 7. Plants decumbent, rooting at the lower nodes, not rhizomatous; leaf blades flat; spikelets 1.5-2 mm wide ... *P. pubiflorum*
- 8. Inflorescence branches 3-25; spikelets 2.2-2.5 mm long, 1-1.3 mm wide ... *P. arundinaceum*

8. Inflorescence branches (1)3-6; spikelets turgid, 2.9-4.1 mm long, 1.9-3.1 mm wide ... *P. floridanum*

#### Key C

1. Upper glumes and lower lemma margins lacerate-winged ... *P. fimbriatum*

1. Upper glumes and lower lemma margins not winged [2]

2. Spikelets 1-1.3 mm long [3]

2. Spikelets 1.3-4.1 mm long [4]

3. Inflorescence branches 2-6; spikelets appressed to the branch axes, 0.7-0.9 mm wide, stipitate-glandular ... *P. blodgettii*

3. Inflorescence branches 18-50; spikelets diverging from the branch axes, 0.9-1.1 mm wide, pubescent ... *P. paniculatum*

4. Upper glume and lower lemma margins pilose, the hairs 0.5-1 mm long [5]

4. Upper glume and lower lemma margins glabrous to short-pubescent, the hairs [6]

5. Inflorescence branches 2-7; spikelets 2.3-4 mm long, 1.7-2.5 mm wide; upper glume and lower lemma 5- or 7-veined ... *P. dilatatum*

5. Inflorescence branches (4)10-20(30); spikelets 1.8-2.8 mm long, 1.1-1.5 mm wide; upper glume and lower lemma 3-veined ... *P. urvillei*

6. Spikelets distinctly brown, olive to dark brown (at least partly so on some spikelets), or glaucous [7]

6. Spikelets green, greenish, to stramineous, generally not glaucous [11]

7. Annual; inflorescence branch axis 0.7-2.3 mm wide and broadly winged, the wings about as wide as or wider than the central vein; spikelets 2-2.2 mm long, glabrous or sparingly pubescent towards the base ... *P. boschianum*

7. Perennial; inflorescence branch axis 0.5-1.7 mm wide, narrowly winged, the wings narrower than the central vein; spikelets 2-3.2 mm long, pubescent, sometimes glabrous [8]

8. Inflorescence branches 10-20, the branch axis 1-1.7 mm wide; spikelets 1.8-2.4 mm wide ... *P. virgatum*

8. Inflorescence branches 2-13, the branch axis 0.5-1(1.2) mm wide; spikelets 1.1-2.2 mm wide [9]

9. Leaf blades 7-18 mm wide; spikelets 1.1-1.8 mm wide ... *P. conspersum*

9. Leaf blades 2.5-5 mm wide; spikelets 1.4-2.2 mm wide [10]

10. Rhizomes 5-25 cm long; spikelets 2.3-2.7 mm long, 1.4-1.8 mm wide ... *P. nicorae*

10. Rhizomes <5 cm long, often indistinct; spikelets 2.5-3 mm long, 1.5-2.2 mm wide ... *P. plicatulum*

11. Inflorescence branches (6)15-44 [12]

11. Inflorescence branches 1-7(10) [13]

12. Inflorescence branches spreading to reflexed (rarely ascending), the branch axis 0.3-0.4 mm wide; leaf blades 10-23 mm wide ... *P. coryphaeum*

12. Inflorescence branches erect to ascending, the branch axis 0.5-0.6 mm wide; leaf blades 4.9-6.1 mm wide ... *P. quadrifarium*

13. Lower glume present, 0.2-0.5(1.8) mm long ... *P. botterii*

13. Lower glume absent [14]

14. Ligules 0.2-0.5 mm long; inflorescence both terminal and axillary, the axillary ones partially or completely enclosed by the subtending leaf sheath; spikelets 1.4-2.6 mm long ... *P. setaceum*

14. Ligules 0.2-3.2 mm long; inflorescence terminal; spikelets 1.3-3.6 mm long [15]

15. Spikelets 2.8-3.6 mm long ... *P. pubiflorum*

15. Spikelets 1.3-2.2 mm long [16]

16. Culms 20-60 cm tall; ligules 0.2-0.4 mm long; leaf blades flat; spikelets 1.3-2 mm long, 0.7-1 mm wide ... *P. caespitosum*

16. Culms 80-110 cm tall; ligules 1-2.9 mm long; leaf blades mostly involute; spikelets 1.6-2.2 mm long, 1.1-1.3 mm wide ... *P. laxum*

Key D: *P. setaceum* varieties

1. Leaf blade surfaces glabrous to glabrate, sometimes ciliate on the margins; lower lemmas usually without a conspicuous midvein (sometimes conspicuous in var. *rigidifolium*) [2]

1. Leaf blade surfaces and margins hirsute or ciliate [5]

2. Leaf blades 2.4-6.1 mm wide, stiff; spikelets 2-2.6 mm long ... *P. setaceum* var. *rigidifolium*

2. Leaf blades 3-18 mm wide, lax to somewhat stiff (if somewhat stiff, >6 mm wide); spikelets 1.4-2.4 mm long [3]

3. Leaves mostly basal, the blades recurved, yellowish-green; spikelets 1.4-1.8 mm long, usually glabrous, sometimes stipitate-glandular ... *P. setaceum* var. *longepedunculatum*

3. Leaves basal and cauline, the blades straight, yellowish green, dark green, to purplish; spikelets 1.7-2.4 mm long, pubescent, occasionally glabrous [4]

4. Leaf blades dark green to purplish; lower lemma with conspicuous midveins ... *P. setaceum* var. *ciliatifolium*

4. Leaf blades yellowish-green to dark green; lower lemmas without evident midveins ... *P. setaceum* var. *stramineum*

5. Plants widely spreading to prostrate ... *P. setaceum* var. *supinum*

5. Plants erect to spreading [6]

6. Spikelets 1.8-2.5 mm long, usually glabrous, light green to green; lower lemma usually with conspicuous midveins ... *P. setaceum* var. *muhlenbergii*

6. Spikelets 1.4-2.4 mm long, usually pubescent, pale yellow to light green or purple-spotted; lower lemma usually without conspicuous midveins [7]

7. Leaves mostly basal, the blades grayish green, hirsute; spikelets often purple-spotted ... *P. setaceum* var. *villosissimum*

7. Leaves basal and cauline, the blades yellowish green, dark green, or grayish green, glabrate to hirsute; spikelets not purple-spotted [8]

8. Leaves grayish green, the blades 1.5-7 mm wide, hirsute ... *P. setaceum* var. *setaceum*

8. Leaves yellowish green to dark green, the blades 3.3-13.5 mm wide, glabrate to hirsute ... *P. setaceum* var. *stramineum*

\**Paspalum acuminatum* Raddi— {AFP}

\**Paspalum arundinaceum* Poir.— {AFP}

*Paspalum bifidum* (Bertol.)Nash— {AFP}

*Paspalum blodgettii* Chapm.— {AFP}

*Paspalum boscianum* Flüggé— {AFP}

*Paspalum botterii* (E.Fourn.)Chase— {AFP}

*Paspalum caespitosum* Flüggé— {AFP}

*Paspalum conjugatum* P.J.Bergius— {AFP}

\**Paspalum coryphaeum* Trin.— {AFP}

\**Paspalum dilatatum* Poir.— {AFP}

*Paspalum dissectum* (L.)L.— {AFP}

*Paspalum distichum* L.— {AFP}

*Paspalum eglume* Morrone & Zuloaga— {AFP}

\**Paspalum fimbriatum* Kunth— {AFP}

*Paspalum floridanum* Michx.— {AFP}

*Paspalum laeve* Michx.— {AFP}  
*Paspalum laxum* Lam.— {AFP}  
 \**Paspalum malacophyllum* Trin.— {AFP}  
 \**Paspalum minus* E.Fourn.— {AFP}  
*Paspalum monostachyum* Vasey ex Chapm.— {AFP}  
 \**Paspalum nicorae* Parodi— {AFP}  
 \**Paspalum notatum* Flüggé var. *notatum*— {AFP}  
 \**Paspalum notatum* Flüggé var. *saurae* Parodi— {AFP}  
 \**Paspalum paniculatum* L.— {AFP}  
*Paspalum plicatulum* Michx.— {AFP}  
*Paspalum praecox* Walter— {AFP}  
*Paspalum pubiflorum* Rupr. ex E.Fourn.— {AFP}  
*Paspalum repens* P.J.Bergius— {AFP}  
*Paspalum setaceum* Michx. var. *longepedunculatum* (Leconte)Alph.Wood—  
*Paspalum setaceum* Michx. var. *muhlenbergii* (Nash)D.J. Banks — {AFP}  
*Paspalum setaceum* Michx. var. *rigidifolium* (Nash)D.J. Banks—  
*Paspalum setaceum* Michx. var. *setaceum*— {AFP}  
*Paspalum setaceum* Michx. var. *stramineum* (Nash)D.J. Banks—  
*Paspalum setaceum* Michx. var. *supinum* (Bosc ex Poir.)Trin.—  
*Paspalum setaceum* Michx. var. *villosissimum* (Nash)D.J. Banks—  
 \**Paspalum urvillei* Steud.— {AFP}  
*Paspalum vaginatum* Sw.— {AFP}  
 \**Paspalum virgatum* L.— {AFP}

## Phalaris {AFP}

1. Glume keel wings irregularly dentate or crenate to occasionally entire, varying within a panicle; sterile florets 1, 0.7-1.8 mm long, glabrous or glabrate ... *P. minor*
1. Glume keel wings smooth; sterile florets 2, 0.5-1.5 mm long, sparsely hairy (at least distally) [2]
2. Panicles cylindrical, sometimes lobed, 0.6-1.5 cm wide; glumes 2-6 mm long, 0.6-1.1 mm wide; fertile florets 2-3.8 mm long; anthers 0.5-1.3 mm long ... *P. angusta*
2. Panicles usually ovoid to ellipsoid or oblong-ovoid, occasionally cylindrical, not lobed, 0.8-2 cm wide; glumes 3.8-10 mm long, 0.8-1.5 mm wide; fertile florets 2.9-6.8 mm long; anthers 1.5-4 mm long [3]
3. Glumes 7-10 mm long, 2-2.5 mm wide; fertile florets 4.5-6.8 mm long; anthers 2-4 mm long ... *P. canariensis*
3. Glumes 3.8-6(8) mm long, 0.8-1.5 mm wide; fertile florets 2.9-4.7 mm long; anthers 1.5-2 mm long ... *P. caroliniana*

\**Phalaris angusta* Nees ex Trin.— {AFP}

\**Phalaris canariensis* L.— {AFP}

*Phalaris caroliniana* Walter— {AFP} Possibly was domesticated in the Eastern Agricultural Complex north of Florida (Fritz in Minnis 2014).

\**Phalaris minor* Retz.— {AFP}

## Phanopyrum {AFP}

*Phanopyrum gymnocarpon* (Elliott)Nash— {AFP}



## Pharus {AFP}

*Pharus lappulaceus* Aubl.— {AFP} State Endangered.

## Phleum {AFP}

\**Phleum pratense* L.— {AFP}

## Phragmites {AFP}

1. Culm dull, ribbed or longitudinally grooved; inflorescence erect with ascending branches ... P. australis

1. Culm lustrous, smooth to faintly grooved; inflorescence lax, branches drooping ... P. berlandieri

\**Phragmites australis* (Cav.)Trin. ex Steud.— {AFP}

*Phragmites berlandieri* E.Fourn.— {AFP}

## Phyllostachys {AFP}

1. Rhizome internodes with ring of air canals; culm sheaths red-brown, sometimes tinged with green, unmarked or densely extremely minutely and imperceptibly dark brown spotted, spots aggregating into a distal dark brown patch; culm intranode ca. 5 mm; culm internodes green or gradually developing purple-brown to black spots or turning uniform purple-brown or black; leaf blade erect or gradually deflexed, imbricate at shoot apex; flowering branchlets shortly spicate ... P. nigra

1. Rhizome internodes without air canals; culm sheaths yellow-green, yellow-brown, pale red-brown, brown-purple, dark green, or becoming straw-colored, sometimes striped with purple, with variably sized dark brown spots, proximally sometimes sparser and smaller; culm intranode ca. 3 mm; culm internodes green to yellow, glaucous, or purple; leaf blade usually horizontal or reflexed, rarely erect; flowering branchlets spicate [2]

2. Culm sheath oral setae present, auricles small; culm sheaths densely brown-hairy; culm internodes green to glaucous or purple ... P. edulis

2. Culm sheath auricles and oral setae absent; culm sheaths fringed with white hairs at base, otherwise glabrous; culm internodes green to yellow [3]

3. Culm internodes strongly shortened and ventricose at culm base, inflated below nodes at mid-culm; culm sheath ligule short, 1–2 mm ... P. aurea

3. Culm internodes normal; culm sheath ligule long, 3-5 mm long ... P. meyeri

^ *Phyllostachys aurea* Carrière ex Rivière & C.Rivière— {AFP}

^ *Phyllostachys meyeri* McClure— {AFP}

^ *Phyllostachys nigra* (Lodd. ex Lindl.)Munro—

## Piptochaetium {AFP}

1. Glumes 9-15 mm long; florets 7-13 mm long, callus 2-3 mm long; awns 40-75 mm long; anthers 0.3-0.5 or 3-4 mm long ... P. avenaceum

1. Glumes 15-22 mm long; florets 13.5-22 mm long, callus 3.5-8 mm long; awns 62-120 mm long; anthers 4-7 mm long ... P. avenacioides

*Piptochaetium avenaceum* (L.)Parodi— {AFP}

*Piptochaetium avenacioides* (Nash)Valencia & Costas— {AFP} Endemic.

## Pleioblastus {AFP}

^ *Pleioblastus pygmaeus* (Miq.) Nakai— {AFP}

## Poa {AFP}

1. Annual, 2-30(45) cm long; leaf blades 2-10 cm long, 1-3(6) mm wide; inflorescence 1-10 cm long; spikelets 2-5 mm long; anthers 0.6-1.1 mm long [2]
1. Perennial, 5-120 cm long; leaf blades 1.5-25 cm long, 0.5-5 mm wide; inflorescence 2-20 cm long; spikelets 3-8.2 mm long, the calluses subtending the lemmas glabrous to densely villous; anthers 1-2.7 mm long [3]
2. Calluses subtending the lemmas glabrous; anthers 3, 0.6-1.1 mm long ... *P. annua*
2. Calluses subtending the lemmas villous; anthers 1, 0.1-0.3 mm long ... *P. chapmaniana*
3. Rhizomatous [4]
3. Cespitose [5]
4. Dioecious; calluses subtending the lemmas glabrate (staminate plants) or villous (pistillate plants); anthers 1.6-2.7 mm long (or vestigial) ... *P. arachnifera*
4. Monoecious; calluses subtending the lemmas villous; anthers 1-2 mm long ... *P. pratensis*
5. Inflorescence nodes mostly with 1-2(4) branches; spikelets (3)5-8 mm long; calluses subtending the lemmas glabrous (rarely sparsely, short-villous) ... *P. autumnalis*
5. Inflorescence nodes mostly with (2)3-10 branches; spikelets 2.5-4.4 mm long, calluses subtending the lemmas villous ... *P. sylvestris*

\**Poa annua* L.— {AFP}

\**Poa arachnifera* Torr.— {AFP}

*Poa autumnalis* Muhl. ex Elliott— {AFP}

*Poa chapmaniana* Scribn.— {AFP}

\**Poa pratensis* L.— {AFP}

*Poa sylvestris* A.Gray— {AFP}

## Polypogon {AFP}

1. Glumes hispidulous proximally, deeply lobed, lobes 0.3-1.2 mm long; lemmas unawned or awns <1 mm long ... *P. maritimus*
1. Glumes hispidulous throughout, shallowly lobed, lobes 0.1-0.2 mm long; lemmas awns 0.5-1(4.5) mm long ... *P. monspeliensis*

\**Polypogon maritimus* Willd.— {AFP}

\**Polypogon monspeliensis* (L.) Desf.— {AFP}

## Polytrias {AFP}

\**Polytrias indica* (Houtt.) Veldkamp— {AFP}

## Pseudosasa {AFP}

\**Pseudosasa japonica* (Sieb. & Zucc. ex Steud.) Makino ex Nakai— {AFP}

## Rottboellia {AFP}

\**Rottboellia cochinchinensis* (Lour.) Clayton— {AFP}

## Saccharum {AFP}

1. Spikelets without awns [2]

1. Spikelets with awns (Erianthus) [3]
2. Rhizomes short; culms numerous, 2-5 cm wide; leaf blades 20-60 mm wide; peduncles and pedicels usually glabrous ... *S. officinarum*
2. Rhizomes elongate; culms solitary or few, 0.6-2 cm wide; leaf blades 10-25 mm wide; peduncles and pedicels pilose ... *S. spontaneum*
3. Base of the awns flattened and spirally twisted [4]
3. Base of the awns terete and straight or slightly twisted [5]
4. Culm distally and inflorescence rachis densely pubescent; callus hairs 9-14 mm long ... *S. alopecuroides*
4. Culm distally and inflorescence rachis glabrous to sparsely pilose; callus hairs 3-7 mm long ... *S. breviarbe* var. *contortum*
5. Inflorescence 1-2.5(3) cm wide; calluses glabrous or with hairs to 2.6 mm long; panicles 1-2.5 cm wide ... *S. baldwinii*
5. Inflorescence 3-15 cm wide; callus hairs 3-20(25) mm long, often equaling the spikelets [6]
6. Inflorescence 3-5(7) cm wide, the proximal nodes glabrous to sparsely pilose; callus hairs 3-6 mm long, subequal to shorter than the spikelets ... *S. coarctatum*
6. Inflorescence (6)8-15 cm wide, the proximal nodes densely pilose; callus hairs (6)10-20(25) mm long, longer than the spikelets ... *S. giganteum*

***Saccharum alopecuroides*** (L.)Nutt.— {AFP}

***Saccharum baldwinii*** Spreng.— {AFP}

***Saccharum breviarbe*** (Michx.)Pers. var. ***contortum*** (Baldwin ex Elliott)R.D.Webster— {AFP}

***Saccharum coarctatum*** (Fernald)R.D.Webster— {AFP}

***Saccharum giganteum*** (Walter)Pers.— {AFP}

^ *Saccharum officinarum* L.— {AFP}

\****Saccharum spontaneum*** L.— {AFP}

### **Sacciolepis** {AFP}

1. Annual; leaf blades 1.5-5.5 mm wide; inflorescence 0.5-9(13) cm long, the primary branches fused to the rachis for most of its length, the proximal ones 0.1-0.5 cm long; spikelets 2.1-3.3 mm long; upper glumes 9-veined; paleas of the lower floret 0.5-1 mm long, <1/2 as long as the lower lemma ... *S. indica*

1. Perennial; leaf blades 3-22 mm wide; inflorescence 3-30 cm long, the primary branches free, proximally ones 0.4-11.5 cm long; spikelets 2.9-5 mm long; upper glumes 11-veined; paleas of the lower floret 2-4 mm long, subequal to the lower lemma ... *S. striata*

\****Sacciolepis indica*** (L.)Chase— {AFP}

***Sacciolepis striata*** (L.)Nash— {AFP}

### **Schizachyrium** {AFP}

1. Leaf blade upper surface with a longitudinal strip of lighter colored, spongy tissue (of bulliform cells) ... *S. tenerum*

1. Leaf blade upper surface uniformly colored, lacking lighter colored spongy tissue [2]

2. Stems often rooting and branching at the lower nodes in contact with the soil; leaf collars usually elongate (ca. 1-2 mm long) and narrowed relative to the sheath and blade; plants of sandy coastal habitats [3]

2. Stems not rooting or branching at the lower nodes; leaf collars neither elongate (<1 mm long) nor particularly narrowed; plants of varied habitats [4]

- 3. Ligules (0.5)1-2 mm long; pedicellate spikelets 1.5-5.5 mm long; east coast ... *S. littorale*
- 3. Ligules 0.5-1 mm long; pedicellate spikelets 4.5-8.5 mm long; panhandle ... *S. maritimum*
- 4. Larger leaf blades 2.5-10 cm long, mostly spreading often nearly at right angles to the culm ...  
*S. niveum*
- 4. Larger leaf blades 10-100 cm long, generally ascending to spreading [5]
- 5. Rames appearing linear, the spikelets generally strict or appressed, the pedicel bases 0.2-0.5 mm wide, gradually widening to 0.3-1 mm distally, straight, often somewhat stiff, not tending to curve outward ... *S. sanguineum*
- 5. Rames appearing somewhat open, the spikelets generally spreading or divergent, the pedicel bases 0.1-0.2 mm wide, flaring above midlength to about 0.5 mm wide, tending to curve outward [6]
- 6. Leaf blades 1-4 mm wide, often involute or folded [7]
- 6. Leaf blades 3.5-9 mm wide, usually flat [9]
- 7. Plant rhizomatous ... *S. rhizomatum*
- 7. Plant caespitose [8]
- 8. Plant gracile; leaf blades 0.5-1 mm wide; inflorescence with few branches, the rames with 7-10 spikelet pairs ... *S. gracile*
- 8. Plant robust; leaf blades 0.5-4 mm wide; inflorescence with several branches, the rames with 10-13 spikelet pairs ... *S. sericatum*
- 9. Plant rhizomatous ... *S. stoloniferum*
- 9. Plant caespitose [10]
- 10. Leaf sheath and blades usually densely pubescent throughout ... *S. scoparium* var. *divergens*
- 10. Leaf sheath and blades usually glabrate, sometimes densely pubescent only near the base of the plant ... *S. scoparium* var. *scoparium*

***Schizachyrium gracile*** (Spreng.)Nash— {AFP}

***Schizachyrium littorale*** (Nash)E.P.Bickn.— {AFP}

***Schizachyrium maritimum*** (Chapm.)Nash— {AFP}

***Schizachyrium niveum*** (Swallen)Gould— {AFP} Endemic. State Endangered.

***Schizachyrium rhizomatum*** (Swallen)Gould— {AFP} Endemic.

***Schizachyrium sanguineum*** (Retz.)Alston— {AFP}

***Schizachyrium scoparium*** (Michx.)Nash var. ***divergens*** (Hack.)Gould— {AFP}

***Schizachyrium scoparium*** (Michx.)Nash var. ***scoparium***— {AFP}

***Schizachyrium sericatum*** (Swallen)Gould— {AFP} Endemic. State Endangered.

***Schizachyrium stoloniferum*** Nash— {AFP}

***Schizachyrium tenerum*** Nees— {AFP}

**Secale** {AFP}

\****Secale cereale*** L.— {AFP}

**Setaria** {AFP} Excluded: *Setaria leucopila* reported for Florida, but no specimens known.

1. Bristles on pedicel below each spikelet 4-18 [2]

1. Bristles on pedicel below each spikelet 0-3(6) (some spikelets abortive) [4]

2. Annual; spikelets 2-3.4 mm long ... *S. pumila*

2. Perennial; spikelets 2-2.5 mm long [3]

3. Leaf blades 4-20(25) cm long; inflorescence (11) cm long ... *S. parviflora*

3. Leaf blades (8)15-50 cm long; inflorescence (5)10-25 cm long; bristles ... *S. sphacelata*

- 4. Bristles retrorsely scabrous ... *S. adhaerans*
- 4. Bristles antrorsely scabrous [5]
- 5. Bristle usually only subtending the terminal spikelet, bristles subtending more proximal spikelets usually absent or infrequent [6]
- 5. Bristles subtending all spikelets [8]
- 6. Annual; leaf blades 10-25 mm wide; inflorescence rachis villous ... *S. barbata*
- 6. Perennial; leaf blades 20-80 mm wide; inflorescence rachis scabrous or puberulent [7]
- 7. Inflorescence compact and spicate, the branches stiff and 2-5 cm long ... *S. megaphylla*
- 7. Inflorescence open and paniculate, the branches lax and 6-10 cm long ... *S. palmifolia*
- 8. Perennial; inflorescence somewhat loosely flowered [9]
- 8. Annual; inflorescence usually densely flowered or sometimes somewhat loose [11]
- 9. Spikelets 3-3.2 mm long ... *S. macrosperma*
- 9. Spikelets 1.9-2.5 mm long [10]
- 10. Leaf blades 1-5 mm wide; lower glumes ca. 1/3 as long as the spikelets ... *S. rariflora*
- 10. Leaf blades 6-12 mm wide; lower glumes ca. half as long as the spikelets ... *S. setosa*
- 11. Upper lemmas smooth and shiny (occasionally obscurely rugose); leaf blades 10-35 mm wide [12]
- 11. Upper lemmas distinctly transversely rugose, dull; leaf blades to 4-15(25) mm wide [13]
- 12. Spikelets 2.8-3.2 mm long, the lower palea absent or up to 1/2 as long as the lower lemma ... *S. italica*
- 12. Spikelets 1.8-2.2 mm long, the lower palea subequal to the lower lemma ... *S. magna*
- 13. Culm nodes often strigose or hispid; upper lemmas coarsely rugose ... *S. corrugata*
- 13. Culm nodes glabrous; upper lemmas finely rugose [14]
- 14. Leaf blade upper surface softly pilose; inflorescence mostly nodding from the base; spikelets 2.5-3 mm long ... *S. faberi*
- 14. Leaf blades upper surface scabrous; inflorescence mostly nodding only near the apex; spikelets 1.8-2.2 mm long ... *S. viridis*

\****Setaria adhaerens*** (Forssk.)Chiov.— Commonly confused with *Setaria verticillata*, which is allegedly tetraploid, with leaf sheaths distally ciliate and leaf blade lower surface (and usually upper surface) without papillose-based hairs or these very few (unknown in Florida; occasionally with antrorsely scabrous awns, cf. *S. verticilliformis*). *Setaria adhaerens* is diploid, with glabrous leaf sheath margins and leaf blade lower surface (and upper surface) moderately to densely pilose with papillose-based hairs, occasionally a few blades sparsely pilose (Layton & Kellogg 2014).

\****Setaria barbata*** (Lam.)Kunth— {AFP}

***Setaria corrugata*** (Elliott)Schult.— {AFP}

\****Setaria faberi*** R.A.W.Herrm.— {AFP}

\****Setaria italica*** (L.)P.Beauv.— {AFP}

***Setaria macrosperma*** (Scribn. & Merr.)K.Schum.— {AFP}

***Setaria magna*** Griseb.— {AFP}

\****Setaria megaphylla*** (Steud.)T.Durand & Schinz— {AFP}

\****Setaria palmifolia*** (J.König)Stapf— {AFP}

***Setaria parviflora*** (Poir.)Kerguelen— {AFP}

\****Setaria pumila*** (Poir.)Roem. & Schult.— {AFP}

\****Setaria rariflora*** Mikan ex Trin.— {AFP}

\****Setaria setosa*** (Sw.)P.Beauv.— {AFP}

\****Setaria sphacelata*** (Schumach.)M.B.Moss ex Stapf & C.E.Hubb.— {AFP}

\****Setaria viridis*** (L.)P.Beauv.— {AFP}

### Sorghastrum {AFP}

1. Rhizomatous; spikelet awns 2-15(30) mm long, mostly with one bend (once-geniculate); glume surfaces stramineous to faintly brown ... *S. nutans*
1. Cespitose; awns (16)25-40 mm long, mostly with two bends (twice-geniculate, sometimes subtle); glume surfaces brown [2]
2. Inflorescence secund; pedicels sharply curved or recurved; spikelets 0.8-1.2 mm wide ... *S. secundum*
2. Inflorescence not secund; pedicels flexuous; spikelets 1.1-1.8 mm wide [3]
3. Inflorescence main axis straight to slightly curved, with branches arising from all sides; spikelets 1.3-1.8 mm wide; flowering Jul-Sep ... *S. apalachicolense*
3. Inflorescence main axis arching, with branches arising from one side; spikelets 1.1-1.4 mm wide; flowering Sep-Nov ... *S. elliotii*

***Sorghastrum apalachicolense*** D.W.Hall— {AFP} Endemic.

***Sorghastrum elliotii*** (C.Mohr)Nash— {AFP}

***Sorghastrum nutans*** (L.)Nash— {AFP}

***Sorghastrum secundum*** (Elliott)Nash— {AFP}

### Sorghum {AFP}

1. Rhizomatous perennial; spikelets disarticulating at maturity; sessile spikelets 3.8-6.5 mm long; caryopses concealed at maturity ... *S. halepense*
1. Annual, or short-lived perennial; spikelets not disarticulating or tardily so; sessile spikelets 3-9 mm long; caryopses sometimes exposed at maturity [2]
2. Inflorescence branches persistent at maturity; sessile spikelets 3-9 mm long; caryopses exposed at maturity ... *S. bicolor* subsp. *bicolor*
2. Inflorescence branches disarticulating at maturity; sessile spikelets 5-8 mm long; caryopses concealed at maturity [3]
3. Inflorescence branches tardily disarticulating; sessile spikelets 5-6 mm long ... *S. bicolor* subsp. *drummondii*
3. Inflorescence branches readily disarticulating; sessile spikelets 5-8 mm long ... *S. bicolor* subsp. *verticilliflorum*

^ *Sorghum bicolor* Moench subsp. *bicolor*— {AFP}

^ *Sorghum bicolor* Moench subsp. *drummondii* (Nees ex Steud.)de Wet ex Davidse— {AFP}

^ *Sorghum bicolor* Moench subsp. *verticilliflorum* (Steud.)de Wet ex Wiersema & J.Dahlb.— {AFP}

\* ***Sorghum halepense*** (L.)Pers.— {AFP}

### Spartina {AFP}

1. Leaf blade margins smooth to slightly scabrous; spikelets glabrous or sparsely pilose; rhizomatous ... *S. alterniflora*
1. Leaf blade margins strongly scabrous; spikelets scabrous or hispid; rhizomatous or cespitose [2]
2. Inflorescence with 2-15 branches [3]
2. Inflorescence with (5)13-51(75) branches [4]
3. Cespitose; inflorescence branches strongly appressed ... *S. bakeri*
3. Rhizomatous; inflorescence branches mostly spreading to ascending ... *S. patens*

4. Rhizomatous; leaf blades 6-20 mm wide, flat or somewhat involute; inflorescence branches spreading-ascending, 6-13(15) cm long; spikelets 9-14 mm long ... *S. cynosuroides*
4. Cespitose; leaf blades 1.5-4.5 mm wide, involute; inflorescence branches strongly appressed, 0.5-6(7) cm long; spikelets 5-8(10) mm long ... *S. spartinae*

***Spartina alterniflora*** Loisel.— {AFP}

***Spartina bakeri*** Merr.— {AFP}

***Spartina cynosuroides*** (L.)Roth— {AFP}

***Spartina patens*** (Aiton)Muhl.— {AFP}

***Spartina spartinae*** (Trin.)Merr. ex Hitchc.— {AFP}

### **Sphenopholis** {AFP}

1. Spikelets 4.5-9.5 mm long; distal lemma awns (2)3-7(9) mm long ... *S. pensylvanica*
1. Spikelets 2.1-5.2 mm long; distal lemma awns usually absent or sometimes 0.1-3 mm long [2]
2. Leaf blades 0.3-1.5(2) mm wide, involute ... *S. filiformis*
2. Leaf blades (1)2-8 mm wide, flat to slightly involute [3]
3. Lower glume 0.3-0.4 mm wide, 1/3 - 1/2 as wide as the upper glume; distal lemma margins scabrous ... *S. nitida*
3. Lower glume 0.1-0.3 mm wide, <1/3 as wide as the upper glume; distal lemma margins mostly smooth and scabrous only at the tip [4]
4. Panicles usually nodding, not spicate, the spikelets usually loosely arranged; upper glumes not subcucullate, 3-5 times as long as wide; ... *S. intermedia*
4. Panicles usually erect, often spicate, the spikelets usually densely arranged; upper glumes subcucullate, 2-3 times as long as wide; ... *S. obtusata*

***Sphenopholis filiformis*** (Chapm.)Scribn.— {AFP}

***Sphenopholis nitida*** (Biehler)Scribn.— {AFP}

***Sphenopholis obtusata*** (Michx.)Scribn.— {AFP}

***Sphenopholis pensylvanica*** (L.)Hitchc.— {AFP}

### **Sporobolus** {AFP}

1. Calluses (just below lemma) hairy, the hairs 1/4 - 7/8 as long as the lemmas; paleas hairy; fruits falling with the lemma and palea ... *S. vaseyi*
1. Calluses glabrous to glabrate; paleas glabrous; fruits falling free of the lemma and palea [2]
2. Lemma strigose or scabridulous [3]
2. Lemma glabrous [4]
3. Perennial; panicle 5-11 cm long; spikelets 4-9(10) mm long ... *S. clandestinus*
3. Annual; panicle 1-5 cm long; spikelets 2.3-6 mm long ... *S. vaginiflorus*
4. Spikelets (3.5)4-6.6 mm long [5]
4. Spikelets 0.7-3.8 mm long [7]
5. Culms (including the inflorescence) 30-70 cm tall; leaf blades 0.5-1.5(2) mm wide, 15-40(50) cm long, margins often smooth, blade base upper side densely pubescent; inflorescence branches stiffly ascending; pedicels 1-3(10) mm long, strongly appressed; lower glume (0.8)0.95-1.1(1.3) times as long as the upper glume ... *S. curtissii*
5. Culms (including the inflorescence) (30)70-160(220) cm tall; leaf blades 1.2-10 mm wide, (30)40-80 cm long, margins scabridulous, blade base upper side glabrate to sparsely pilose; inflorescence branches initially ascending, later loosely ascending to spreading; pedicels (2)4-15 mm long, ascending to spreading; lower glume 0.5-0.95 times as long as the upper glume [6]

6. Leaf blades (2)3-10 mm wide, mostly pale bluish-green (sometimes some yellowish), mostly widely spreading to recumbent with age; lower glume (0.6)0.75-0.95 times as long as the upper glume ... *S. floridanus*
6. Leaf blades 1.2-2.0(3.0) mm wide, dark green, mostly strictly ascending; lower glume (0.5)0.6-0.8 as long as the upper glume ... *S. osceolensis*
7. Annual; inflorescence very diffuse, the spikelets widely dispersed at the tips of the branches; spikelets 0.7-1.1 mm long ... *S. tenuissimus*
7. Perennial, or annual in *S. pyramidatus*; inflorescence dense to open, usually at least the upper half of the branches with spikelets; spikelets 1.2-3.8 mm long [8]
8. Upper glume 0.4-1.6 mm long,  $<2/3$  as long as the floret and not exceeding the lemmas [9]
8. Upper glume 1.1-3.2 mm long,  $>2/3$  as long as the floret and reaching the lemma tip or exceeding the lemmas [11]
9. Spikelets 2-2.7 mm long, the upper glumes usually  $1/2 - 2/3$  as long as the florets, acute to obtuse, entire ... *S. indicus*
9. Spikelets 1.3-1.8(2) mm long, the upper glumes usually  $<1/2$  as long as the florets, truncate, erose to denticulate [10]
10. Inflorescence branches without spikelets on the lower  $1/4$ ; anthers 2(3), 0.5-0.8 mm long ... *S. diandrus*
10. Inflorescence branches spikelet-bearing to the base; anthers (2)3, 0.9-1.1 mm long ... *S. jacquemontii*
11. Spikelets 1.8-3.8 mm long; lower glume 0.9-2.5 mm long; upper glume 1.8-3.8 mm long; lemmas 2-3.6 mm long; paleas 2-3.6 mm long; anthers 1-2 mm long [12]
11. Spikelets 1.2-2 mm long; lower glume 0.3-1.1 mm long; upper glume 1.1-2 mm long; lemmas 1.1-2 mm long; paleas 1-2 mm long; anthers 0.2-1 mm long [13]
12. Cespitose; inflorescence usually open, the internodes plainly visible, lower half to quarter of primary branches usually lacking spikelets, proximal nodes with whorls or verticils of 4-6 spreading to ascending branches; spikelets purplish or reddish ... *S. junceus*
12. Rhizomatous or stoloniferous; inflorescence dense, the internodes usually concealed, primary branches with spikelets throughout, proximal nodes with appressed branches; spikelets pale ... *S. virginicus*
13. Panicle 10-25(35) cm long, the primary branches eglandular and with spikelets throughout their length; anthers 0.5-1 mm long ... *S. domingensis*
13. Panicle 4-8(18) cm long, the primary branches with elongate glands and lacking spikelets on the lower half to quarter; anthers 0.2-0.4 mm long ... *S. pyramidatus*

***Sporobolus compositus*** (Poir.)Merr. var. *clandestinus* (Biehler)Wipff & S.D.Jones— {AFP}

***Sporobolus curtissii*** Small ex Kearney— {AFP}

***Sporobolus domingensis*** (Trin.)Kunth— {AFP}

***Sporobolus floridanus*** Chapm.— {AFP}

\****Sporobolus indicus*** (L.)R.Br.— {AFP}

\****Sporobolus jacquemontii*** Kunth— {AFP}

***Sporobolus junceus*** (P.Beauv.)Kunth— {AFP}

***Sporobolus osceolensis*** E.L. Bridges & Orzell— Endemic. North and central peninsula.

***Sporobolus pyramidatus*** (Lam.)Hitchc.— {AFP}

\****Sporobolus tenuissimus*** (Mart. ex Schrank)Kuntze— {AFP}

***Sporobolus vaginiflorus*** (Torr. ex A.Gray)A.W.Wood— {AFP}

***Sporobolus vaseyi*** P.M.Peterson— {AFP} Endemic. State Threatened.

***Sporobolus virginicus*** (L.)Kunth— {AFP}



## Steinchisma {AFP}

1. Leaf blades 2-5 mm wide; primary inflorescence branches usually <10; spikelets 1.8-2.4 mm long ... *S. hians*

1. Leaf blades 2-9 mm wide; primary inflorescence branches usually 10-30; spikelets 0.9-1.3 mm long ... *S. laxum*

***Steinchisma hians*** (Elliott) Nash— {AFP}

\****Steinchisma laxum*** (Sw.)Zuloaga— {AFP}

## Stenotaphrum {AFP}

***Stenotaphrum secundatum*** (Walter)Kuntze— {AFP}

## Themeda {AFP}

\****Themeda quadrivalvis*** (L.)Kuntze— {AFP}

## Thysanolaena

^ *Thysanolaena latifolia* (Roxb. ex Hornem.)Honda—

## Tridens {AFP}

1. Panicles 0.3-4 cm wide, the primary branches ascending to strict [2]

1. Panicles 1-20 cm wide, the primary branches ascending, spreading, reflexed, or pendent [3]

2. Plant with elongate rhizomes; spikelets 7-10 mm long, the glumes subequal to the lemmas; lemmas 4-5 mm long ... *T. carolinianus*

2. Plant densely cespitose; spikelets 4-7 mm long, the glumes longer than and exceeding the lemmas; lemmas (2)3-3.5 mm long ... *T. strictus*

3. Lower glume (1)1.5-2.5 mm long; lemma lateral veins rarely reaching the distal margin ... *T. eragrostoides*

3. Lower glume 2.5-4.5 mm long; lemma lateral veins sometimes excurrent as short points [4]

4. Panicle 7-17(20) cm long; pedicels 0.1-0.9 mm long; lower glume 4-4.5 mm long ... *T. ambiguus*

4. Panicle 15-40 cm long; pedicels 3-8 mm long; lower glume 2.5-3 mm long [5]

5. Panicles nodding; pulvini inconspicuously or conspicuously hairy, the hairs confined to the upper side of the branches ... *T. flavus* var. *chapmanii*

5. Panicles erect throughout, the pulvini conspicuously hairy completely around the base of the branches ... *T. flavus* var. *flavus*

***Tridens ambiguus*** (Elliott)Schult.— {AFP}

***Tridens carolinianus*** (Steud.)Henrard— {AFP}

***Tridens eragrostoides*** (Vasey & Scribn.)Nash— {AFP}

***Tridens flavus*** (L.)Hitchc. var. ***chapmanii*** (Small)Shinners— {AFP}

***Tridens flavus*** (L.)Hitchc. var. ***flavus***— {AFP}

***Tridens strictus*** (Nutt.)Nash— {AFP}

## Tripidium {AFP}

\****Tripidium ravennae*** (L.)H.Scholz— {AFP}

## Triplasis {AFP}

1. Internodes pubescent; lemma awns (4.4)6-8.1 mm long, much exceeding the long, subulate-pointed lobes of the lemma ... *T. americana*

1. Internodes glabrous, or puberulent only immediately below the node, or occasionally pubescent; lemma awns 1-3.1 mm long, shorter than or barely exceeding the lobes of the lemma [2]

2. Internodes pubescent; lemma awns 1.5-3 mm long, the lobes acute ... *T. intermedia*

2. Internodes glabrous, or puberulent only immediately below the node; lemma awns 0-1.9 mm long, the lobes obtuse to rounded ... *T. purpurea*

***Triplasis americana*** P.Beauv.— {AFP}

***Triplasis intermedia*** Nash—Not recognized by Hitchcock & Chase (1951) and others, but resurrected by Wilder et al. 2019 & Wilder & McCollom (2023).

***Triplasis purpurea*** (Walter)Chapm.— {AFP}

**Tripsacum** {AFP}

1. Culms 1-2(4) m tall, 3-5 mm wide; leaf blades 9-35(45) mm wide, flat, subequal to the sheath ... *T. dactyloides*

1. Culms 0.2-1 m tall, 1-2 mm wide; leaf blades 1-7(15) mm wide, involute or folded, conspicuously narrower than the sheath ... *T. floridanum*

***Tripsacum dactyloides*** (L.)L.— {AFP}

***Tripsacum floridanum*** Porter ex Vasey— {AFP} State Threatened. Southern peninsula (Greater Antilles).

**Triticum** {AFP}

^ *Triticum aestivum* L.— {AFP}

**Uniola** {AFP}

***Uniola paniculata*** L.— {AFP}

**Urochloa** {AFP}

1. Lowest node of inflorescence with 4-11 whorled or fascicled branches ... *U. maxima*

1. Lowest node of inflorescence with 1(-2) branches [2]

2. Spikelets solitary; inflorescence branches usually 7 or fewer [3]

2. Some or most spikelets paired (except near the tips of branches, sometimes most spikelets solitary and very few paired in *U. ramosa*); inflorescence branches usually 5 or more [9]

3. Lower glume 5-7-veined; glumes scarcely separated by a rachilla <0.3 mm long [4]

3. Lower glume 9-11-veined; glumes separated by a rachilla 0.3-0.5 mm long [5]

4. Sheath and pedicels glabrate, or pedicel with 1-2 hairs; spikelets 1.4-1.7 mm wide ... *U. arrecta*

4. Sheath and pedicels usually pilose; spikelets 1.8-2.3 mm wide ... *U. platyphylla*

5. Upper glume glabrate [6]

5. Upper glume pubescent [7]

6. Base of the blade subcordate, not clasping the stem; spikelets 3-4.5 mm long ... *U. distachya*

6. Base of the blade cordate, clasping the stem; spikelets 4-6 mm long ... *U. plantaginea*

7. Leaf blade and sheath glabrate; lower glume 3.3-5.3 mm long ... *U. humidicola*

7. Leaf blade and sheath pilose; lower glume 1.8-3.3 mm long [8]

8. Internodes pilose, especially below the node; spikelets 4.4-4.8(-6) mm long ... *U. brizantha*

8. Internodes glabrate; spikelets 3.8-4.3(-4.9) mm long ... *U. piligera*

9. Spikelets 4.8-6 mm long ... *U. texana*
9. Spikelets 2.-4.2 mm long [10]
10. Inflorescence branches densely pilose, with papillose-based trichomes ... *U. arizonica*
10. Inflorescence branches glabrous, pilose, or pubescent, hairs not or rarely papillose-based [11]
11. Plant usually sprawling, spreading and rooting at the lower nodes separated by elongate internodes; nodes often villous; primary inflorescence branches flat and winged to slightly triquetrous; lower glume 1-3-veined ... *U. mutica*
11. Plant caespitose, shortly sprawling, or occasionally sprawling with elongate internodes; nodes glabrous to pubescent; primary inflorescence branches triquetrous; lower glume 3-5-veined [12]
12. Upper glume and lower lemma with cross-venation throughout its length ... *U. fusca* var. *reticulata*
12. Upper glume and lower lemma without cross-venation or only in the distal half of the glume [12]
13. Leaf blade edge smooth to faintly scabrous; spikelets abruptly acuminate at the apex ... *U. adspersa*
13. Leaf blade edge scabrous; spikelets shortly-mucronate or shortly-apiculate at the apex ... *U. ramosa*

- Urochloa adspersa*** (Trin.)R.D.Webster— {AFP}
- \****Urochloa arizonica*** (Scribn. & Merr.)Morrone & Zuloaga— {AFP}
- \****Urochloa arrecta*** (Hack. ex T.Durand & Schinz)Morrone & Zuloaga— {AFP}
- \****Urochloa brizantha*** (Hochst. ex A.Rich.)R.D.Webster— {AFP}
- \****Urochloa distachyos*** (L.)T.Q.Nguyen— {AFP}
- \****Urochloa fusca*** (Sw.)B.F.Hansen & Wunderlin var. ***reticulata*** (Torr.)B.F.Hansen & Wunderlin— {AFP}
- \****Urochloa humidicola*** (Rendle)Morrone & Zuloaga— {AFP}
- \****Urochloa maxima*** (Jacq.)R.D.Webster— {AFP}
- \****Urochloa mutica*** (Forssk.) T.Q.Nguyen— {AFP}
- \****Urochloa piligera*** (F.Muell. ex Benth.)R.D.Webster— {AFP}
- \****Urochloa plantaginea*** (Link)R.D.Webster— {AFP}
- Urochloa platyphylla*** (Munro ex C.Wright)R.D.Webster— {AFP}
- \****Urochloa ramosa*** (L.)T.Q.Nguyen— {AFP}
- \****Urochloa texana*** (Buckley)R.D.Webster— {AFP}

**Zea** {AFP}: 7 species, native to Mexico and Central America. Historically cultivated by indigenous groups, primarily in northern Florida (Kelly et al. 2006).

1. Pistillate inflorescences of cylindrical spikes, 2-5(10) cm thick, with 8-24+ rows of spikelets pairs, each inflorescence tightly and permanently enclosed by several leaf sheaths and a large prophyll, not disarticulating at maturity; caryopses 60-1000+, not concealed; staminate panicle branches not disarticulating below the sessile spikelets, lacking abscission layers, the central axis of the panicles polystichous, much thicker than the lateral branches ... *Z. mays* subsp. *mays*
1. Pistillate inflorescences of cylindrical, distichous rames, 0.5-0.9 cm thick, with 2 rows of spikelet pairs, each rame usually enclosed by a single leaf sheath and a prophyll, disarticulating at maturity into fruitcases; caryopses 4-15, each one concealed within a fruitcase; staminate panicles composed of rames that disarticulate below the sessile spikelets and have evident abscission layers, the central axis of the panicles similar in width to the rames [2]

2. Staminate spikelet (6.5)7.5-10.5 mm long, 2.5-3.5 mm wide; fruitcases 9-12 per spike, 6-10 mm long, 4-6 mm wide, the axial side (opposite of glume) pointed apically ... *Z. mays* subsp. *mexicana*  
2. Staminate spikelet 4.5-7(8) mm long, 1.5-2.5 mm wide; fruitcases 5-9(10) per spike, 5-8 mm long, 3-5 mm wide, the axial side (opposite of glume) blunt apically ... *Z. mays* subsp. *parviglumis*

^ *Zea mays* L. subsp. *mays*— {AFP}

^ *Zea mays* L. subsp. *mexicana* (Schrad.) Ittis— {AFP}

^ *Zea mays* L. subsp. *parviglumis* Ittis & Doebley— {AFP}

## Zizania {AFP}

*Zizania aquatica* L.— {AFP}

## Zizaniopsis {AFP}

*Zizaniopsis miliacea* (Michx.) Döll & Asch.— {AFP}

## Zoysia {AFP}

1. Leaf blades 0.1-0.5 mm wide; peduncle included or extending to 1 cm beyond the sheath of the subtending leaf; racemes with 3-12 spikelets; spikelet 0.5-0.8 mm wide ... *Z. pacifica*

1. Leaf blades 0.5-5 mm wide; peduncle extending (0.3)1-6.5 cm beyond the sheath of the subtending leaf; racemes with 10-50 spikelets; spikelet 0.6-1.4 mm wide [2]

2. Culm internodes 2-10 mm long; leaf blades ascending; pedicels 1.6-3.5 mm long; spikelets ovate, 1-1.4 mm wide ... *Z. japonica*

2. Culm internodes 5-40 mm long, all plants with at least some internodes >14 mm long; leaf blades patent; pedicels 0.6-1.6 mm long; spikelets lanceolate, 0.6-1 mm wide ... *Z. matrella*

^ *Zoysia japonica* Steud.— {AFP}

\* *Zoysia matrella* (L.) Merr.— {AFP}

\* *Zoysia pacifica* (Goudswaard) M. Hotta & Kuroki— {AFP}

## ARECALES

**ARECACEAE** {AFP} Notes on using the key: Cespitose palms usually have new stems continuously arising from the base of the plant. Solitary palms show no signs of new stems at the base; however small or slender solitary palms are frequently planted in tight clusters giving the illusion of being cespitose.

1. Leaves palmately to costapalmately divided [2]

1. Leaves pinnately to bipinnately divided [3]

2. Petiole, trunk, leaf sheath, and/or leaf blade armed with spines or prickles (sometimes the prickles rare in *Livistona chinensis*) ... Key A

2. Petiole, trunk, leaf sheath, and leaf blade unarmed (petiole generally smooth) ... Key B

3. Plant with a green to glaucous crownshaft completely encircling or encircling ca. two-thirds or more of stem apex, formed from sheathing leaf bases ... Key C

3. Plants without a green or glaucous crownshaft [4]

4. Petiole or trunk armed with spines or prickles ... Key D

4. Petiole or trunk unarmed, the petiole margin sometimes roughened ... Key E

Key A

1. Leaf sheath armed, these appearing to arise from the trunk [2]
1. Leaf sheath unarmed, the trunk appearing unarmed [3]
2. Plant low to the ground, to 3 m tall; stem (leaf sheath) with long needle-like prickles ...  
*Rhapidophyllum hystrix*
2. Plant > 3 m tall; stem (leaf sheath) clothed in bands of prickles ... *Zombia antillarum*
3. Plant caespitose (rarely single-trunked) or stems branching [4]
3. Plant with one stem (branching very rare) [7]
4. Stems prostrate to ascending, branching; petiolar prickles <2 mm long; fruit cylindrical, ca. 1.5-2.5 cm long ... *Serenoa repens*
4. Stems erect, caespitose; petiolar prickles 2-5 mm long; fruit globose, ca. 1 cm long [5]
5. Leaf blade nearly completely divided into leaflets with dentate tips ... *Licuala spinosa*
5. Leaf blade fused for ca. ½ its length; leaflets acute at tips [6]
6. Plant monoecious, to 7 m tall; stem <15 cm wide, the persistent leaf bases loosely packed; inflorescence subequal to longer than the leaves ... *Acoelorrhaphe wrightii*
6. Plant often dioecious, to 4 m tall (rarely to 6 m); stem usually >15 cm wide, the persistent leaf base densely packed; inflorescence shorter than the leaves, usually not reaching the leaf blade (commonly cultivated, not naturalized in Florida) ... *Chamaerops humilis*
7. Leaf blade nearly completely undivided ... *Licuala grandis*
7. Leaf blade divided 1/3 or more into leaflets [8]
8. Plant monocarpic; petioles > 2 m long; inflorescence terminal ... *Corypha umbraculifera*
8. Plant perennial; petioles mostly <2 m long; inflorescence axillary [9]
9. Plant often dioecious; mature plants to 4(6) m tall; inflorescence compact, the rachis obscure ... *Chamaerops humilis*
9. Plant monoecious; mature plants to 20 m tall; inflorescence elongate, the rachis apparent [10]
10. Petiole split at the base; young leaves with filamentous threads; inflorescence subequal to longer than the leaves ... *Washingtonia robusta*
10. Petiole not split at the base; young leaves lacking filamentous threads; inflorescence shorter to longer than the leaves [11]
11. Without conspicuous woven fibers at base of and between the leaves ... *Copernicia*
11. Woven fibers conspicuous at base of and between the leaves [12]
12. Leaf blade tips of mature plants abruptly bent and drooping; inflorescence with 3 orders of branching; fruit glaucous blue to black, usually ellipsoidal ... *Livistona*
12. Leaf blades generally held straight; inflorescences with 5 orders of branching, immediately 3-forking to 3 equal main axes; fruit orange-red to brownish blue, globose ... *Saribus rotundifolius*

#### Key B

1. Upper and lower surface of leaves strongly bluish or silvery [2]
1. Upper surface of leaves mostly green, sometimes somewhat gray-green or blue-green, the lower surface green, glaucous, or silvery [3]
2. Base of petiole auriculate with a sharp corner; plant relatively larger; leaf tips mostly blunt or bifid (commonly cultivated, not naturalized in Florida) ... *Bismarckia nobilis*
2. Base of petiole curved, without a sharp corner; plant relatively smaller; leaf tips mostly acute and pointed (commonly cultivated, not naturalized in Florida) ... *Latania loddigesii*
3. Plant caespitose or rhizomatous (commonly cultivated, not naturalized in Florida) ... *Rhapis excelsa*
3. Plant with one stem [4]
4. Leaves costapalmate; perianth 2-seriate ... *Sabal*

- 4. Leaves palmate; perianth 1-seriate [5]
- 5. Petiole typically 30-80 cm long (not including sheathing petiole base), not split at the base; inflorescence 30-50 cm long; fruit red or purple to blackish purple [6]
- 5. Petiole typically 60-170 cm long, split at the base; leaf blade glaucous or greenish below; inflorescence 60-150 cm long; fruit white [7]
- 6. Petiole entire, smooth; leaf blade lustrous silvery below, somewhat lax; fruits purple to blackish purple ... *Coccothrinax argentata*
- 6. Petiole smoothish, rough-margined, to slightly tuberculate at the base; leaf blade green, often very stiff; fruits red; cultivated ... *Trachycarpus fortunei*
- 7. Petiole base split at middle and with secondary splits along basal inner margin; hastula silky-pubescent adaxially; leaf blades glaucous below; segment apices stiff or occasionally lax; flowers and fruits sessile or pedicel inconspicuous; seeds perforate ... *Leucothrinax morrisii*
- 7. Petiole base split at the middle only; hastula glabrous adaxially; leaf blades green or light green below; segment apices typically lax; flowers and fruits pedicellate (pedicel usually exceeding 1 mm); seeds not perforate ... *Thrinax radiata*

#### Key C

- 1. Leaflets arising from several planes along a leaf, not in two distinct or neat rows [2]
- 1. Leaf with two distinct, neat rows of leaflets on each side of the leaf [3]
- 2. Leaf not like a bottlebrush; leaf slightly to moderately curved; leaflets long, often laxly drooping, generally gradually narrowed to an acute tip, without filamentous leaflets; petiole base glabrous; fruit smaller, red to purple ... *Roystonea regia*
- 2. Leaf like a bottlebrush with condensed leaflets, often some basal leaflets drooping and filamentous; leaf strongly curved, especially near tip; leaflets short, mostly stiff, with an indefinite tip, appearing torn or split; petiole base pubescent; fruit larger, orange (commonly cultivated, not naturalized in Florida) ... *Wodyetia bifurcata*
- 3. Crownshaft fused ca. half or less of its length, the margin gradually ascending and rounded towards the petiole; inflorescence axillary within leaves ... *Pseudophoenix sargentii*
- 3. Crownshaft fused most of its length, the margin more abruptly rounded to the petiole; inflorescence at base of crownshaft [4]
- 4. Crownshaft not evenly cylindrical, abruptly thicker at the base; leaves often 6 or less [5]
- 4. Crownshaft generally evenly cylindrical, not much thicker at base; leaves often more than 6 [6]
- 5. Trunk typically swollen, thicker than crownshaft; leaflets stiff (commonly cultivated, not naturalized in Florida) ... *Hyophorbe lagenicaulis*
- 5. Trunk gradually narrowed to crownshaft; leaflets mostly stiff but usually some lax (commonly cultivated, not naturalized in Florida) ... *Hyophorbe verschaffeltii*
- 6. Leaflets mostly ascending to erect (occasionally somewhat horizontal) [7]
- 6. Leaflets mostly horizontal to drooping (in *Carpentaria* esp. older leaves, sometimes ascending on new leaves) [9]
- 7. Plant caespitose ... *Dypsis lutescens*
- 7. Plant with one stem [8]
- 8. Leaves often with long slender, dangling leaflets near the base; crownshaft green, mostly smooth; trunk thicker; fruits larger ... *Adonidia merrillii*
- 8. Leaves without slender, dangling leaflets; crownshaft somewhat glaucous and striate; trunk thinner; fruits smaller ... *Ptychosperma elegans*
- 9. Stems slender, often green for much of their length; inflorescence rachis of female plants bright orange ... *Chamaedorea*
- 9. Stems thicker, mostly gray; inflorescence rachis green to gray, not orange [10]

10. Leaf strongly arched, the tip pointing to the ground (occasionally cultivated, not naturalized in Florida) ... *Carpentaria acuminata*

10. Leaves mostly straight to gently arched [11]

11. Leaves often with long slender, dangling leaflets near the base; inflorescence branches spreading; fruit large (commonly cultivated, not naturalized in Florida) ... *Veitchia arecina*

11. Leaves without slender, dangling leaflets; inflorescence branches descending to drooping; fruit small ... *Ptychosperma macarthurii*

#### Key D

1. Stem armed with spines; petiole with spine-like prickles, also often on the rachis interspersed with the leaflets ... *Acrocomia totai*

1. Stem unarmed (except for prickles on the leaf); petiole with prickles, not on the rachis interspersed with the leaflets [2]

2. Petiole armed with prickles, not grading into leaflets ... *Elaeis guineensis*

2. Petiole armed with spine-like prickles, these grading into leaflets [3]

3. Petiole margin often fibrous in some areas ... *Butia odorata*

3. Petiole margin not fibrous ... Phoenix

#### Key E

1. Leaves more than once pinnate ... *Caryota*

1. Leaves once pinnate [2]

2. Leaves in whorls of 3 along stem forming 3 vertical rows (commonly cultivated, not naturalized in Florida) ... *Dypsis decaryi*

2. Leaves not in whorls of 3, not forming 3 vertical rows [3]

3. Leaflets arising from several planes along a leaf, not in two distinct or neat rows; fruit an orange berry ... *Syagrus romanzoffiana*

3. Leaf with two distinct, neat rows of leaflets, one on each side of the leaf; fruit large, a coconut ... *Cocos nucifera*

#### **Acoelorrhaphe** {AFP}

***Acoelorrhaphe wrightii*** (Griseb. & H.Wendl.)H.Wendl. ex Becc.— {AFP} State Threatened.

#### **Acrocomia** {AFP}

^ *Acrocomia totai* Mart.— {AFP}

#### **Adonidia** {AFP}

^ *Adonidia merrillii* (Becc.)Becc.— {AFP}

#### **Bismarckia**

^ *Bismarckia nobilis* Hildebrandt & H.Wendl. —

#### **Butia** {AFP}

^ *Butia odorata* (Barb.Rodr.)Noblick— {AFP}

#### **Carpentaria**

^ *Carpentaria acuminata* (H.Wendl. & Drude)Becc.—

## Caryota {AFP}

1. Plant cespitose, the stems <16 cm wide ... C. mitis
1. Plant with one stem, >15 cm wide ... C. urens

^ *Caryota mitis* Lour.— {AFP}

^ *Caryota urens* L.— {AFP}

## Chamaedorea {AFP}

1. Cespitose; stems often very slender [2]
1. Solitary (but often planted in groups); stems thicker [3]
2. Plants shrubby, the stems and inflorescences usually apparent; foliage often light green ...  
Chamaedorea seifrizii
2. Plants dense and bushy, the stems and inflorescences usually obscured; foliage often dark green ... Chamaedorea cataractarum
3. Leaves simple to bifid or pinnately divided, if pinnate then leaflets not much narrower at the base ... Chamaedorea metallica
3. Leaves pinnately divided, the leaflets conspicuously narrowing at the base ... Chamaedorea elegans

^ *Chamaedorea cataractarum* Mart.—

^ *Chamaedorea elegans* Mart.—

^ *Chamaedorea metallica* O.F. Cook ex H.E. Moore—

^ *Chamaedorea microspadix* Burret—

\* **Chamaedorea seifrizii** Burret— {AFP}

## Chamaerops

^ *Chamaerops humilis* L.—

## Chrysalidocarpus {AFP}

^ *Chrysalidocarpus lutescens* H.Wendl.— {AFP}

## Coccothrinax {AFP}

**Coccothrinax argentata** (Jacq.)L.H.Bailey— {AFP} State Threatened.

## Cocos {AFP}

^ *Cocos nucifera* L.— {AFP}

## Copernicia

1. Petioles indistinct or not visible; leaf blade with prickles ... Copernicia macroglossa
1. Petioles distinct, visible; leaf blade with or without prickles [2]
2. Petiole subequal to leaf blade ... Copernicia baileyana
2. Petiole shorter than leaf blade ... Copernicia fallaensis

^ *Copernicia alba* Morong—

^ *Copernicia baileyana* León—

^ *Copernicia fallaensis* León—

^ *Copernicia macroglossa* Schaedtler—



## Corypha

^ *Corypha umbraculifera* L.—

## Dypsis

^ *Dypsis decaryi* (Jum.) Beentje & J. Dransf.—

## Elaeis {AFP}

^ *Elaeis guineensis* Jacq.— {AFP}

## Hyophorbe

^ *Hyophorbe lagenicaulis* (L.H. Bailey) H.E. Moore—

^ *Hyophorbe verschaffeltii* H. Wendl.—

## Latania

^ *Latania loddigesii* Mart.—

## Leucothrinax {AFP}

**Leucothrinax morrisii** (H. Wendl.) C. Lewis & Zona— {AFP} State Threatened.

## Licuala

1. Stem solitary; leaf blade nearly completely undivided ... *L. grandis*

1. Stems densely cespitose; leaf blade divided ... *L. spinosa*

^ *Licuala grandis* H. Wendl.—

^ *Licuala spinosa* Thunb.—

## Livistona {AFP}

1. Leaflets fused ca. half of length; petiole thorns often wanting ... *L. chinensis*

1. Leaflets mostly separate, only a small portion fused together at the leaf base; petiole thorns conspicuous ... *L. decora*

\* ***Livistona chinensis*** (Jacq.) R. Br. ex Mart.— {AFP}

^ *Livistona decora* (W. Bull.) Dowe—

## Phoenix {AFP}

1. Plant cespitose ... *Phoenix reclinata*

1. Plant solitary-trunked [2]

2. Plant <4 m tall; trunk slender, with blunt-pointed protrusions ... *Phoenix roebelinii*

2. Plant >4 m tall; trunk thicker, relatively smooth, knobby, or with persistent leaf bases [3]

3. Leaves twisted, held along a vertical plane ... *Phoenix rupicola*

3. Leaves held horizontally [4]

4. Trunk with persistent leaf bases ... *Phoenix sylvestris*

4. Trunk without persistent leaf bases [5]

5. Plant tall, trunk very robust with compressed leaf scars mostly not forming conspicuous knobs; leaves less glaucous ... *Phoenix canariensis*

5. Plant very tall, trunk robust with spaced leaf scars forming rounded knobs; leaves glaucous ... *Phoenix dactylifera*

^ *Phoenix canariensis* H.Wildpret—

^ *Phoenix dactylifera* L.—

\* ***Phoenix reclinata*** Jacq.— {AFP}

^ *Phoenix roebelenii* O'Brien— {AFP}

^ *Phoenix rupicola* T. Anderson—

^ *Phoenix sylvestris* Roxb.—

### **Pseudophoenix** {AFP}

***Pseudophoenix sargentii*** H.Wendl. ex Sarg.— {AFP} State Endangered.

### **Ptychosperma** {AFP}

1. Plant with one stem; leaflets mostly ascending to erect ... *P. elegans*

1. Plant usually cespitose; leaflets mostly horizontal to drooping ... *P. macarthurii*

^ *Ptychosperma elegans* (R.Br.) Blume— {AFP}

^ *Ptychosperma macarthurii* (H.Wendl. ex H.J.Veitch) H.Wendl. ex Hook.f.— {AFP}

### **Rhapidophyllum** {AFP}

***Rhapidophyllum hystrix*** (Pursh) H.Wendl. & Drude ex Drude— {AFP} Commercially Exploited.

### **Rhapis**

^ *Rhapis excelsa* (Thunb.) A. Henry—

### **Roystonea** {AFP}

***Roystonea regia*** (Kunth) O.F. Cook— {AFP} State Endangered.

### **Sabal** {AFP}

1. Leaf blade nearly flat, weakly costapalmate, lacking filamentous fibers ... *S. minor*

1. Leaf blade with the midrib curved downward and sides folded upward, strongly costapalmate, with filamentous fibers [2]

2. Fruit 15.7-19 mm wide; seed 10-11 mm wide ... *S. miamiensis*

2. Fruit 8.1-15.1 mm wide; seed 5-10 mm wide [3]

3. Stem usually subterranean (rarely emergent and forming a discernible trunk); leaves 4-7; petiole 0.3-0.6 m long, 0.6-2.1 cm wide; hastula 1.6-3.3 cm long; leaf blade tips often acute and stiff; flowers borne on the secondary branches (not counting the main inflorescence axis) ... *S. etonia*

3. Stem emergent, usually forming a discernible trunk (sometimes barely emergent in south Florida); leaves (4)10-30; petiole 0.7-2 m long, 1.9-4 cm wide; hastula 5.3-18 cm long; leaf blade tips often attenuate and lax; flowers usually borne on the tertiary or quaternary branches (not counting the main inflorescence axis, sometimes on secondary branches on low plants in South Florida) ... *S. palmetto*

***Sabal etonia*** Swingle ex Nash— {AFP} Endemic.

***Sabal miamiensis*** Zona— {AFP} Endemic.

***Sabal minor*** (Jacq.) Pers.— {AFP}

***Sabal palmetto*** (Walter) Lodd. ex Schult. & Schult.f.— {AFP}

### Saribus {AFP}

\**Saribus rotundifolius* (Lam.)Blume— {AFP}

### Serenoa {AFP}

*Serenoa repens* (W.Bartram)Small— {AFP} Commercially Exploited.

### Syagrus {AFP}

\**Syagrus romanzoffiana* (Cham.)Glassman— {AFP}

### Thrinax {AFP}

*Thrinax radiata* Lodd. ex Schult. & Schult.f.— {AFP} State Endangered.

### Trachycarpus

^ *Trachycarpus fortunei* (Hook.)H.Wendl.—

### Veitchia

^ *Veitchia arecina* Becc.—

### Washingtonia {AFP}

\**Washingtonia robusta* H.Wendl.— {AFP}

### Wodyetia

^ *Wodyetia bifurcata* A.K.Irvine—

### Zombia

^ *Zombia antillarum* (Descourt.)L.H. Bailey—

## COMMELINALES

### COMMELINACEAE {AFP}

1. Inflorescence subtended by conspicuous spathaceous bracts, cupped or folded around the inflorescence base [2]
  1. Inflorescence bracts inconspicuous or inflorescence subtended by open, typical leaves [3]
  2. Spathaceous inflorescence bracts generally ovate, often strongly folded, distinctly dissimilar from cauline leaves; petals all blue, orange, or 2 blue and 1 white, clawed, blades sometimes unequal, blade of larger petals usually broadly ovate to suborbicular; 3 fertile stamens, 3 staminodes, filaments glabrous ... Commelina
  2. Spathaceous inflorescence bracts elongate, the base of the bract cupped at the base of the inflorescence, the bracts very similar to the cauline leaves; petals pink, purple, bluish-pink, bluish-purple, or white, not clawed or rarely so, equal, blade lanceolate, ovate, to broadly ovate; 6 fertile stamens, filaments usually bearded ... Tradescantia
  3. Sepals externally purplish, petaloid; anthers poricidal; seeds arillate ... Dichorisandra
  3. Sepal externally green, not petaloid; anthers dehiscent longitudinally; seeds not arillate [4]
  4. Flowers sessile or subsessile; ovary and capsule 2–3-locular ... Callisia
  4. Flowers distinctly pedicellate; ovary and capsule 3-locular [5]
  5. Petals white; fertile stamens 6, staminodes absent ... Gibasis pellucida
  5. Petals pale pink to dark pink; fertile stamens 2-3, staminodes 3-4 ... Murdannia

## Callisia {AFP}

1. Plants repent and mat-forming or stoloniferous; leaf blades not linear, 6-50 mm wide; petals white; filaments glabrous; [2]
1. Plants caespitose, solitary, or short-creeping; leaf blades linear, 1-15 mm wide; petals pale to dark pink; filaments bearded (*Cuthbertia*) [5]
2. Robust, stoloniferous plants; leaves 15-30 cm long ... *C. fragrans*
2. Weak, mat-forming plants; leaves 1-8.5 cm long [3]
3. Leaves 3-8 cm long; inflorescence many-branched, 8-25 cm long ... *C. multiflora*
3. Leaves 1-2(3.5) cm long; inflorescence simple to few-branched, 1-8 cm long [4]
4. Flowers distinctly pedicellate; petals conspicuous, 3-6 mm long; stamens 6; ovary and fruit 3-locular ... *C. cordifolia*
4. Flowers sessile or subsessile; petals inconspicuous, 2-3 mm long; stamens 0-6; ovary and fruit 2-locular ... *C. repens*
5. Distal leaf blades as wide as opened, flattened sheaths or wider, 4-15 mm wide; roots glabrous to sparsely puberulent ... *C. rosea*
5. Distal leaf blades much narrower than opened, flattened sheaths, 1-5 mm wide; roots various [6]
6. Plants caespitose, roots glabrous to sparsely puberulent; bracts often elongate, somewhat herbaceous, 2-14 mm long ... *C. graminea*
6. Plants mostly solitary or short-creeping, not caespitose or scarcely so, roots persistently woolly; bracts usually minute, scarious, 1-3(7) mm long ... *C. ornata*

***Callisia cordifolia*** (Sw.)E.S.Anderson & Woodson— {AFP}

\****Callisia fragrans*** (Lindl.)Woodson— {AFP}

***Callisia graminea*** (Small)G.C.Tucker— {AFP}

***Callisia ornata*** (Small)G.C.Tucker— {AFP} Endemic.

\****Callisia repens*** (Jacq.)L.— {AFP}

***Callisia rosea*** (Vent.)D.R.Hunt— {AFP}

## Commelina {AFP}

1. Margins of spathe free to the base [2]
1. Margins of spathe clearly united in the basal portion [5]
2. Spathes sometimes with whitish or pale green patches with contrasting, dark green veins; lower petal white or paler than others; capsule 2-locular; seeds rugose pitted-reticulate ... *C. communis*
2. Spathes without contrasting veins; all petals bluish and concolorous with others; capsule 3-locular; seeds reticulate or smooth to faintly alveolate [3]
3. Spathes not at all to slightly falcate; distal cyme usually vestigial (rarely well developed, 1-flowered); seeds smooth to faintly alveolate ... *C. caroliniana*
3. Spathes usually distinctly falcate; distal cyme in larger spathes usually well developed, 1-several-flowered; seeds reticulate [4]
4. Leaf blades 1.5-5(-8) × 0.5-1(-2.2) cm; medial anther connective with broad transverse violet band; capsules 5-seeded (occasionally less, by abortion) ... *C. diffusa* var. *diffusa*
4. Leaf blades 6-14 × 1-3.3 cm; medial anther connective without dark band; capsules typically 1-2-seeded ... *C. diffusa* var. *gigas*
5. Leaf sheaths often with red hairs; leaf blades (1)1.5-4(5) cm wide [6]
5. Leaf sheaths without red hairs; leaf; leaf blades 0.1-1.5 cm wide (rarely wider in FL material)

6. Main stems ascending to decumbent, repent or scrambling; leaf sheaths often red-pilose; leaf blades 1-11 cm long, 1.5-4(4.5) cm wide, 1.3-1.9 times as long as wide, the apex rounded to obtuse; spathes 0.5-2 cm long, pubescent; subterranean, cleistogamous flowers sometimes present ... *C. benghalensis*

6. Main stems erect to ascending; leaf sheaths with red hairs at summit; leaf blades 6-20 cm long, (1)1.5-3.5(5) cm wide, 4-6 times as long as wide, the apex acute to attenuate; spathes 1.5-3.5 cm long, glabrate; subterranean, cleistogamous flowers absent ... *C. virginica*

7. Roots stout, ca. 2 mm thick; leaf sheaths with auricles at summit; leaf blades 2.6-31 times as long as wide; spathes with or without patch of septate hairs; lower petal white, less than ½ the size of upper petals; locules all 1-seeded; seeds mostly smooth ... *C. erecta*

7. Roots thin, ca. 1 mm thick; leaf sheaths not auriculate; leaf blades 4-25 times as long as wide; lower petal white or blue to lilac or lavender, not or only slightly smaller than upper petals; spathes with patch of septate hairs; some locules usually 2-seeded; seeds smooth or reticulate [9]

8. Leaf blade 4-8 times as long as wide; spathe tip acute; upper petals blue; seeds smooth ... *C. forskaolii*

8. Leaf blade 7.5-25 times as long as wide; spathe tip acuminate; upper petals peach-colored to very pale orangeish; seeds reticulate ... *C. gambiae*

\**Commelina benghalensis* L.— {AFP}

\**Commelina caroliniana* Walter— {AFP}

\**Commelina communis* L.— {AFP}

\**Commelina diffusa* Burm.f. var. *diffusa*— {AFP}

\**Commelina diffusa* Burm.f. var. *gigas* (Small)Faden— {AFP}

*Commelina erecta* L.— {AFP}

\**Commelina forskaolii* Vahl— {AFP}

\**Commelina gambiae* C.B.Clarke— {AFP}

*Commelina virginica* L.— {AFP}

## Gibasis {AFP}

\**Gibasis pellucida* (M.Martens & Galeotti)D.R.Hunt— {AFP}

## Murdannia {AFP}

1. Leaf blades 1-4.5 times longer than wide; inflorescence usually with 2 or more persistent bracteoles, the flowers widely spaced and distant; flowers radially symmetrical with the petals evenly spaced; dark veins of petals conspicuous throughout ... *M. spirata* var. *parviflora*

1. Leaf blades 4-17 times longer than wide; inflorescence with 1 bracteole, without bracteoles, or these caducous, the flowers solitary or compact along the rachis; flowers radially or bilaterally symmetrical with the petals evenly spaced or not; veins of petals obscure or partly apparent near the base [2]

2. Inflorescence of 1 flower; flowers radially symmetrical with the petals evenly spaced; petals whitish towards the base and pinkish towards the apex; capsules (4-)5-9 mm long ... *M. keisak*

2. Inflorescence of 1-8 flowers; flowers bilaterally symmetrical with the petals not evenly spaced; petals fairly uniform in color; capsules 2.5-5 mm long ... *M. nudiflora*

\**Murdannia keisak* (Hassk.)Handel-Mazz.— {AFP}

\**Murdannia nudiflora* (L.)Brenan— {AFP}

\**Murdannia spirata* (L.)G.Brückn. var. *parviflora* Faden— {AFP}

## Tradescantia {AFP}

1. Stems prostrate to decumbent (rarely erect); sepals pilose, generally all keeled; filaments densely bearded at the base with long moniliform hairs; stigma punctate; embryotega inconspicuous (subg. Austrotradescantia) [2]
1. Stems prostrate, decumbent, to erect; sepals rarely keeled, if present keel restricted to the dorsal sepal; filaments glabrous to sparsely bearded at mid-length, rarely at the base or apex with short moniliform hairs; stigma truncate to capitulate or capitate to trilobate; embryotega with a conspicuous apicule [4]
2. Stems pilose; leaf blade lower surface often purple; petals white to dark pink ... T. cerinthoides
2. Stems glabrous; leaf blade lower surface green; petals white [3]
3. Leaves lanceolate-oblong to ovate-elliptic, 5-10 cm long, 2-3.5 cm wide; cyme pairs 2-4 per shoot; bracts, especially those of axillary inflorescences, usually reduced ... T. crassula
3. Leaves lanceolate-elliptic to ovate-lanceolate, to 2.5-5 cm long, 1-2 cm wide; cyme pairs usually 1-2 per shoot; bracts all or mostly foliaceous, occasionally reduced ... T. fluminensis
4. Roots thin and fibrous, rarely tuberous; leaf blade lower surface often strongly dark purple, upper surface sometimes variegated; inflorescence composed by the main florescence and generally 1-many coflorescences, peduncle bracts commonly present, cincinni bracts spathaceous; stamens subequal, connectives cordate to sagittate to linear-tapered, rarely rhomboid, anther sacs globose, rarely ellipsoid, pollen white; embryotega semilateral (subg. Campelia) [5]
4. Roots fleshy to tuberous; leaf blade lower surface green or purple, upper surface not variegated; inflorescence composed only by the main florescence, peduncle bracts never present, cincinni bracts leaf-like or reduced; stamens equal, connectives quadrangular to rectangular, rarely slightly rhomboid to slightly sagittate, anther sacs elliptic to curved, pollen yellow; embryotega dorsal [6]
5. Stems short, scarcely apparent; leaf blades 10-35 cm long, 3-5 cm wide ... T. spathacea
5. Stems trailing, elongate; leaf blades 3-9 cm long, 1.5-3 cm wide ... T. zebrina
6. Stems prostrate to decumbent; leaves lanceolate to ovate to rotund, rarely cylindrical, base obtuse to cordate; pedicel apically gibbous; stamens epipetalous, filaments glabrous or sparsely bearded; stigmatic papillae evenly distributed in the stigma (subg. Setcreasea) [7]
6. Stems erect; leaves linear to acicular, base truncate to rounded; pedicels apically non-gibbous; stamens free; filaments densely bearded; stigmatic papillae restricted to the margins of the stigma (subg. Tradescantia) [8]
7. Stems and leaves glabrous to sparsely pilose, often darkly purplish ... T. pallida
7. Stems and leaves densely woolly or floccose, usually green, sometimes purplish ... T. sillamontana
8. Distal leaf blades wider than opened, flattened sheaths ... T. subaspera
8. Distal leaf blades equal to or narrower than opened, flattened sheaths [9]
9. Sepals glabrous or with an apical tuft of eglandular hairs ... T. ohiensis
9. Sepals pilose, sometimes glandular [10]
10. Sepal usually uniformly eglandular-pilose, glandular hairs few and inconspicuous ... T. hirsutiflora
10. Sepals usually glandular-puberulent, glandular hairs usually numerous and conspicuous, often mixed with eglandular hairs, usually with an apical tuft of eglandular hairs ... T. roseolens

\**Tradescantia crassula* Link & Otto— {AFP}

\**Tradescantia fluminensis* Vell.— {AFP}

*Tradescantia hirsutiflora* Bush— {AFP} Panhandle.

*Tradescantia ohiensis* Raf.— {AFP}

^ *Tradescantia pallida* (Rose)D.R.Hunt— {AFP}

*Tradescantia roseolens* Small— {AFP} NE and central peninsula. Wilder et al. (2019) point out that many plants of Highlands Co. have few to no glandular hairs on the calyx.

\**Tradescantia spathacea* Sw.— {AFP}

*Tradescantia subaspera* Ker Gawl.— {AFP}

^ *Tradescantia zebrina* Bosse— {AFP}

## HAEMODORACEAE {AFP}

### Lachnanthes {AFP}

*Lachnanthes caroliana* (Lam.)Dandy— {AFP} Throughout (coastal plain). The epithet was originally spelled "caroliana" and according to IPNI it is not correctable to "caroliniana".

## PHILYDRACEAE

### Philydrum

^ *Philydrum lanuginosum* Banks ex Gaertn. —Cultivated.

## PONTEDERIACEAE {AFP}

1. Sessile leaves spirally-alternate, petiolate leaves when present non-pulvinate, blade membranous; inflorescence reduced to a solitary cincinnus; stamens (1-)3, staminodes sometimes present; septal nectaries absent; stigma unevenly trilobate ... Heteranthera

1. Sessile leaves distichously alternate, petiolate leaves always present and pulvinate, blade chartaceous to coriaceous; inflorescence a 2-many branched thyrse (rarely reduced to a solitary flower); stamens 6, staminodes absent; septal nectaries present (if absent, then flowers pedicellate and anthers poricidal); stigma capitate or trilobate, rarely trifid (*Pontederia* s.lat.) [2]

2. Ovary 1-locular by abortion, fertile locule 1-ovulate, placentation pendulous; fruit an achene, anthocarp hardened, ridges sinuate, toothed or echinate; seeds smooth (*Pontederia* subg. *Pontederia*) ... *Pontederia*

2. Ovary 3-locular, locules many-ovulate, placentation axial; fruit a capsule, anthocarp thin to thickened, if thickened ridges smooth; seeds longitudinally winged [3]

3. Stems erect, not stoloniferous; leaf blade base cordate; inflorescence paniculate (*Pontederia* subg. *Cabanisia*) ... *E. paniculata*

3. Stems trailing, often stoloniferous; leaf blade base rounded to truncate; inflorescence spicate [4]

4. Plants typically rooted in mud; sessile leaves alternate on elongate stem; inflated petioles absent; perianth limb lobe margins erose (*Pontederia* subg. *Eichhornia*) ... *E. azurea*

4. Plants typically free-floating or stranded; sessile leaves produced in rosette; petioles commonly inflated; perianth limb lobe margins entire (*Pontederia* subg. *Oshunae*) ... *E. crassipes*

### *Eichhornia* {AFP}

1. Stems erect, not stoloniferous; leaf blade base cordate; inflorescence paniculate (*Pontederia* subg. *Cabanisia*) ... *E. paniculata*

1. Stems trailing, often stoloniferous; leaf blade base rounded to truncate; inflorescence spicate [2]

2. Plants typically rooted in mud; sessile leaves alternate on elongate stem; inflated petioles absent; perianth limb lobe margins erose (*Pontederia* subg. *Eichhornia*) ... *E. azurea*

2. Plants typically free-floating or stranded; sessile leaves produced in rosette; petioles commonly inflated; perianth limb lobe margins entire (Pontederia subg. Oshunae) ... *E. crassipes*

\**Eichhornia azurea* (Sw.)Kunth— {AFP}

\**Eichhornia crassipes* (Mart.)Solms— {AFP}

\**Eichhornia paniculata* (Spreng.)Solms— {AFP}

### Heteranthera {AFP}

1. Plant with sessile, linear leaves; inflorescences 1-flowered; stamens equal; anthers coiling ...  
*H. dubia*

1. Plant with some leaves petiolate, the blade generally ovate to reniform or suborbicular; inflorescences of 1-8 flowers; stamens unequal; anthers not coiling [2]

2. Leaf blades ovate to elliptic, longer than wide, the base rounded to truncate, or subtly subcordate Inflorescences 1-flowered; perianth essentially actinomorphic ... *H. limosa*

2. Leaf blades reniform to suborbicular, the base cordate; inflorescences of 2-8 flowers; perianth zygomorphic ... *H. reniformis*

*Heteranthera dubia* (Jacq.)MacMill.— {AFP}

\**Heteranthera limosa* (Sw.)Willd.— {AFP}

*Heteranthera reniformis* Ruiz & Pav.— {AFP}

### Pontederia {AFP}

1. Leaf blade 1.4-4.5 times longer than wide, diaphanous when backlit, the upper side smooth to scabrous, the underside microscopically smooth (or with sparse or irregular faint pits); inflorescence bract (3)4.5-7 cm long; floral tube glabrate to pubescent at maturity ... *P. cordata* var. *cordata*

1. Leaf blade 2.5-10 times longer than wide, opaque when backlit, the upperside smooth, the underside microscopically evenly pitted (best seen with diffuse light); inflorescence bract 2-3.5 cm long; floral tube pubescence persistent ... *P. cordata* var. *lanceolata*

*Pontederia cordata* L.— {AFP}

## ZINGIBERALES

### CANNACEAE {AFP}

**Canna** {AFP} The staminodes are the larger, conspicuous, brightly colored parts of the flower.

1. Petaloid staminodes broadly ovate, free portion 1-2 times as long as wide; petals recurved to erect [2]

1. Petaloid staminodes narrowly elliptic, free portion 3-8 times as long as wide; petals erect [3]

2. Staminodes yellow; petals strongly recurved; fruit irregularly ellipsoid, 5-6 cm long, 4-4.5 cm wide; seeds brown, nearly globose, 6-6.5 mm long, 5-6 mm wide ... *C. flaccida*

2. Staminodes yellow, orange, to red, often a mixture of colors; petals erect to laxly recurved; usually sterile ... *C. ×hybrida*

3. Leaves glaucous; staminodes yellow; fruit globose to ellipsoid, 2-5 cm long, 2-4 cm wide; seeds brown, ovoid, 7-10 mm long, 6-8 mm wide ... *C. glauca*

3. Leaves not glaucous; staminodes usually red, sometimes yellow orange; fruit ellipsoid to nearly globose, 1.5-3 cm long, 1.5-2 cm wide; seeds black, globose to nearly globose, 5-8 mm long, 4-6.7 mm wide ... *C. indica*



***Canna flaccida*** Salisb.— {AFP}

^ *Canna ×generalis* L.H.Bailey— {AFP}

^ *Canna glauca* L.— {AFP}

^ *Canna ×hybrida* Rodigas—

^ *Canna indica* L.— {AFP}

## MARANTACEAE {AFP}

1. Petiole to 1 m long, exceeding the blade in length; leaf blade not variegated, to 60 cm long, to 40 cm wide; inflorescence to 3 m long; bracts deciduous; sepals persistent in fruit; generally of inundated habitats ... *Thalia geniculata*

1. Petiole usually <0.3 m long, usually shorter than the blade; leaf blade often strikingly variegated, usually <40 cm long, <20 cm wide; inflorescence usually <1 m long; bracts persistent or deciduous; sepals persistent or caducous in fruit; cultivated or sparingly naturalized [2]

2. Usually acaulescent, some taxa cauline; inflorescence usually simple; sepals usually persistent in fruit; outer staminodes (0)1 ... *Goeppertia*

2. Acaulescent or cauline; inflorescence simple or branched; sepals caducous or persistent in fruit; outer staminodes 2 [3]

3. Sepals persistent in fruit; corolla tube longer than wide ... *Maranta*

3. Sepals caducous in fruit; corolla tube longer to shorter than wide [4]

4. Acaulescent; inflorescence usually simple; corolla tube length subequal to longer than wide ... *Ctenanthe*

4. Caulescent; inflorescence usually branched; corolla tube width subequal to wider than long ... *Stromanthe*

### **Ctenanthe**

^ *Ctenanthe burle-marxii* H.Kenn.—

### **Goeppertia**

^ *Goeppertia insignis* (W.Bull ex W.E.Marshall)J.M.A.Braga et al.—

^ *Goeppertia makoyana* (É. Morren)Borchs. & S.Suárez —

^ *Goeppertia majestica* (Linden)Borchs. & S.Suárez —

^ *Goeppertia roseopicta* (Linden ex Lem.)Borchs. & S.Suárez—

^ *Goeppertia zebrina* (Sims)Nees—

### **Maranta** {AFP}

^ *Maranta arundinacea* L.— {AFP}

^ *Marantha leuconeura* É. Morren —

### **Stromanthe**

^ *Stromanthe thalia* (Vell.)J.M.A.Braga—

### **Thalia** {AFP}

***Thalia geniculata*** L.— {AFP}

## COSTACEAE {AFP}

1. Corolla open, the margin fimbriate to irregular dentate ... *Hellenia speciosa*

1. Corolla tubular, mostly entire ... *Costus*

### **Costus** {AFP}

- 1. Inflorescence bracts recurved to spreading, with red foliaceous appendages ... *C. comosus*
- 1. Inflorescence bracts strictly appressed or nearly so, lacking appendages (at least most) [2]
- 2. Inflorescence fusiform, the apex acute; bract margin pale and lacerate; leaf upper surface costa strigulose ... *C. pulverulentus*
- 2. Inflorescence cylindric, the apex rounded; bract margin not paler, entire to roughened; leaf upper surface costa strigulose or glabrous [3]
- 3. Leaf costa upper surface strigulose; inflorescence bracts as wide as long, pale greenish to pale orange-red; calyx 3-7 mm long ... *C. scaber*
- 3. Leaves glabrous; inflorescence bracts much wider than long, distal ones often lustrous red; calyx 6-9 mm long ... *C. woodsonii*

^ *Costus comosus* (Jacq.) Roscoe—

^ *Costus pulverulentus* C. Presl— {AFP}

^ *Costus scaber* Ruiz & Pav.—

^ *Costus woodsonii* Maas—

### **Hellenia**

^ *Hellenia speciosa* (J. Koenig) S. R. Dutta—

### **ZINGIBERACEAE** {AFP}

- 1. Aboveground stems and leaves evergreen; lateral staminodes absent or small, not petaloid; fruit indehiscent (Alpinieae) [2]
- 1. Aboveground stems and leaves usually dying back seasonally; lateral staminodes petaloid or not; fruit dehiscent [3]
- 2. Inflorescence paniculate with lateral cincinni, terminating the leafy stem ... *Alpinia*
- 2. Inflorescence capitate or spicate, basal, separate from the leafy stem ... *Etilingera*
- 3. Labellum connate to filament in elongate slender, arching tube containing the style, exerted above the flower and longer than the petals or labellum; ovary unilocular (Globbeae) ... *Globba*
- 3. Labellum (showy lower lip) not connate to filament, not exerted above flower, not longer than petals or the labellum; ovary 3-locular, sometimes incompletely so (Zingibereae) [4]
- 4. Leaves basal ... *Kaempferia*
- 4. Leaves cauline [5]
- 5. Inflorescence terminal or pseudoterminal on a leafy stem; filament linear; anther exerted ... *Hedychium*
- 5. Inflorescence basal, on a scaly stem, separate from the leafy stem; filament rectangular or nearly absent; anther enclosed in corolla [6]
- 6. Inflorescence bracts spreading to reflexed, ovate to narrowly ovate with an obtuse to rounded apex; lateral staminodes petaloid ... *Curcuma*
- 6. Inflorescence bracts imbricate, reniform to broadly ovate-orbicular with a broadly rounded (sometimes mucronate) apex; lateral staminodes absent or reduced to small teeth adnate to labellum ... *Zingiber*

### **Alpinia** {AFP}

- 1. Inflorescence bracts persistent and large, pink to red (sect. *Guillainia*) ... *A. purpurata*
- 1. Inflorescence ebracteate or the bracts small or caducous [2]

- 2. Bracteoles not enclosing flower buds; labellum <2 cm long (sect. *Alpinia*) ... *A. galanga*
- 2. Bracteoles enclosing flower buds; labellum >3 cm long (sect. *Catimbium*) [3]
- 3. Upper corolla lobe (atop labellum) narrowly elliptic to ligulate, about as wide as central longitudinal veins area on labellum; labellum margins whitish to pale yellow ... *A. calcarata*
- 3. Upper corolla lobe (atop labellum) broadly elliptic, about as wide as central reddish patch of labellum; labellum margins usually vibrant yellow ... *A. zerumbet*

^ *Alpinia calcarata* (Andrews) Roscoe—

^ *Alpinia galanga* (L.) Willd.—

^ *Alpinia purpurata* (Vieill.) K. Schum.—

^ *Alpinia zerumbet* (Pers.) B. L. Burtt & R. M. Sm.— {AFP}

### Curcuma {AFP}

- 1. Leaves with a conspicuous purplish or reddish patch along the midrib ... *C. picta*
- 1. Leaf blade generally uniformly green ... *C. zedoaria*

^ *Curcuma alismatifolia* Gagnep.—

^ *Curcuma longa* L.—

^ *Curcuma petiolata* Roxb.—

^ *Curcuma picta* Roxb. ex Škornick.— {AFP}

### Etilingera {AFP}

- 1. Inflorescence conic to cylindrical, the bracts narrowly ovate to ligulate, the basal bracts spreading to reflexed ... *E. elatior*
- 1. Inflorescence flat-topped obconic, the bracts very broadly ovate, the basal bracts recurved at the tip ... *E. corneri*

^ *Etilingera corneri* Mood & Ibrahim—

^ *Etilingera elatior* (Jack) R. M. Sm.—

### Globba {AFP}

^ *Globba schomburgkii* Hook. f.— {AFP}

### Hedychium {AFP}

- 1. Inflorescence bracts densely imbricate or overlapping, the rachis not visible; filament white to yellow or slightly pinkish [2]
- 1. Inflorescence elongate, the rachis plainly apparent; filament pink, dark pink, to red [3]
- 2. Upper, showy labellum and 2 lateral petaloid staminodes white, the staminodes broadly elliptic to obovate ... *H. coronarium*
- 2. Upper, showy labellum and 2 lateral petaloid staminodes pale yellow, the staminodes elliptic to oblanceolate ... *H. flavescens*
- 3. Labellum and petaloid staminodes orange to pinkish orange ... *H. coccineum*
- 3. Labellum and petaloid staminodes yellow ... *H. gardnerianum*

\* *Hedychium coronarium* J. Koenig— {AFP}

### Kaempferia {AFP}

^ *Kaempferia pulchra* Ridl.— {AFP}

## Zingiber {AFP}

1. Inflorescence bracts green, herbaceous ... *Z. officinale*
1. Inflorescence bracts pale yellow to red, youngest and distal ones often green, fleshy [2]
2. Inflorescence bracts open and gaping ... *Z. spectabile*
2. Inflorescence bracts tightly appressed ... *Z. zerumbet*

^ *Zingiber officinale* Roscoe—

^ *Zingiber spectabile* Griff.—

^ *Zingiber zerumbet* (L.) Sm.— {AFP}

## HELICONIACEAE {AFP}

1. Primary inflorescence bract usually brightly colored with orange to red colors; fruit fleshy ... Heliconiaceae
  1. Primary inflorescence bract somewhat dull, green, reddish, pinkish, bluish green, or purplish; fruit a woody capsule ... Strelitziaceae
- 
1. Inflorescence pendent, the primary (cincinnal) bract held above the flower ... *H. rostrata*
  1. Inflorescence erect, the primary (cincinnal) bract held below the flower [2]
  2. Primary (cincinnal) inflorescence bracts 4-6, open, not tightly enclosing the flower bases ... *H. psittacorum*
  2. Primary (cincinnal) inflorescence bracts 5-10, tightly folded or cupper around the flower bases [3]
  3. Primary (cincinnal) inflorescence bract orange, linear-lanceolate, long acuminate ... *H. latispatha*
  3. Primary (cincinnal) inflorescence bract red or reddish, ovate, acute to acuminate ... *H. bihai*

## Heliconia {AFP}

^ *Heliconia bihai* (L.) L.—

\* ***Heliconia latispatha*** Benth.— {AFP}

^ *Heliconia psittacorum* L.f.—

^ *Heliconia rostrata* Ruiz & Pav.—

## STRELITZIACEAE

1. Caulescent; overlapping petiole bases creating a distinct zigzag line; petiole to 4.5 m long, the base subentire, lacking a conspicuous brown split margin or this minimal and scarcely apparent; leaf blade to 2 m long, 1 m wide; inflorescence with (5)8-20 primary bracts, the bracts green; petals white, subequal, not connivent; seed aril blue ... *Ravenala madagascariensis*
  1. Caulescent or acaulescent; overlapping petiole bases with a short irregular zigzag line or the line not apparent; petiole to 1 m long, base subentire or roughened with a conspicuous erose and split brown margin to 1 cm wide; leaf blade to 1 m long, to 0.5 m wide; inflorescence with 1-4 primary bracts, the bracts green, reddish, pinkish, bluish green, or purplish; petals blue, purple, or white, unequal, posterior one scale-like; seed aril orange ... *Strelitzia*
- 
1. Acaulescent; leaf blades 10-50 cm long, 5-20 cm wide, not splitting from the margin to the midrib, or blades absent; sepals orange [2]
  1. Caulescent; leaf blades 50-100 cm long, 20-50 cm wide commonly splitting from the margin to the midrib; sepals white [3]

- 2. Leaves without a leaf blade or the blade extremely reduced ... *S. juncea*
- 2. Leaf blade 10-50 cm long, 5-20 cm wide ... *S. reginae*
- 3. Inflorescence simple; petals white ... *S. alba*
- 3. Inflorescence compound; petals blue ... *S. nicolai*

## Strelitzia

- ^ *Strelitzia alba* (L.f.) Skeels—
- ^ *Strelitzia nicolai* Regel & Körn.—
- ^ *Strelitzia reginae* Banks—

## MUSACEAE {AFP}

### Musa {AFP}

- 1. Plant suckering freely; pseudostems 1-3 m tall, rarely >10 cm wide at base; inflorescence erect [2]
- 1. Pseudostems (2)2.5-8 m tall, (6)10-30 cm wide at base; inflorescence pendulous [3]
- 2. Peduncle green; inflorescence bracts bright pink; ovary glabrous; fruit glabrous, 2.5-4 times longer than wide, green, yellow, pink, to red, ... *M. ornata*
- 2. Peduncle red; inflorescence bracts red to pinkish purple; ovary pubescent; fruit pubescent, 1.5-2 times longer than wide, red ... *M. velutina*
- 3. Petiole margin prominent, widening from 5 mm distally to 15 mm basally, spreading, not clasping pseudostem; peduncle pubescent or puberulent; fertile inflorescence bracts broadly ovate to suborbicular, externally pale yellow, yellowish green, to dull yellowish purple, internally pale yellow to yellowish green, often rolled or reflexed at the tip, often (1)2-4 open simultaneously; fruit 5-7 cm long ... *M. basjoo*
- 3. Petiole margin various; peduncle glabrous or pubescent; fertile inflorescence bracts lanceolate to broadly ovate, externally brownish purple, red, dull purple, to yellow, internally bright red, pink, dull purple, to yellow and fading uniformly or to yellow towards base, reflexing or not, 1-4 open simultaneously; fruit usually 7-15 cm long [4]
- 4. Hybrid of or intermediate between *M. acuminata* and *M. balbisiana* ... *M. ×paradisiaca*
- 4. Not intermediate [5]
- 5. Suckering moderately; pseudostem 3-8 m tall, (6)10-25 cm wide at base, mostly heavily marked with dark blotches; petiolar canal margin erect or spreading with serial wings basally, not clasping pseudostem; peduncle usually pubescent; fertile bracts externally red, dull purple, to yellow, internally pink, dull purple, to yellow and fading to yellow towards base, lanceolate to narrowly ovate, eventually reflexing and rolling back, widest point of bract usually in the proximal 3/10 or less of its length, apex acute, usually only 1 open at a time; bract scar prominent or tuberculate; pedicel to 1 cm long; male flower creamy white, the free tepal variably corrugated below apex; stigma orange to bright yellow; ovules in 2 regular rows per locule; fruit 8-13 cm long, 1.5-3 cm wide, subcylindric, pulp often edible; seeds dull black, often somewhat angular or flattened, 5-7 mm by 2-4 mm, minutely tuberculate to nearly smooth ... *M. acuminata*
- 5. Suckering freely; pseudostem 6-7 m tall, (7)10-30 cm wide at base, greenish with dark blotches in upper part; petiolar canal margin inclosed, not winged basally, clasping pseudostem; peduncle glabrous; bracts externally brownish purple, internally bright red and uniform upon fading, broadly ovate, not reflexing, widest point of bract usually beyond the proximal 3/10 of its length, apex obtuse, often (1)2-4 open simultaneously; bract scar scarcely prominent; pedicel 1-2 cm long; staminate flower variably flushed with pink, the free tepal rarely corrugated; stigma cream, pale yellow to pale pink; ovules in 4 irregular rows per locule;

fruit 7-15 cm long, 3-5 cm wide, angulate; seeds black, 5-6 mm by 4-5 mm, irregularly globose, minutely verrucose ... *M. balbisiana*

- ^ *Musa acuminata* Colla— {AFP}
- ^ *Musa balbisiana* Colla—
- ^ *Musa basjoo* Siebold ex Miq.—
- ^ *Musa ornata* Roxb.— {AFP}
- ^ *Musa ×paradisiaca* L.— {AFP}
- ^ *Musa velutina* H.Wendl. & Drude—

## MAGNOLIIDS

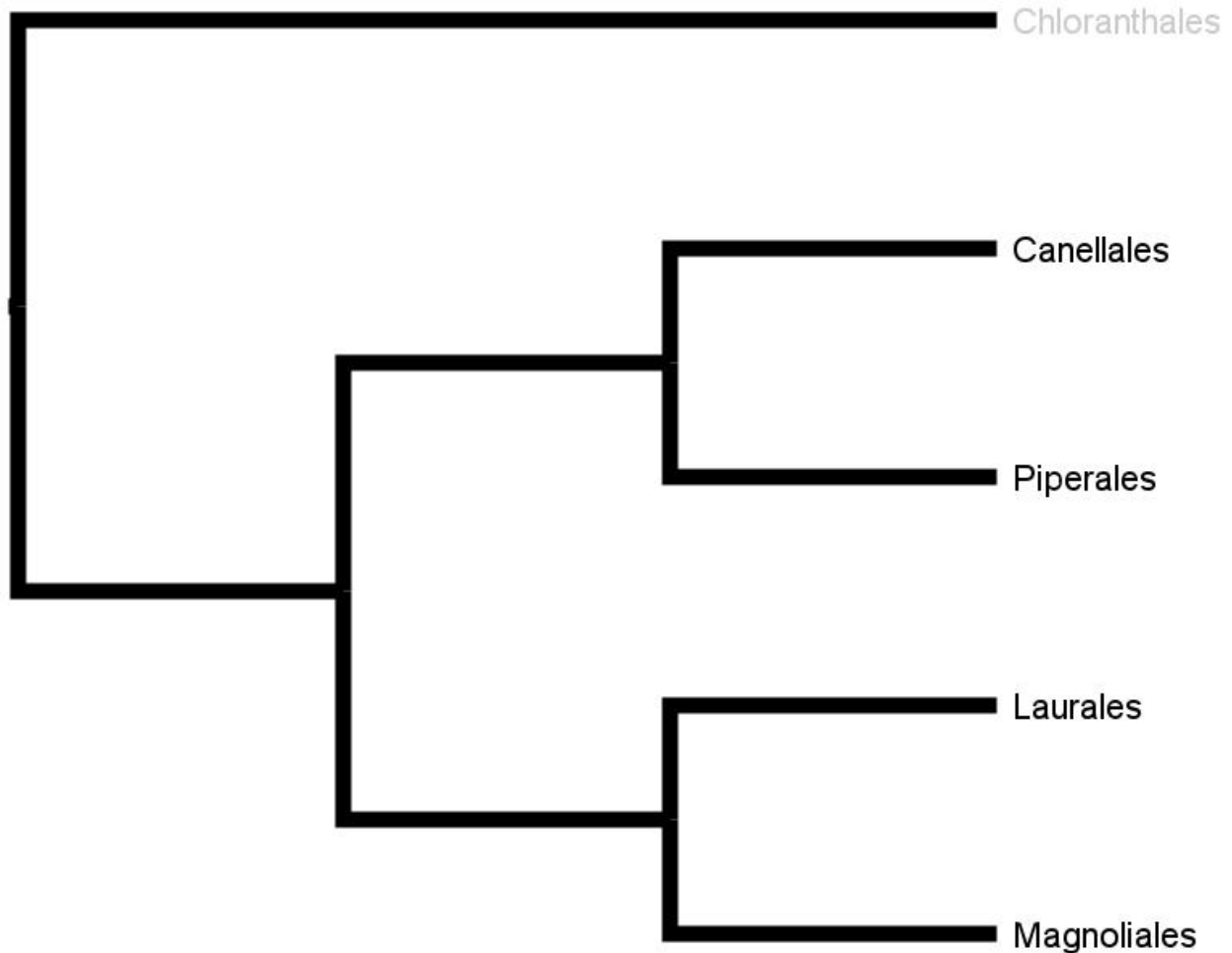


Figure: Estimated phylogeny of extant magnoliids. Black font=contains taxa native to Florida; Gray font=not native, not included.

## CANELLALES

CANELLACEAE {AFP}

*Canella* {AFP}

*Canella winterana* (L.) Gaertn.— {AFP} State Endangered.

## PIPERALES

### ARISTOLOCHIACEAE {AFP}

1. Herbs or vines with aerial, leafy stems; calyx zygomorphic (calyx is the prominent floral tissue; corolla absent); stamens 5-6 ... Aristolochia

1. Rhizomatous herbs without aerial stems; leaves all basal; calyx actinomorphic (calyx is the prominent floral tissue; corolla vestigial or absent); stamens 12 ... Asarum

### Aristolochia {AFP}

1. Erect to decumbent herb; inflorescence at the plant base, below the leaves ... A. serpentaria

1. Prostrate to climbing vine; inflorescence not at the plant base [2]

2. Leaf blade oblong to spatulate; inflorescence of several flowers ... A. maxima

2. Leaf blade cordate-ovate to cordate-reniform; flowers solitary [3]

3. Stem tomentose; leaf blade underside tomentose with prominent primary veins and conspicuous fine reticulate venation ... A. tomentosa

3. Stem glabrous to puberulent; leaf blade underside glabrous to puberulent with flat to scarcely prominent primary veins and obscure to conspicuous coarse reticulate venation [4]

4. Pseudostipules absent; leaf blades usually broadly lobed at the base, the inner pair of primary basal veins straight or nearly so (with side branches); calyx tube dilated at base (the calyx is the prominent floral tissue; the corolla is absent); calyx limb expanded on only 1 side; stamens 5 ... A. pentandra

4. Pseudostipules present or absent; leaf blades unlobed or scarcely lobed at the base, the inner pair of primary basal veins mostly sinuous, bent, or bifurcating; calyx tube dilated near the middle (the calyx is the prominent floral tissue; the corolla is absent); calyx limb expanded on all sides; stamens 6 [5]

5. Fresh leaf blade upper side with white veins, surfaces bordering the veins sometimes also white; calyx with prominent fimbriate projections on the margin ... A. fimbriata

5. Fresh leaf blade upper side with green or whitish veins; calyx without fimbria [6]

6. Leaf blades generally triangular in the distal half, the basal sinus at a broad to nearly right angle to the midrib; calyx limb 1-lobed ... A. elegans

6. Leaf blades generally rounded, the basal sinus at a narrow angle to nearly parallel with the midrib; calyx limb 2-lobed [7]

7. Upper calyx lobe suborbicular, narrowly clawed, pendent, deflected, ruffled ... A. labiata

7. Upper calyx lobe ovate-spatulate, broadly clawed, erect, not deflected, not ruffled ... A. ringens

\**Aristolochia elegans* Mast.— {AFP}

\**Aristolochia fimbriata* Cham.— {AFP}

\**Aristolochia labiata* Willd.— {AFP}

\**Aristolochia maxima* Jacq.— {AFP}

*Aristolochia pentandra* Jacq.— {AFP} State Endangered.

\**Aristolochia ringens* Vahl— {AFP}

*Aristolochia serpentaria* L.— {AFP}

*Aristolochia tomentosa* Sims— {AFP} State Endangered.

### Asarum {AFP}

1. Leaf blade triangular-sagittate to subhastate; sterile tip of the style 2-cleft to the stigma ... A. arifolium

1. Leaf blade cordate to subreniform; sterile tip of the style notched, the sinus not reaching the stigma ... *A. virginicum*

***Asarum arifolium*** Michx.— {AFP} State Threatened.

***Asarum virginicum*** L.— {AFP}

## PIPERACEAE {AFP}

1. Epiphytic or terrestrial herbs; stipules absent; floral bracts glabrous or gland-dotted; flowers bisexual; ovary 1-carpellate; stamens 2 ... *Peperomia*

1. Terrestrial vines, subshrubs, shrubs, to small trees; stipules present, enclosing young stem; floral bracts ciliate; flowers unisexual; ovary 2-4(5)-carpellate; stamens 2-4 ... *Piper*

### *Peperomia* {AFP}

1. Leaf blades less than 1.2(1.5) cm long and wide, generally orbicular ... *P. rotundifolia*

1. Larger leaf blades more than 1.5 cm long or wide, orbicular or not [2]

2. Stems strigose; leaves opposite or whorled (rarely alternate near the base) ... *P. humilis*

2. Stems glabrous; leaves alternate (sometimes opposite at the terminal flowering nodes) [3]

3. Leaves sessile or petiole to 3 mm, the blade auriculate at the base and somewhat clasping the stem ... *P. amplexicaulis*

3. Leaves petiolate, the petiole 3-30 mm long, the blade not clasping the stem [4]

4. Leaf blades broadest near or at the base, weak and membranaceous ... *P. pellucida*

4. Leaf blades usually broadest near the middle or above the middle, relatively stiff and succulent [5]

5. Leaf blades lanceolate, oblanceolate, to elliptic [6]

5. Leaf blades ovate, obovate, spatulate, to suborbicular [7]

6. Plant not glandular black-punctate (or minutely so); petiole slightly expanded and clasping at the base, decurrent in lines or wings along the stem; lateral veins of leaf blade impressed and conspicuous at least in the lower half ... *P. alata*

6. Plant conspicuously glandular black-punctate; petiole not or slightly expanded and clasping at the base, not decurrent; lateral veins of the leaf blade inconspicuous or faintly impressed ... *P. glabella*

7. Peduncle glabrous; fruit beak tapering smoothly from the broadened base to the acute apex, straight to gradually hooked from near the middle ... *P. magnoliifolia*

7. Peduncle with microscopic, spicule-like trichomes; fruit beak filiform above the conical base, abruptly hooked or curved at the apex ... *P. obtusifolia*

***Peperomia alata*** Ruiz & Pav.— {AFP} State Endangered.

\****Peperomia amplexicaulis*** (Sw.)A.Dietr.— {AFP} State Endangered.

***Peperomia glabella*** (Sw.)A.Dietr.— {AFP} State Endangered.

***Peperomia humilis*** A.Dietr.— {AFP} State Endangered.

***Peperomia magnoliifolia*** (Jacq.)A.Dietr.— {AFP} State Endangered.

***Peperomia obtusifolia*** (L.)A.Dietr.— {AFP} State Endangered.

\****Peperomia pellucida*** (L.)Kunth— {AFP}

***Peperomia rotundifolia*** (L.)Kunth— {AFP} State Endangered.

**Piper** {AFP} *Piper methysticum* Forst. is to be expected in cultivation, but otherwise no specimens are known and it is often confused with *P. auritum*.



1. Erect subshrubs, shrubs, to small trees; larger leaf blades 15-40 cm long [2]
1. Vines or weak subshrubs; larger leaf blades 5-13(15) cm long [5]
2. Leaf blade elliptic-lanceolate, obliquely rounded to cuneate at the base ... *P. aduncum*
2. Leaf blade ovate to orbicular, obliquely to evenly cordate at the base [3]
3. Leaf blade pinnately veined; with anise-like odor ... *P. auritum*
3. Leaf blade mostly palmately veined; without anise-like odor [4]
4. Stem and petiole glabrate; leaf blade palmately veined, the base of the inner veins often appressed to the midvein; inflorescence of a solitary spike opposite of the leaf ... *P. methysticum*
4. Stem and petiole pubescent; leaf blade usually palmate-pinnately veined, with 2 or more major veins arising from along the midrib; inflorescence of several spikes and axillary ... *P. umbellatum*
5. Leaf blade upper side strongly lustrous with impressed cross-veins; inflorescence erect ... *P. sarmentosum*
5. Leaf blade upper side dull to weakly lustrous, the cross-veins not impressed or weakly so; inflorescence pendulous ... [6]
6. Dioecious; leaf blade base cordate; inflorescence unisexual; infructescence 3-5(7) cm long; fruit embedded in rachis ... *P. betle*
6. Monoecious; leaf blade base rounded to cuneate; inflorescence bisexual; infructescence (5)7-10 cm long; fruit not embedded in rachis ... *P. nigrum*

\**Piper aduncum* L.— {AFP}

\**Piper auritum* Kunth— {AFP}

^ *Piper betle* L.—

^ *Piper nigrum* L.—

\**Piper sarmentosum* Roxb.— {AFP}

\**Piper umbellatum* L.— {AFP}

## SAURURACEAE {AFP}

1. Leaf blades 0.8-1.4 times longer than wide, the reticulate venation obscure on the underside; inflorescence 1-3 cm long, subtended by involucre bracts; fruit a capsule ...

*Houttuynia cordata*

1. Leaf blades 1.7-2.3 times longer than wide, the reticulate venation conspicuous on the underside; inflorescence 5-35 cm long, without involucre bracts; fruit a schizocarp ... *Saururus cernuus*

*Houttuynia* {AFP}

\**Houttuynia cordata* Thunb.— {AFP}

*Saururus* {AFP}

*Saururus cernuus* L.— {AFP}

## LAURALES

CALYCANTHACEAE {AFP}

*Calycanthus* {AFP}

*Calycanthus floridus* L.— {AFP} State Endangered.

LAURACEAE {AFP}

1. Parasitic vine; stems often orange to pale green-yellow, with haustoria, essentially leafless with minute scales (ca. 1 mm) ... *Cassytha filiformis*
1. Shrubs or trees; stems generally greenish to gray, with evident sizeable leaves, without haustoria [2]
2. Leaf blade basal lateral veins fairly pronounced and subparallel with the blade margin, usually reaching mid-blade or extending to near the apex [3]
2. Leaf blade basal lateral veins generally not pronounced, spreading or if subparallel to the blade margin then usually not reaching mid-blade [5]
3. Young stems and leaves pubescent; leaves deciduous, often at least some leaf blades lobed; flowers emerging before leaves or with emerging leaves ... *Sassafras albidum*
3. Young stems and leaves glabrate or sericeous or the domatia pubescent; leaves persistent, the blades unlobed; flowers emerging with mature leaves [4]
4. Buds scaly; leaf blade pinninerved to subtriplinerved with the distal lateral veins nearly as pronounced as the basal ones, often glaucous, with domatia in the basal leaf axils of the lower surface, with the smell of camphor when crushed ... *Camphora officinarum*
- 4 Buds naked or scales indistinct; leaf blades trinerved to triplinerved with the two basal lateral veins arising from at or near the base pronounced (any distal lateral veins much less pronounced), not glaucous, without domatia on the lower surface, with a cinnamon-like smell when crushed ... *Cinnamomum*
5. Dioecious shrubs or small trees to 5 m; leaves deciduous; flowers unisexual [6]
5. Monoecious shrubs or trees to 20 m; leaves persistent; flowers bisexual [7]
6. Leaf blade 0.5-1 cm wide; inflorescence with 1-5 flowers; anthers 4-locular ... *Litsea aestivalis*
6. Leaf blade 1.5-5 cm wide; inflorescence with 1-20 flowers; anthers 2-locular ... *Lindera*
7. Young stems and leaf blade lower surface pubescent or sericeous ... *Persea*
7. Young stems and leaf blade glabrous or glabrate [8]
8. Bark gray, smooth; leaf blade upper surface with visible and conspicuous reticulate venation, acute or gradually acuminate at the tip, crushed odor mildly pungent; fertile stamens 9; anthers 4-locular; fruit 1-2 cm long, subtended by a cupule with a single margin or an inconspicuous double margin ... *Damburneya coriacea*
8. Bark brown, papillate-granular from the lenticels; leaf blade upper surface with inconspicuous or obscure reticulate venation, abruptly to gradually acuminate at the tip, crushed odor faintly aromatic; fertile stamens 3; anthers 2-locular; fruit 2-3 cm long, subtended by a cupule with an evident double margin, the basal margin often flared ... *Licaria triandra*

## Camphora

\**Camphora officinarum* Nees— {AFP}

## Cassytha {AFP}

*Cassytha filiformis* L.— {AFP}

## Cinnamomum {AFP}

1. Leaf blade ovate to lanceolate, basal lateral veins evanescent in the distal half, the blade apex acuminate ... *C. burmannii*
1. Leaf blade elliptic to oblong, basal lateral veins pronounced and distinct nearly to the tip, the blade apex obtuse to acute ... *C. iners*

\**Cinnamomum burmanni* (Nees & T.Nees)Blume— {AFP}

\**Cinnamomum iners* Reinw. ex Blume— {AFP}

## Damburneya {AFP}

**Damburneya coriacea** (Sw.)Trofimov & Rohwer— {AFP}

## Licaria {AFP}

**Licaria triandra** (Sw.)Kosterm.— {AFP} State Endangered. Miami-Dade Co., Brickell Hammock.

## Lindera {AFP}

1. Leaf blade somewhat leathery, broadly rounded to obtuse at the tip, larger blades usually <8 cm long and <4 cm wide, young leaves faintly aromatic when crushed, becoming essentially odorless with age ... *L. subcoriacea*

1. Leaf blade membranous, acute to acuminate at the tip, larger blades usually >8 cm long and >4 cm long, crushed leaves strongly aromatic throughout growing season [2]

2. Shrubs or small trees, usually taller than 1 m; leaves horizontal to mostly ascending, the blade obovate, base cuneate, apex acuminate on larger leaves; fruiting pedicels of previous season not persistent on stem, not conspicuously enlarged at apex ... *L. benzoin*

2. Low shrubs rarely over 1.5 m tall; leaves drooping, the blade elliptic to ovate, base rounded to widely cuneate, apex acute; fruiting pedicels of previous season persistent on stem, enlarged at apex ... *L. melissifolia*

**Lindera benzoin** (L.)Blume— {AFP}

**Lindera melissifolia** (Walter)Blume— {AFP} Federally Endangered. State Endangered.

**Lindera subcoriacea** Wofford— {AFP} State Endangered.

## Litsea {AFP}

**Litsea aestivalis** (L.)Fernald— {AFP} State Endangered.

## Persea {AFP}

1. Leaf blade to 30 cm long, to 19 cm wide; calyx deciduous in fruit; fruit 5-15 cm long; seed 3-6 cm long ... *P. americana*

1. Leaf blade to 15 cm long, to 6 cm wide; calyx persistent in fruit; fruit 0.6-1.5 cm long; seed 0.6-1.2 cm long [2]

2. Leaf blade underside with erect, ascending, to loosely spreading trichomes (not straight and not tightly appressed, not subparallel); peduncles 1-7 cm long; fruit 6-10 mm wide or long; generally of mesic-hydric to flood-prone sites ... *P. palustris*

2. Leaf blade underside sericeous with straight, tightly appressed and nearly parallel trichomes; peduncles 0.5-3 cm long; fruit 8-12 mm wide or long; generally of mesic-xeric to xeric sites of well-drained sand [3]

3. Leaf blade underside white-sericeous; fruit 8-11 mm wide or long; generally of mesic to xeric sites ... *P. borbonia* var. *borbonia*

3. Leaf blade underside rusty or coppery-sericeous; fruit 10-12 mm wide or long; restricted to xeric sites ... *P. borbonia* var. *humilis*

^ *Persea americana* Mill.— {AFP}

**Persea borbonia** (L.)Spreng. var. **humilis** (Nash)L.E.Kopp— {AFP} Endemic.

**Persea borbonia** (L.)Spreng. var. **borbonia**— {AFP}

**Persea palustris** (Raf.)Sarg.— {AFP}

## Sassafras {AFP}

*Sassafras albidum* (Nutt.) Nees— {AFP}

## MAGNOLIALES

### ANNONACEAE {AFP}

1. Shrubs to small trees; petiole 0-7(10) mm long, sometimes indistinct; carpels 2-18, free, the fruit a simple berry [2]

1. Trees; petiole (5)7-18 mm long, distinct; carpels free or coalesced [3]

2. Leaf base acute to attenuate; petals 15-80 mm long; fruit oblong, 30-100 mm long, yellow-green ... *Asimina*

2. Leaf base rounded-truncate to acute; petals 3-6 mm long; fruit subglobose, 4-5 mm long, purple ... *Polyalthia*

3. Carpels 20+, coalescent into an aggregate syncarp ... *Annona*

3. Carpels 2-18, free, the fruit a simple berry ... *Cananga*

### *Annona* {AFP}

1. Leaves glabrous, or ephemerally sparsely pubescent; petals 6, ovate, these broad and conspicuous [2]

1. Leaves usually pubescent, at least when young; petals 3, oblong or lance-oblong, or 6 with the 3 inner to 3 mm long [4]

2. Leaf blade upper side often with distinct, discoloured reticulate venation, the lower side lacking domatia in the vein axils; petals usually with red coloration on the interior; inner petals valvate; fruit smooth ... *A. glabra*

2. Leaf blade upper side with indistinct or concolorous reticulate venation, the lower side with cavernous domatia in the vein axils; petals lacking red coloration; inner petals imbricate; fruit scaly, the scales with erect or spreading, acute or hardened tips [3]

3. Fruit pulp yellowish or orangish; seeds usually brown ... *A. montana*

3. Fruit pulp whitish; seeds brown to blackish ... *A. muricata*

4. Fruit with distinct, bulging segments individually separable ... *A. squamosa*

4. Fruit smooth, without separable segments [5]

5. Leaf blade lower side pubescent ... *A. cherimola*

5. Leaf blade lower side glabrate ... *A. reticulata*

^ *Annona cherimola* Mill.—

***Annona glabra*** L.— {AFP}

^ *Annona montana* Macfad.— Sparingly naturalized.

^ *Annona muricata* L.—

^ *Annona reticulata* L.—

^ *Annona squamosa* L.— {AFP} Sparingly naturalized.

***Asimina*** {AFP}: The taxa of *Deeringothamnus* are derived within the *Asimina* lineage (Fonseca et al. 2024).

1. Leaf blade chartaceous, often abruptly narrowed to an acuminate or acute tip, the larger blades 4-10 cm wide; inner and outer petals usually similar in shape, texture, and color, usually both uniformly maroon throughout; outer petals 1-2.5 cm long [2]

1. Leaf blade coriaceous, not abruptly narrowed, the tip rounded or acute, the larger blades 1-5 cm wide; inner and outer petals often dissimilar in shape, texture, or color, usually not both

- uniformly maroon, or if the petals similar then white, yellow, to pink; outer petals 1.5-7 cm long [3]
2. Plant 1.5-6 m tall with a trunk to 10 cm wide; larger leaf blades 4-6.5 cm wide; peduncle <1 cm long at anthesis; fruit 3-6(7) cm long; seeds 1-1.5(2) cm long ... *A. parviflora*
2. Plant 1.5-11(14) m tall with a trunk to 30 cm wide; larger leaf blades 5-10 cm wide; peduncle >0.9 cm long at anthesis; fruit 5-15 cm long; seeds 1.5-2.5 cm long ... *A. triloba*
3. Flowers usually from nodes of previous year's growth, emerging before or with the leaves [4]
3. Flowers usually from shoots of current year's growth, emerging after some leaves are full-sized or nearly so [5]
4. Stems and leaves with pale, blonde to tan pubescence, often dense, glabrate on older tissue; larger leaf blades mostly >2.2 cm wide, upperside generally not glaucous and the venation generally apparent, secondary veins of the underside often drying pale blonde to tan; inner petals yellow-white with deep yellow corrugate base ... *A. incana*
4. Stems and leaves with some reddish to orange-tan pubescence; leaf blades <2.2 cm wide, upperside often glaucous bluish green obscuring the venation, secondary veins of the underside often drying brown-red; inner petals white or yellowish white, rarely pink or cherry red, mostly with deep maroon to purple corrugate base ... *A. reticulata*
5. New shoots, petiole, lower surface of leaf blade along veins, and peduncle with dense, bright red hairs; flowers terminal, often on lateral branchlets ... *A. obovata*
5. New shoots, petiole, lower surface of leaf blade, and peduncle glabrous to sparsely red-hairy; flowers axillary on primary stems, rarely terminal on lateral branchlets [6]
6. Mature plants less than 40 cm tall [7]
6. Mature plants 80-300 cm tall [9]
7. Larger leaf blades 6-10 cm long, secondary veins more pronounced than reticulate veins; peduncular bracts or bracteoles present; inner and outer petals usually with maroon colors, dissimilar in shape, size, or texture ... *A. pygmea*
7. Leaf blades 2-5(7) cm long, reticulate veins as pronounced as secondary veins or nearly so; peduncular bracts absent; inner and outer petals white to yellow, similar in shape, color, and texture [8]
8. Petals 6-12(15), ascending to apically recurved, white to pink, linear or narrowly oblong, 2-3 cm long, ca. 2 mm wide ... *A. pulchella*
8. Petals usually 6, erect or slightly spreading, canary yellow, broadly to narrowly elliptic to ovate, ca. 1.5 cm long, ca. 3-4 mm wide ... *A. rugelii*
9. Outer petals 1-3.5 cm long, cream-yellow to reddish or maroon; inner petals maroon, rarely green or white [10]
9. Outer petals 4-8 cm long, uniformly white (rarely pink), sometimes with a few purplish streaks near the base; inner petals usually white, rarely uniformly pink or red-purple [11]
10. Leaf blades 8-20 times longer than wide, often canaliculate ... *A. manasota*
10. Leaf blades 2-8 times longer than wide, usually flat ... *A. tetramera*
11. Primary stems erect to ascendent; leaf blades 8-20 times longer than wide ... *A. angustifolia*
11. Primary stems weakly to strongly arching; leaf blades 6-10 times longer than wide ... *A. spatulata*

***Asimina angustifolia*** Raf.— {AFP}

***Asimina* × *bethanyensis*** DeLaney— {AFP} Endemic.

***Asimina* × *colorata*** DeLaney— {AFP} Endemic.

***Asimina incana*** (W.Bartram)Exell— {AFP}

***Asimina* × *kralii*** Delaney— {AFP} Endemic.

***Asimina manasota*** DeLaney— {AFP} Endemic.

***Asimina* × *nashii*** Kral— {AFP}

***Asimina* × *oboreticulata*** DeLaney— {AFP} Endemic.

***Asimina obovata*** (Willd.)Nash— {AFP} Endemic.

***Asimina parviflora*** (Michx.)Dunal— {AFP}

***Asimina* × *peninsularis*** DeLaney— {AFP} Endemic.

***Asimina pulchella*** (Small)Rehder & Dayton— {AFP} Endemic. Federally Endangered. State Endangered.

***Asimina pygmea*** (W.Bartram)Dunal— {AFP}

***Asimina reticulata*** Shuttlew. ex Chapm.— {AFP}

***Asimina rugelii*** B.L.Rob.— {AFP} Endemic. Federally Endangered. State Endangered.

***Asimina spatulata*** (Kral)D.B.Ward— {AFP}

***Asimina tetramera*** Small— {AFP} Endemic. Federally Endangered. State Endangered.

***Asimina triloba*** (L.)Dunal— {AFP}

## Cananga

^ *Cananga odorata* (Lam.)Hook.f. & Thomson—

## Polyalthia {AFP}

\****Polyalthia suberosa*** (Roxb.)Thwaites— {AFP}

## MAGNOLIACEAE {AFP}

1. Leaf blade 4- to 6-lobed, truncate-emarginate at the apex; fruit an aggregate of samaras ... Liriodendron

1. Leaf blade unlobed, rounded to acute at the apex; fruit an aggregate of follicles ... Magnolia

## Liriodendron {AFP}

***Liriodendron tulipifera*** L.— {AFP}

## Magnolia {AFP}

1. Leaf blade auriculate, cordate, to truncate at the base [2]

1. Leaf blade acute to rounded at the base [3]

2. Foliar buds, twigs, and follicles pubescent; leaf blade lower surface chalky white (sometimes pale green to glaucous), pubescent ... *M. macrophylla* var. *ashei*

2. Foliar buds, twigs, and follicles glabrous; leaf blade lower surface green or glaucous, glabrous ... *M. pyramidata*

3. Leaf blade 2-5.5(6) cm wide, the lower surface chalky white to glaucous, glabrous or silky-pubescent ... *M. virginiana*

3. Leaf blade 4.5-20 cm wide, the lower surface whitish-glaucous, green, to red-brown, glabrous, felted, or pilose [4]

4. Trees evergreen; leaf blade thick-leathery, the lower surface glabrous or red-brown felted, the upper surface lustrous green; flowers 15–30(–45) cm wide, strongly lemony fragrant ... *M. grandiflora*

4. Trees deciduous; leaf blade thin, not leathery, abaxially pale green to whitish, glabrous or pilose, adaxially green; flowers 5.5–11cm across, malodorous or aromatic [5]

5. Leaves not in whorl-like clusters; leaf blade cuneate to broadly rounded-truncate at the base; flowers pleasantly aromatic; tepals greenish, glaucous, occasionally yellow to orange-yellow, usually less than 8 cm long, erect, outermost tepals reflexed, greenish; follicles 2–7 long, 0.8–2.7 cm wide; follicles short-beaked ... *M. acuminata*

5. Leaves usually in terminal whorl-like clusters; leaf blade cuneate to attenuate at the base; flowers malodorous; tepals creamy white, 8–12(-16) cm long, spreading, outermost tepals reflexed, greenish; follicles 6–10 long, 2–3.5 cm wide; follicles long-beaked ... *M. tripetala*

***Magnolia acuminata*** (L.)L.— {AFP} State Endangered.

^ *Magnolia figo* (Lour.)DC.—

***Magnolia grandiflora*** L.— {AFP}

***Magnolia ashei*** Weath.— {AFP} Endemic. State Endangered.

***Magnolia pyramidata*** W.Bartram— {AFP} State Endangered.

^ *Magnolia × soulangeana* Soul.Bod.—

***Magnolia tripetala*** (L.)L.— {AFP} State Endangered.

***Magnolia virginiana*** L.— {AFP}

## EUDICOTS RANUNCULALES

### LARDIZABALACEAE {AFP}

#### ***Akebia*** {AFP}

^ *Akebia quinata* (Houtt.)Decne.— {AFP}

### PAPAVERACEAE {AFP}

1. Leaves compound; flowers zygomorphic [2]

1. Leaves simple; flowers actinomorphic [3]

2. Corolla yellow; fruit elongate, several-seeded, dehiscent; seed with an elaiosome ... *Corydalis*

2. Corolla white, pink, to purple; fruit spherical, 1-seeded, indehiscent; seed without an elaiosome ... *Fumaria*

3. Leaf blades with prickles; fruit an apically 3- to 7- valvate capsule ... *Argemone*

3. Leaf blades without prickles; fruit not an apically 3- to 7- valvate capsule [4]

4. Plant annual, caulescent; leaf blade pinnately veined and often pinnately lobed or toothed; stigmas several from a sessile disc; fruit an apically 5- to 18-portal capsule ... *Papaver*

4. Plant perennial, rhizomatous, acaulescent; leaf blade palmately veined and palmately lobed; stigma 1, on a short style; fruit a basally 2-valvate capsule ... *Sanguinaria*

#### ***Argemone*** {AFP}

1. Leaves with the prickles typically spaced 2-8 mm apart, the leaves often appearing markedly towards the flowers; pedicel 1-35 mm long; petals white, 3-4.5 cm long; stamens 80-160 ... *A. albiflora*

1. Leaves with the prickles typically spaced 5-15 mm apart, the leaves often only mildly reduced towards the flowers; pedicel 0-3.5 mm long; petals yellow, 2-3 cm long; stamens 25-50 ... *A. mexicana*

***Argemone albiflora*** Hornem.— {AFP}

***Argemone mexicana*** L.— {AFP}

#### ***Corydalis*** {AFP}

1. Spurred petal 7–9 mm long, spur incurved and ca. 2 mm long; fruit pendent, the pedicels 6-18 mm long ... *C. flavula*

1. Spurred petal typically 10–22 mm long, spur mostly straight and ca. 4–8 mm long; fruit erect, the pedicels 2–6 mm long ... *C. micrantha* subsp. *australis*

***Corydalis flavula*** (Raf.)DC.— {AFP}

***Corydalis micrantha*** (Engelm.ex A.Gray)A.Gray subsp. ***australis*** (Chapm.)G.B.Ownbey— {AFP}

**Fumaria** {AFP}

1. Pedicels arcuate-recurved in fruit; corolla 9–14 mm long ... *F. capreolata*

1. Pedicels straight and spreading to ascending in fruit; corolla 5–9.5 mm long [2]

2. Corolla 6–9.5 mm long, dark pink with purplish tips; raceme pedunculate ... *F. officinalis*

2. Corolla 5–6 mm long, white to pale pink; raceme sessile to subsessile ... *F. parviflora*

\****Fumaria capreolata*** L.— {AFP}

\****Fumaria officinalis*** L.— {AFP}

\****Fumaria parviflora*** Lam.— {AFP}

**Papaver** {AFP}

1. Upper cauline leaves not clasping stem; anthers bluish, filaments purple; fruit sessile to substipitate, obscurely ribbed, to 2 cm long ... *P. rhoeas*

1. Upper cauline leaves clasping stem; anthers pale yellow, filament white; fruit stipitate, unribbed, to 9 cm long ... *P. somniferum*

^***Papaver rhoeas*** L.— {AFP}

^***Papaver somniferum*** L.— {AFP}

**Sanguinaria** {AFP}

***Sanguinaria canadensis*** L.— {AFP}

**MENISPERMACEAE** {AFP}

1. Shrubs, glabrous ... *Pachygone laurifolius*

1. Vines, glabrous to pubescent [2]

2. Leaves peltate (at least some, sometimes only 1 mm of blade tissue surrounding the petiole), the blade with 7–9 primary veins arising from the petiole point of attachment, the lower surface glabrate; stamens 12–36 ... *Menispermum canadense*

2. Leaves usually not peltate, the blade with 3–7 primary veins at the blade base, the lower surface usually puberulent, pilose, to tomentose (at least on the veins); stamens 4–12 [3]

3. Leaf blade reniform to orbicular; inflorescence with foliaceous bracts 3–15 mm long; pistillate sepal 1, petal 1, pistil 1; staminate sepals 4, petals 4, connate, stamen filaments fused, anthers 1-locular; fruit pubescent ... *Cissampelos pareira*

3. Leaf blade ovate, cordate, or lobed; inflorescence with minute, scale-like bracts to 1.5 mm long; pistillate and staminate sepals 6–9, petals distinct when present, stamen filaments distinct, anthers 2–4-locular, pistils 2–6; fruit glabrous [4]

4. Leaf blades obscurely to deeply lobed, the lobe tip obtuse to acuminate; petals absent or vestigial; stamens 12; carpels 3; fruit ca. 20 mm long, the endocarp hollow on the upper side and cup-shaped ... *Calycocarpum lyonii*

4. Leaf blade unlobed to obscurely lobed, the lobe tips rounded to obtuse; petals 6; stamens 6; carpels 6; fruit 6–8 mm long, the endocarp laterally flattened and coiled ... *Nephroia carolinus*



## **Calycocarpum** {AFP}

*Calycocarpum lyonii* (Pursh) A. Gray— {AFP}

## **Cissampelos** {AFP}

*Cissampelos pareira* L.— {AFP} State Endangered.

## **Menispermum** {AFP}

*Menispermum canadense* L.— {AFP}

## **Nepthoia** {AFP}

*Nepthoia carolinus* (L.) L. Lian & Wei Wang— {AFP}

## **Pachygone**

^ *Pachygone laurifolia* (DC.) L. Lian & Wei Wang—

## **BERBERIDACEAE** {AFP}

1. Rhizomatous, acaulescent herb; leaves peltate, simple; flower solitary ... *Podophyllum peltatum*

1. Erect shrub; leaves compound, not peltate; inflorescence with multiple flowers [2]

2. Leaves pinnately compound, the leaflets with stiff prickles; inflorescence racemose; sepals and petals yellow ... *Mahonia bealei*

2. Leaves 2- to 3-pinnately compound, the leaflets entire; inflorescence paniculate; sepals and petals white ... *Nandina domestica*

## **Mahonia** {AFP}

^ *Mahonia bealei* (Fortune) Carrière— {AFP}

## **Nandina** {AFP}

\* *Nandina domestica* Thunb.— {AFP}

## **Podophyllum** {AFP}

*Podophyllum peltatum* L.— {AFP} State Endangered.

## **RANUNCULACEAE** {AFP}

1. Herbs or vines; leaves opposite ... *Clematis*

1. Herbs or shrubs; leaves alternate, sometimes pseudowhorled or basal [2]

2. Acaulescent; leaves all basal; inflorescence basal with foliaceous bracts dissimilar to the leaves ... *Anemone*

2. Caulescent; some leaves cauline; inflorescence cauline [3]

3. Shrub (but sometimes unbranched aboveground); all leaves crowded in a pseudowhorl at the stem apex ... *Xanthorhiza simplicissima*

3. Herb; at least some leaves distant, not all leaves crowded at stem apex [4]

4. Leaves regularly divided into linear lobes 1-2 mm wide; flowers zygomorphic ... *Delphinium*

4. Leaves simple or compound, if lobed the lobes >2 mm wide and not linear; flowers actinomorphic [5]

- 5. Leaves compound and the leaflets with numerous acute-tipped teeth; fruit a berry ... *Actaea pachypoda*
- 5. Leaves simple or compound, if compound the leaflets entire or with few rounded teeth; fruit not a berry [6]
- 6. Leaves simple (sometimes deeply divided), trifoliolate, or palmately once-compound; sepals green; petals yellow to white, unspurred ... *Ranunculus*
- 6. Leaves compound, at least some 2- to 3-compound; sepals green, yellow, pink, red, to white; petals absent or yellow with a red spur [7]
- 7. Leaflets entire or coarsely and shallowly lobed, the sinuses  $\frac{1}{3}$  or less the length of the leaflet; fruit an achene ... *Thalictrum*
- 7. Leaflets usually lobed, many with sinuses  $\frac{1}{2}$  or more the length of the leaflet; fruit a follicle [8]
- 8. Leaflets eglandular; flowers pendent; sepals 5, red or greenish; petals 5, yellow to yellow-green with a red spur ... *Aquilegia canadensis*
- 8. Leaflets glandular-apiculate; flowers spreading to erect; sepals 5, white; petals absent ... *Enemion biternatum*

### **Actaea** {AFP}

***Actaea pachypoda*** Elliott— {AFP} State Endangered.

### **Anemone** {AFP}

- 1. Leaves simple, shallowly to moderately lobed; basal inflorescence bracts persistent; foliaceous involucre bracts ovate, sepaloid, 0-3 mm below the flower; petaloid sepals 5-12; achene beak indistinct ... *A. americana*
- 1. Leaves compound or deeply lobed; basal inflorescence bracts lacking; foliaceous involucre bracts dissected into linear lobes, 1-20 cm below the flower; petaloid sepals 7-25; achene beak subulate, curved, 1-2.5 mm long ... *A. berlandieri*

***Anemone americana*** (DC.)H.Hara— {AFP} State Endangered.

***Anemone berlandieri*** Pritz.— {AFP}

### **Aquilegia** {AFP}

***Aquilegia canadensis*** L.— {AFP} State Endangered.

### **Clematis** {AFP}

- 1. Erect herb, the stems mostly <70 cm long; leaves simple, or the blade deeply dissected, rarely compound ... *C. baldwinii*
- 1. Vine, the stems mostly >1 m long; leaves compound (simple foliaceous bracts subtending the inflorescence) [2]
- 2. Flowers pendent and solitary on a long pedicel (peduncle), these sometimes fascicled; calyx blue, pink, to reddish, campanulate [3]
- 2. Flowers erect to spreading in a panicle or cyme; calyx white, rotate [5]
- 3. Leaflets with prominent reticulate venation on both sides ... *C. reticulata*
- 3. Leaflets with reticulate venation obscure to visible, flat with the surface [4]
- 4. Leaflet underside not glaucous; sepals violet-blue, margins proximally thick and tomentose, distally broadly expanded, 2-6 mm wide, thin, crispate; achene beaks 2-3.5 cm, appressed puberulent ... *C. crispa*

4. Leaflet underside glaucous; sepals red to purplish-red, margins not expanded, thick, not crispate; achene beaks 5-7 cm long, plumose ... *C. glaucophylla*
5. Leaflets entire, rarely cleft; flowers bisexual (some unisexual); pistils or achenes 5-10; anthers ca. 3 mm long ... *C. terniflora*
5. Leaflets lobed to coarsely toothed; flowers all unisexual; anthers 0.5-1 mm long
6. Leaves pinnately or bi-ternately compound; pistils or achenes 18-35 ... *C. catesbyana*
6. Leaves trifoliolate; pistils or achenes 40-70 ... *C. virginiana*

***Clematis baldwinii*** Torr. & A.Gray— {AFP} Endemic.

***Clematis catesbyana*** Pursh— {AFP}

***Clematis crispa*** L.— {AFP}

***Clematis glaucophylla*** Small— {AFP}

***Clematis reticulata*** Walter— {AFP}

\****Clematis terniflora*** DC.— {AFP}

***Clematis virginiana*** L.— {AFP}

### Delphinium {AFP}

1. Annuals; petiole of basal leaves 5-15 mm long; pistil 1; petals 2, connate ... *D. ajacis*
1. Perennials; petiole of basal leaves 17-100 mm long; pistils 3(-5); petals 4, distinct ... *D. carolinianum*

^ *Delphinium ajacis* L.— {AFP}

***Delphinium carolinianum*** Walter— {AFP} State Endangered.

### Enemion {AFP}

***Enemion biternatum*** Raf.— {AFP} State Endangered.

### Ranunculus {AFP}

1. All leaf blades entire, undulate, to toothed (rarely lobed or compound) [2]
1. At least some leaf blades distinctly lobed (sinuses at least ½ the blade length), divided, or compound, the basal ones sometimes unlobed or undivided [3]
2. Petals 4-6, 2-6 mm long; achene 0.8-1 mm long ... *R. laxicaulis*
2. Petals 1-3, 1.5-2.5 mm long; achene 1-1.2 mm long ... *R. pusillus*
3. Basal leaves mostly crenate and unlobed ... *R. abortivus*
3. Basal leaves lobed, divided, or with coarse teeth [4]
4. Flowers sessile, opposite the leaves ... *R. platensis*
4. Flowers pedicellate, axillary [5]
5. Fruiting head ellipsoid ... *R. scleratus*
5. Fruiting head globose [6]
6. Petals 1-2 mm long; achene with hooked bristles ... *R. parviflorus*
6. Petals 3-16 mm long; achene lacking bristles [7]
7. Petals 7-12 mm long [8]
7. Petals 3-8 mm long [10]
8. Sepals reflexed along well-defined transverse fold 1-3 mm above base; styles laterally stigmatic; achene beak 0.4-0.7 mm long ... *R. sardous*
8. Sepals spreading, sometimes reflexed from base with age; styles stigmatic only at the tip; achene beak 0.8-2.6 mm long [9]
9. Stems erect or nearly erect, never rooting at nodes ... *R. hispidus* var. *hispidus*

9. Stems decumbent, sometimes rooting at nodes ... *R. hispidus* var. *nitidus*  
 10. Petals 3-5 mm long; achene face smooth ... *R. recurvatus*  
 10. Petals 4-8 mm long; achene face tuberculate to spiny [11]  
 11. Achene face with low rounded protuberances; achene beak 0.3–0.7 mm ... *R. trilobus*  
 11. Achene face with spiny protuberances; achene beak 1–2.5 mm [12]  
 12. Peduncle usually longer than the subtending leaf; achene faces but not margin covered with high sharp tubercles or low spines; achene beak ca. 1 mm long ... *R. marginatus* var. *trachycarpus*  
 12. Peduncle usually subequal to shorter than the subtending leaf; achene faces but not margin covered with long spines; achene beak 2–2.5 mm long ... *R. muricatus*

***Ranunculus abortivus*** L.— {AFP}

***Ranunculus hispidus*** Michx.— {AFP}

***Ranunculus hispidus*** Michx. var. ***nitidus*** (Chapm.)T.Duncan— {AFP}

\****Ranunculus laxicaulis*** (Torr. & A.Gray)Darby— {AFP} State Endangered.

\****Ranunculus marginatus*** d'Urv. var. ***trachycarpus*** (Fisch. & C.A.Mey.)Azn.— {AFP}

\****Ranunculus muricatus*** L.— {AFP}

\****Ranunculus parviflorus*** L.— {AFP}

\****Ranunculus platensis*** A.Spreng.— {AFP}

***Ranunculus pusillus*** Poir.— {AFP}

***Ranunculus recurvatus*** Poir.— {AFP}

\****Ranunculus sardous*** Crantz— {AFP}

***Ranunculus sceleratus*** L.— {AFP}

\****Ranunculus trilobus*** Desf.— {AFP}

## Thalictrum {AFP}

1. Plant to 30 cm tall; flowers solitary or in umbels, bisexual ... *T. thalictroides*  
 1. Plant 40-200 cm tall; flowers in racemes or panicles, unisexual or unisexual and bisexual [2]  
 2. Leaflets linear to narrowly lanceolate or oblanceolate, (2.6–)4–26 times longer than wide ... *T. cooleyi*  
 2. Leaflets nearly orbiculate, ovate, lanceolate to obovate, usually less than 4 times longer than wide [2]  
 3. Leaflet chartaceous to subcoriaceous, margins sometimes revolute (except the lobes), the underside glabrous; achenes short stipitate to sessile, glabrous to pubescent; sepals 1-2 mm long; anthers 0.5-1.2 mm long; stigma 0.6-1.7 mm long ... *T. macrostylum*  
 3. Leaflet coriaceous with strongly revolute margins, the underside stipitate-glandular (or occasionally muricate or whitened papillose, rarely pubescent otherwise); achenes more or less sessile, often stipitate-glandular; sepals 3-4 mm long; anthers 1.5-2.8 mm long; stigma 2-3.5 mm long ... *T. revolutum*

***Thalictrum cooleyi*** Ahles— {AFP} Federally Endangered. State Endangered.

***Thalictrum macrostylum*** Small & A.Heller— {AFP}

***Thalictrum revolutum*** DC.— {AFP}

***Thalictrum thalictroides*** (L.)A.J.Eames & B.Boivin— {AFP} State Endangered.

## Xanthorhiza {AFP}

***Xanthorhiza simplicissima*** Marshall— {AFP} State Endangered.

## PROTEALES

### NELUMBONACEAE {AFP}

#### Nelumbo {AFP}

1. Tepals yellow, the outermost normally persistent; mature fruits mostly less than 1.25 times longer than wide ... *N. lutea*

1. Tepals pink to white, all normally caducous; mature fruits mostly more than 1.5 times longer than wide ... *N. nucifera*

*Nelumbo lutea* Willd.— {AFP}

\**Nelumbo nucifera* Gaertn.— {AFP}

### PLATANACEAE {AFP}

#### Platanus {AFP}

*Platanus occidentalis* L.— {AFP}

### PROTEACEAE {AFP}

1. ... *Grevillea*

1. ... *Macadamia*

#### *Grevillea* {AFP}

^ *Grevillea robusta* A.Cunn. ex R.Br.— {AFP}

#### *Macadamia*

^ *Macadamia integrifolia* Maiden & Betche—

## BUXALES

### BUXACEAE {AFP}

1. Shrubs to small trees, 1-5 m tall, not clonal; leaves opposite or subopposite, the blade margins entire; tepals of pistillate flowers 5-6; seeds 2 per locule ... *Buxus*

1. Herbs to subshrubs, 10-40 cm tall, clonal; leaves alternate, the blade margins toothed; tepals of pistillate flowers usually 4; seeds 1 per locule ... *Pachysandra*

**Buxus** Several species are sometimes cultivated, but only two further treated below are especially common.

1. Staminate ovary half as long or less than the inner sepals [2]

1. Staminate ovary two-thirds as long as to subequal to the inner sepals [4]

2. Leaves 3-4 times as long as wide ... *Buxus wallichiana*

2. Leaves 2-3 times as long as wide [3]

3. Stem and petiole usually persistently whitish-pubescent; leaves 15-30(40) mm long, blade upper surface dark green and strongly lustrous; inflorescence 4-6 mm wide, the bracteoles ovate and acute-tipped; staminate flowers sessile; anthers 1-2 mm long; fruiting style 2-5 mm long, <1/2 as long as fruit ... *Buxus sempervirens*

3. Stem and petiole usually glabrous to glabrate; leaves 25-40(45) mm long, blade upper surface green and moderately lustrous; inflorescence 8-12 mm wide, the bracteoles suborbicular and obtuse-tipped; staminate flowers pedicellate; anthers 2-5 mm long; fruiting style 5-7 mm long, revolute at tips, 2/3 to subequal to fruit ... *Buxus balearica*

4. Stems and petioles pubescent; leaf blade oblanceolate or narrowly spatulate, mostly widest above the middle, rarely obovate or narrowly lanceolate staminate flowers pedicellate ... *Buxus harlandii*

4. Stems and petioles glabrate to pubescent; leaf blades ovate, ovate-oblong, to oblong, generally widest below the middle, rarely lanceolate, oblanceolate, or obovate; staminate flowers sessile [5]

5. Stems and petioles glabrous or glabrate [6]

5. Stems and petioles pubescent [7]

6. Densely branched, branches slender; leaf blades subcoriaceous, oblanceolate, rarely obovate or lanceolate ... *Buxus microphylla*

6. Sparsely branched, branches thick; leaf blades coriaceous, ovate or ovate-elliptic, rarely obovate or lanceolate ... *Buxus japonica*

7. Leaves 1.3-5 cm. long, the lateral nerves distinct above, the margin slightly revolute ... *Buxus sinica*

7. Leaves scarcely more than 2 cm long, the lateral nerves on both sides obsolete, the margin strongly revolute ... *Buxus insularis*

## **Buxus**

^ *Buxus microphylla* Siebold & Zucc.—

^ *Buxus sempervirens* L.—

## **Pachysandra {AFP}**

***Pachysandra procumbens*** Michx.— {AFP} State Endangered.

# **DILLENIALES**

## **DILLENiaceae**

### **Dillenia**

^ *Dillenia indica* L.—

# **CARYOPHYLLALES**

## **DROSERACEAE {AFP}**

1. Leaf blade of 2 hinged lobes fringed with stout bristles, the upper surface of each lobe with 3(4) hairs that when 2 are disturbed in succession causes the lobes to enclose as a trap; inflorescences umbel-like cymes; stamens 15–20 ... *Dionaea muscipula*

1. Leaf blade unlobed, surfaces covered with glandular trichomes; inflorescences circinate or scorpioid cymes; stamens 5 ... *Drosera*

### **Dionaea {AFP}**

\****Dionaea muscipula*** J.Ellis— {AFP}

### **Drosera {AFP}**

1. Leaf blades filiform, not differentiated from petioles; stem base bulbose-cormose (from expanded petiole base); petals 7-17(20) mm [2]

1. Leaf blades linear or suborbiculate to obovate, elongate-spatulate, or cuneate, differentiated from petioles or not; stem base not bulbose-cormose; petals 3-7(8) mm [3]

2. Leaf blades 8-25(30) cm long, ca. 1 mm wide or less, glandular trichomes red to reddish purple, drying dark brown; scapes 6-26 cm long; petals 7-10(12) mm long ... *D. filiformis* var. *floridana*

2. Leaf blades 30-50 cm long, 1-2 mm wide, glandular trichomes pale green, drying pale greenish brown; scapes 25-60 cm long; petals 12-17(-20) mm long ... *D. tracyi*

3. Petiole often glandular and scarcely distinct from the expanded blade; scapes stipitate-glandular; stipules absent or reduced to minute hairs; seeds black, crateriform ... *D. brevifolia*

3. Petiole usually eglandular, rather distinct from the blade; scapes glabrous; stipules present, free from petioles; seeds reddish brown or brown, papillose [4]

4. Plant always rosulate; leaves spreading to prostrate, usually <4(6) cm long; petioles flat, sparsely glandular-pilose; petals pink to white, 6-7 mm long; seeds coarsely papillose-corrugated, 0.4-0.5 mm long ... *D. capillaris*

4. Plant rosulate at first, usually developing leafy stems 1-8(20) cm long; leaves spreading to erect, to 8 cm long; petioles filiform, glabrous; petals white (rarely pink), 3-6 mm long; seeds uniformly papillose, 0.7-1 mm long ... *D. intermedia*

***Drosera brevifolia*** Pursh— {AFP}

***Drosera* × *californica*** Cheek var. ***arenaria*** B. Rice— {AFP} Endemic.

***Drosera capillaris*** Poir.— {AFP}

***Drosera filiformis*** Raf. var. ***floridana*** B. Rice— {AFP} Endemic. State Endangered.

***Drosera intermedia*** Hayne— {AFP} State Threatened.

***Drosera tracyi*** (Diels) Macfarl.— {AFP}

## NEPENTHACEAE

### Nepenthes

^ *Nepenthes* hybrids—The hybrid of *N. alata* × *N. ventricosa* is thought to be most common.

## PLUMBAGINACEAE {AFP}

1. Leaves all basal; petals free nearly to the base; stamens adnate to the petals ... *Limonium carolinianum*

1. Leaves primarily cauline; petals connate for most of their length; stamens free from petals ... *Plumbago*

### *Limonium* {AFP}

***Limonium carolinianum*** (Walter) Britton— {AFP}

### *Plumbago* {AFP}

1. Leaf blade tip typically rounded; calyx stipitate-glandular and lacking eglandular hairs; corolla bluish ... *P. auriculata*

1. Leaf blade tip typically acute; calyx stipitate-glandular and pubescent; corolla white ... *P. zeylanica*

^ *Plumbago auriculata* Lam.— {AFP}

***Plumbago zeylanica*** L.— {AFP}

## POLYGONACEAE {AFP}

1. Ocrea absent; leaves whorled or predominantly basal ... *Eriogonum*

1. Ocrea present (a nodal sheath arising from the base of the petiole and sheathing the stem above the petiole), sometimes obscure or fibrous; leaves alternate and cauline [2]
2. Shrubs or trees [3]
2. Herbs or vines [4]
3. Young stems solid; ocrea persistent; fruit a fleshy berry; ectomycorrhizal with mushroom-forming fungi ... *Coccoloba*
3. Young stems hollow; ocrea caducous; fruit a winged achene; not ectomycorrhizal ... *Triplaris melaenodendron*
4. Vines with tendrils [5]
4. Herbs or vines without tendrils [6]
5. Leaf blade base usually cordate, the sinus often as long as the petiole, blade with conspicuous reticulate venation; tepals pink, rarely white to yellowish ... *Antigonon leptopus*
5. Leaf blade base truncate to cordate, if cordate the sinus shorter than the petiole, blade reticulate venation obscure; tepals green to greenish white ... *Brunnichia ovata*
6. Branch bases adnate to the stem, appearing to arise above the node ... *Polygonella*
6. Branches appearing directly from the node, not adnate to the stem [7]
7. Tepals 6 (rarely 5) [8]
7. Tepals 3-5 [9]
8. Flowers unisexual; outer 3 tepals of pistillate flowers each with apex ending in stout spine ... *Emex spinosa*
8. Flowers bisexual or, rarely, unisexual; outer 3 tepals each without apex ending in stout spine ... *Rumex*
9. Outer tepals winged or keeled [10]
9. Outer tepals without wings or keels [11]
10. Vines, sometimes scandent or sprawling; larger leaf blades 2-7 cm wide; stigmas capitate ... *Fallopia*
10. Erect herbs; larger leaf blades 4.5-30 cm wide; stigmas fimbriate ... *Reynoutria japonica*
11. Tepals free; achenes exserted ... *Fagopyrum esculentum*
11. Tepals connate for at least part of their length; achenes exserted or not [12]
12. Ocreae chartaceous, usually tan, brown, or reddish, rarely silvery, glabrous or scabrous to variously pubescent, never 2-lobed distally, often tearing with age; tepals generally with 3 main veins from the base ... *Persicaria*
12. Ocreae often hyaline, silvery, glabrous, 2-lobed distally, often disintegrating into fibers or completely; tepals generally with 1 primary vein from the base ... *Polygonum*

### **Antigonon** {AFP}

\**Antigonon leptopus* Hook. & Arn.— {AFP}

### **Brunnichia** {AFP}

*Brunnichia ovata* (Walter) Shinn.— {AFP}

### **Coccoloba** {AFP}

1. Leaf blades ovate, lanceolate, to elliptic, usually 1.2-3 times longer than wide, the base cuneate to subcordate, the basal lateral veins usually ascending, the midrib whitish to pale green when fresh; fruits 9-14 mm long ... *C. diversifolia*

1. Leaf blades orbicular to subreniform, the length subequal to or less than the width, the base usually cordate, the basal lateral veins usually nearly perpendicular to the midrib to somewhat retrorse, the midrib whitish to red when fresh; fruits 12-20 mm long ... *C. uvifera*



***Coccoloba diversifolia*** Jacq.— {AFP}

***Coccoloba ×hybrida*** Castañeda-Noa— {AFP} Hybrid of *C. diversifolia* and *C. uvifera*, and intermediate in characters.

***Coccoloba uvifera*** (L.)L.— {AFP}

**Emex** {AFP}

\****Emex spinosa*** (L.)Campderá— {AFP}

**Eriogonum** {AFP}

1. Leaves of the flowering stem alternate or fascicled, whitish lanate on the lower surface; tepals monomorphic, silvery or whitish tomentose on the outer surface; filaments glabrous ... E. floridanum

1. Leaves of the flowering stem whorled or opposite, white to rusty tomentose on the lower surface; tepals dimorphic, the outer surface tan to rusty lanate; filaments pilose ... E. tomentosum

***Eriogonum floridanum*** Small— {AFP} Endemic. Federally Threatened. State Endangered.

***Eriogonum tomentosum*** Michx.— {AFP}

**Fagopyrum** {AFP}

\****Fagopyrum esculentum*** Moench— {AFP}

**Fallopia** {AFP}

1. Fruiting perianth without wings or wings to 1 mm wide; achene dull, minutely granular-tuberculate ... F. convolvulus

1. Fruiting perianth with wings 1-2.1 mm wide; achene shiny, smooth ... F. scandens

\****Fallopia convolvulus*** (L.)A.Löve— {AFP}

***Fallopia scandens*** (L.)Holub— {AFP}

**Persicaria** {AFP}

1. Stems with recurved prickles [2]

1. Stems without prickles [4]

2. Leaf blade broadly hastate, hastate-cordate, to triangular; tepals 4 ... P. arifolia

2. Leaf blade linear-lanceolate to oblong; tepals 5 [3]

3. Leaves sessile to sessile, the blade base cordate, truncate, to cuneate; peduncle glandular-stipitate, at least distally ... P. meisneriana var. beyrichiana

3. Leaves petiolate (becoming sessile distally), the blade base cordate to sagittate; peduncle eglandular ... P. sagittata

4. Styles exerted, persistent on achenes; inflorescences spikelike, interrupted ... P. virginiana

4. Styles included, rarely exerted, deciduous; inflorescences capitate, paniclelike, or spikelike, uninterrupted or interrupted [5]

5. Petiole winged, auriculate; inflorescence capitate ... P. capitata

5. Petiole not winged nor auriculate; inflorescence spiciform [6]

6. Ocrea eciliate or the cilia <0.5 mm long [7]

6. Ocrea ciliate with bristles 1-12 mm long [9]

- 7. Rhizomatous perennial; peduncles glabrous to sparsely setose below the flowers; achene biconvex ... *P. glabra*
- 7. Annual; peduncles usually stipitate-glandular; achene discoid or concave [8]
- 8. Inflorescence usually arching or nodding; tepals usually 4; outer tepals with prominent distally bifurcate anchor-shaped veins ... *P. lapathifolia*
- 8. Inflorescence usually erect; tepals usually 5; outer tepals without anchor-shaped veins ... *P. pensylvanica*
- 9. Upper stem and peduncles stipitate-glandular ... *P. careyi*
- 9. Upper stem and peduncles not stipitate-glandular [10]
- 10. Stem hirsute, at least near the inflorescence [11]
- 10. Stem glabrous to appressed pubescent [12]
- 11. Ocrea without a broad herbaceous flange; petiole 0.1-0.3 cm long; leaf blades linear-lanceolate ... *P. hirsuta*
- 11. Ocrea with a broad green-herbaceous flange; petiole 1-9 cm long; leaf blades broadly ovate ... *P. orientalis*
- 12. Tepals uniformly glandular-punctate ... *P. punctata*
- 12. Tepals not glandular, or rarely sparse on the base of inner tepals [13]
- 13. Annual; ocreolae of the inflorescence not overlapping, or only overlapping distally [14]
- 13. Rhizomatous perennial; ocreolae of the inflorescence overlapping [15]
- 14. Ocrea surface with stiff ascending-appressed hairs, the cilia at the apex 1-7 mm long; leaf blade 0.5-2 cm wide, the upper surface glabrous; tepals white, pink, to greenish ... *P. hydropiperoides*
- 14. Ocrea surface with flexuous spreading hairs, the cilia at the apex 5-15 mm long; leaf blades 1.5-4 cm wide, the upper surface puberulent when young; tepals white ... *P. setacea*
- 15. Inflorescence ocreolae (0.5)1-4(6) mm long, subequal to the tube ... *P. longiseta*
- 15. Inflorescence ocreolae 0.2-1.3(2) mm long, shorter than the tube ... *P. maculosa*

***Persicaria arifolia*** (L.)Haraldson— {AFP}

\****Persicaria capitata*** (Buch.-Ham. ex D.Don)H.Gross— {AFP}

\****Persicaria careyi*** (Olney)Greene— {AFP}

***Persicaria glabra*** (Willd.)M.Gómez— {AFP}

***Persicaria hirsuta*** (Walter)Small— {AFP}

***Persicaria hydropiperoides*** (Michx.)Small— {AFP}

***Persicaria lapathifolia*** (L.)Delarbre— {AFP}

\****Persicaria longiseta*** (Bruijn)Kitag.— {AFP}

\****Persicaria maculosa*** Gray— {AFP}

***Persicaria meisneriana*** (Cham. & Schltldl.)M.Gómez var. ***beyrichiana*** (Cham. & Schltldl.)C.C.Freeman— {AFP} State Endangered.

\****Persicaria orientalis*** (L.)Spach— {AFP}

***Persicaria pensylvanica*** L.)M.Gómez— {AFP}

***Persicaria punctata*** (Elliott)Small— {AFP}

***Persicaria sagittata*** (L.)H.Gross ex Nakai— {AFP}

***Persicaria setacea*** (Baldwin)Small— {AFP}

***Persicaria virginiana*** (L.)Gaertn.— {AFP}

## Polygonum {AFP}

1. Branches appearing directly from the node, not adnate to the stem [2]

1. Branch bases adnate to the stem, appearing to arise above the node (Polygonella) [4]

2. Stem mostly erect; flowers mostly in terminal, loose, leafy spiciform inflorescences with the distal flowers subtended by leaves subequal to shorter than the flowers ... *P. argyrocoleon*
2. Stem prostrate to erect; flowers axillary, with the distal flowers subtended by leaves much longer than the flowers [3]
3. Ocrea not pruinose at the base; tepals appressed in fruit; achene dull, tuberculate ... *P. aviculare*
3. Ocrea pruinose at the base; tepals ascending-spreading in fruit; achene shiny, smooth ... *P. glaucum*
4. Ocrea ciliate at the apex; leaves linear with an acute to acuminate apex [5]
4. Ocrea lacking cilia at the apex; leaves generally linear-spatulate to spatulate with an obtuse to rounded apex [8]
5. Leaves narrowly linear, usually <1.3 mm wide; inner tepal margin entire to erose; filaments dimorphic [6]
5. Leaves linear, larger ones usually 1-3 mm wide; inner tepal margin fimbriate; filaments monomorphic [7]
6. Plant with multiple stems at the base of the plant ... *P. basiramia*
6. Plant with one main stem at the base of the plant (*Polygonella ciliata*) ... *P. delopyrum*
7. Plant 10-60 cm tall; stem minutely scabrous below the inflorescence; leaves without hyaline margins ... *P. fimbriatum*
7. Plant 35-110 cm tall; stem smooth to sparsely scabrous along the angles below the inflorescence; leaves with hyaline margins (*Polygonella robusta*) ... *P. nesomii*
8. Larger leaf blades (3)8-30 mm wide (*Polygonella macrophylla*) ... *P. smallianum*
8. Larger leaf blades 0.3-6(8) mm wide [9]
9. Larger leaf blades 16-40(65) mm long (often nearly leafless or with few at maturity); inflorescence (13)20-40 mm long (*Polygonella gracilis*) ... *P. pinicola*
9. Larger leaf blades 4-16(36) mm long (usually abundantly leafy at maturity); inflorescence 4-20(33) mm long [10]
10. Plant prostrate; leaf margin not hyaline; stigma and style 0.5-0.8 mm long (*Polygonella myriophylla*) ... *P. dentoceras*
10. Plant erect to decumbent; leaf margin hyaline distally; stigma and style ca. 0.1 mm long [11]
11. Larger leaf blades 0.5-1.5(2) mm wide ... *P. polygamum* var. *brachystachyum*
11. Larger leaf blades (2)3-6 mm wide ... *P. polygamum* var. *polygamum*

\**Polygonum argyrocoleon* Steud. ex Kunze— {AFP}

\**Polygonum aviculare* L.— {AFP}

*Polygonum basiramia* (Small)T.M.Schust. & Reveal— {AFP} Endemic. Federally Endangered. State Endangered.

*Polygonum delopyrum* T.M.Schust. & Reveal— {AFP} Endemic.

*Polygonum dentoceras* T.M.Schust. & Reveal— {AFP} Endemic. Federally Endangered. State Endangered.

*Polygonum fimbriatum* Elliott— {AFP}

*Polygonum glaucum* Nutt.— {AFP}

*Polygonum nesomii* T.M.Schust. & Reveal— {AFP} Endemic.

*Polygonum pinicola* T.M.Schust. & Reveal— {AFP}

*Polygonum polygamum* Vent. var. *brachystachyum* (Meisn.)T.M.Schust. & Reveal— {AFP} Endemic.

*Polygonum polygamum* Vent. var. *polygamum*— {AFP}

*Polygonum smallianum* T.M.Schust. & Reveal— {AFP} State Threatened.

## Reynoutria {AFP}

\**Reynoutria japonica* Houtt.— {AFP} *Reynoutria sachalinensis* and *R. ×bohemica* are very similar and difficult to distinguish from *R. japonica* (Freeman & Hinds in FNA, vol. 5).

## Rumex {AFP}

1. Plant dioecious (flowers unisexual); leaf blades (at least some) sagittate or hastate [2]
1. Plant monoecious (flowers bisexual and sometimes unisexual); leaf blades not sagittate nor hastate [3]
2. Pedicel articulated near base of tepal; inner tepal lacking a wing, as wide as achene ... *R. acetosella*
2. Pedicel articulated at middle or below; Inner tepal with a conspicuous wing, much wider than achene ... *R. hastatulus*
3. Inner tepal margins dentate [4]
3. Inner tepal margins entire to crenulate [7]
4. Inner tepal scarcely reticulate, the the tubercle (basal medial callosity of inner tepal) smooth and acute at the tip [5]
4. Inner tepal alveolate-reticulate, the tubercle (basal medial callosity of inner tepal) verrucose and obtuse at the tip [6]
5. Larger leaf blades 20-40 cm long ... *R. obtusifolius*
5. Larger leaf blades 4-7 cm long ... *R. paraguayensis*
6. Leaf blade coriaceous, cuneate at the base ... *R. obovatus*
6. Leaf blade chartaceous, subcordate to truncate at the base ... *R. pulcher*
7. Plants with long-creeping underground rhizomes and/or stolons, producing ascending or erect axillary shoots; inner tepals 2.5-3.5 mm wide ... *R. cuneifolius*
7. Plants without rhizomes or stolons; inner tepals 3-9 mm wide [8]
8. Pedicels 3-5 mm long, 2-2.5 times longer than inner tepals [9]
8. Pedicels 7-17 mm long, 2.5-5 times longer than inner tepals [11]
9. Inner tepal 5-10 mm wide, the tubercle 1(-3) per flower and smooth, free margin of tepal often 2 times as wide as tubercle ... *R. patientia*
9. Inner tepal 3-5 mm wide, the tubercle (1-)3 per flower and reticulate-rugose, free margin of tepal subequal to the tubercle in width [10]
10. Plants not developing basal rosette of leaves; free margins of inner tepal wider than or at least as wide as tubercle; inflorescence interrupted nearly throughout ... *R. chrysocarpos*
10. Plants developing basal rosette of leaves (sometimes not persistent at maturity); inflorescence densely or interrupted only at base ... *R. crispus*
11. Leaf blades ovate or ovate-elliptic, 1.9-2.6 times as long as wide, lateral veins spreading, nearly perpendicular to midvein (especially near base) ... *R. verticillatus* subsp. *fascicularis*
11. Leaf blades linear-lanceolate to broadly lanceolate (rarely ovate-lanceolate), (2)3-7(10) times as long as wide, lateral veins strict to ascending [12]
12. Leaf blades mostly lanceolate to broadly lanceolate, 3-5(6) times as long as wide, coriaceous and somewhat fleshy; inflorescences normally rather dense (sometimes interrupted only at base); pedicels 2-3(3.5) times as long as inner tepals; inner tepals as wide as or wider than long ... *R. verticillatus* subsp. *floridanus*
12. Leaf blades mostly linear-lanceolate, 5-7(10) times as long as wide, thin; inflorescences normally interrupted (at least at base); pedicels (2.5)3-5 times as long as inner tepals; inner tepals longer than wide, or rarely as long as wide ... *R. verticillatus* subsp. *verticillatus*

\**Rumex acetosella* L.— {AFP}

\**Rumex chrysocarpos* Moris— {AFP}  
 \**Rumex crispus* L.— {AFP}  
 \**Rumex cuneifolius* Campd.— {AFP}  
*Rumex hastatulus* Baldwin— {AFP}  
 \**Rumex obovatus* Danser— {AFP}  
 \**Rumex obtusifolius* L.— {AFP}  
 \**Rumex paraguayensis* Parodi— {AFP}  
 \**Rumex patientia* L.— {AFP}  
 \**Rumex pulcher* L.— {AFP} Six subspecies have been recognized.  
*Rumex verticillatus* L. subsp. *fascicularis* (Small)Á.Löve — {AFP}  
*Rumex verticillatus* L. subsp. *floridanus* (Meisner)Á.Löve— {AFP}  
*Rumex verticillatus* L.— {AFP}

### Triplaris {AFP}

\**Triplaris melaenodendron* (Bertol.)Standl. & Steyerl.— {AFP}

### TAMARICACEAE {AFP}

#### Tamarix {AFP}

\**Tamarix canariensis* Willd.— {AFP}

### AMARANTHACEAE {AFP}

1. Tepals usually scarious or chartaceous, occasionally indurate or membranaceous; filaments basally connate (amaranths) [2]

1. Tepals membranaceous to fleshy; filaments free (chenopods) [9]

2. Leaves alternate [3]

2. Leaves mostly or all opposite [4]

3. Flowers unisexual; fruit with 1 seed ... Amaranthus

3. Flowers bisexual; fruit with 2 or more seeds ... Celosia

4. Inflorescences terminal panicles; flowers unisexual ... Iresine

4. Inflorescences terminal or axillary glomerules, heads, or spiciform; flowers bisexual [5]

5. Tips of fruiting perianth of sterile flowers uncinat, burr-like ... Cyathula prostrata

5. Tips of fruiting perianth not uncinat (barbed hairs present in a few species) [6]

6. Inflorescence bracteoles with a spinose midrib and mature fruits often retrorse on the rachis ... Achyranthes

6. Inflorescence bracteoles not spinose (occasionally stiffened, tepals spinose in a few species) and mature fruits typically spreading to appressed-antrorse [7]

7. Inflorescences mostly compound, interrupted spikes, peduncles typically 10-50 cm long (occasionally shorter or subtended by a reduce leaf); tepals connate into indurate tubes with lateral crests or spines, lanate ... Froelichia floridana

7. Inflorescences simple spikes or few-branched panicles, flowers progressively farther apart below, peduncles 0-13 cm long ; tepals basally connate into indurate tubes, without ornamentation, ± glabrous [8]

8. Inflorescence not immediately subtended by 2 leaves, mostly axillary and sometimes terminal ... Alternanthera

8. Inflorescence usually subtended by 2 leaves, mostly terminal and sometimes axillary ... Gomphrena

9. Stems succulent; leaves opposite, scalelike; of saline habitats ... Salicornia

- 9. Stems not succulent (sometimes thickened and green); leaves alternate, with a sizable expanded blade, not scalelike; of freshwater or saline habitats [10]
- 10. Leaves and bracts spinose at the tip ... *Salsola kali* subsp. *pontica*
- 10. Leaves and bracts not spinose, sometimes mucronate at the tip [11]
- 11. Leaves linear, usually fleshy ... *Suaeda linearis*
- 11. Leaves not linear, not fleshy or only slightly so [12]
- 12. Flowers unisexual (rarely bisexual); pistillate flowers usually lacking perianth, at least some flowers enclosed by 2 accrescent, connate, dentate, or tuberculate bracts in fruit ... *Atriplex*
- 12. Flowers bisexual (rarely unisexual); perianth present, not enclosed by paired bracts in fruit [13]
- 13. Stems and leaves glandular ... *Dysphania*
- 13. Stem and leaves eglandular (sometimes farinose) [14]
- 14. Tepals 3-4 ... *Oxybasis glauca*
- 14. Tepals 5 [15]
- 15. Young stems and leaves with the vesicular trichomes (farinose) slightly yellowish or brownish and fully collapsed when dry, fresh leaves generally green with a pungent odor; tepal midrib pronounced ... *Chenopodiastrum murale*
- 15. Young stems and leaves with the vesicular trichomes (farinose) white and cup-shaped when dry and persistent, fresh leaves generally grayish with a weak or noxious odor; tepal midrib weak ... *Chenopodium*

### **Achyranthes** {AFP}

- 1. Leaf blades orbiculate, obovate-orbiculate, to broadly rhombic, the apex rounded to apiculate; tepals 3-4(5) mm long ... *A. aspera* var. *aspera*
- 1. Leaf blades elliptic, ovate, to broadly ovate, the apex acuminate; tepals (5)6-7 mm long ... *A. aspera* var. *pubescens*

\****Achyranthes aspera*** L. var. ***aspera***— {AFP}

\****Achyranthes aspera*** L. var. ***pubescens*** (Moq.)C.C.Towns.— {AFP}

### **Alternanthera** {AFP}

- 1. Inflorescence pedunculate [2]
- 1. Inflorescence sessile to subsessile [4]
- 2. Leaves sessile, the blade apex subacute to rounded; bracts not keeled; tepals glabrous ... *A. philoxeroides*
- 2. Leaves mostly petiolate, the blade apex acute to acuminate; bracts keeled; tepals pilose [3]
- 3. Young stems and leaves villous; bracts slightly shorter to subequal to tepals ... *A. brasiliana*
- 3. Young stems and leaves pubescent, strigose, to glabrous; bracts <1/2 the length of tepals ... *A. flavescens*
- 4. Tepals dimorphic, the tip spinose, hairs barbed [5]
- 4. Tepals monomorphic, not spinose, hairs not barbed [6]
- 5. Leaf blades longer than wide; tepals 3-5 mm long, weakly spinose-tipped, densely villous; pseudostaminode margin dentate ... *A. caracasana*
- 5. Leaf blades often as wide as long; tepals 5-7 mm long, strongly spinose-tipped, sparsely villous; pseudostaminode margin dentate ... *A. pungens*
- 6. Pseudostaminode margin entire, dentate, to lacinate [7]
- 6. Pseudostaminode margin fimbriate [8]
- 7. Young stems and leaves villous; mature fruit included within tepals ... *A. paronichyoides*

- 7. Young stems and leaves glabrate; mature fruit expanded beyond the tepals ... *A. sessilis*
- 8. Young stems pubescent; leaves not succulent; tepals chartaceous, pilose to hispid ... *A. ficoidea*
- 8. Young stems glabrous; leaves semi-succulent; tepals rigid, glabrous ... *A. maritima*

- \**Alternanthera brasiliana* (L.)Kuntze— {AFP}
- \**Alternanthera caracasana* Kunth— {AFP}
- \**Alternanthera ficoidea* (L.)P.Beauv.— {AFP}
- Alternanthera flavescens* Kunth— {AFP}
- Alternanthera maritima* (Mart.)A.St.-Hil.— {AFP}
- \**Alternanthera paronichyoides* A.St.-Hil.— {AFP}
- \**Alternanthera philoxeroides* (Mart.)Griseb.— {AFP}
- \**Alternanthera pungens* Kunth— {AFP}
- \**Alternanthera sessilis* (L.)R.Br. ex DC.— {AFP}

### **Amaranthus** {AFP}

- 1. Stem nodes usually with paired spines ... *A. spinosus*
- 1. Stem nodes without spines [2]
- 2. Plant dioecious [3]
- 2. Plant monoecious, staminate and carpellate flowers intermingled or separated [6]
- 3. Leaf blades linear-oblong (basal ones sometimes lance-ovate), (2.7)4-12 times as long as wide, with 3-10 secondary veins per side or these obscure, most <1.1 cm wide (basal ones to 2.5 cm wide), those subtending the inflorescence <0.5 cm wide, margins often reddish ... *A. floridanus*
- 3. Leaf blades narrowly lanceolate to ovate (infrequently linear-oblong), 1.2-8 times as long as wide, with 10-30 secondary veins per side, larger ones 1-12 cm wide, usually at least some subtending the inflorescence >0.5 cm wide, margins usually greenish [4]
- 4. Plant (0.25)0.5-1.5(3) m tall; petioles commonly subequal to longer than the leaf blade; staminate flower bracts longer than 2 mm, mostly with prominent midribs; outer staminate tepals with prominent midribs, usually longer than the inner tepals; carpellate flowers with 5 tepals, at least some >2 mm long; utricle circumscissile dehiscent ... *A. palmeri*
- 4. Plant (0.25)1-3(9) m tall; petioles usually shorter than the leaf blade; staminate flower bracts 2 mm or shorter, midribs mostly not prominent or sometimes moderately prominent; outer staminate tepals without prominent midribs (sometimes moderately prominent), mostly not longer than the inner tepals; carpellate flower with 0-2 tepals, tepals usually <2 mm long; utricle indehiscent [5]
- 5. Staminate bracts 1.5-2 mm long, midribs prominent; utricles 1-2.5 mm long; seeds 1-1.2 mm wide ... *A. australis*
- 5. Staminate bracts <1 mm long, midribs not prominent; utricles 2.5-4 mm long; seeds 2-3 mm wide ... *A. cannabinus*
- 6. Inflorescences predominantly of axillary clusters or glomerules, distal nodes sometimes condensed into leafy spikes [7]
- 6. Inflorescences predominantly terminal spikes and/or panicles, leafless or almost leafless at least in the distal part, axillary spikes or clusters usually also present [10]
- 7. Pistillate flowers usually with 3 tepals [8]
- 7. Pistillate flowers usually with (4-)5 tepals [9]
- 8. Leaf blades obtuse or acuminate to short-mucronate or shallowly emarginate at apex; utricles dehiscent ... *A. albus*

8. Leaf blades usually deeply and broadly emarginate at apex; utricles indehiscent ... *A. blitum*
9. Inflorescence axes thickened, becoming indurate at maturity ... *A. crassipes*
9. Inflorescence axes not thickened, not indurate at maturity ... *A. polygonoides*
10. Inflorescence bracts shorter than tepals; tepals of pistillate flowers usually 2-3; utricles indehiscent [11]
10. Inflorescence bracts usually exceeding tepals, sometimes shorter than tepals; tepals of pistillate flowers usually 5; utricles dehiscent [13]
11. Utricles distinctly rugose, equaling or slightly exceeding tepals ... *A. viridis*
11. Utricles smooth to faintly rugose, occasionally wrinkled or rugose in dry plants, distinctly exceeding tepals [12]
12. Plants annual; leaf blades usually deeply emarginate at apex; utricles subglobose to obovate, compressed; seeds filling fruit almost completely ... *A. blitum*
12. Plants short-lived perennial or annual; leaf blades retuse or shallowly emarginate at apex; utricles ellipsoid, slightly to distinctly inflated; seeds filling only proximal portions of fruit ... *A. deflexus*
13. Tepals of pistillate flowers acute, acuminate, to aristate at apex [14]
13. Tepals of pistillate flowers obtuse, rounded, to emarginate at apex [15]
14. Bracts shorter than 2 mm, shorter than tepals; style branches strongly spreading; seeds 0.8-1 mm wide ... *A. dubius*
14. Bracts 2-7 mm, longer than or equaling tepals; style branches erect or slightly reflexed; seeds 1-1.3 mm wide ... *A. hybridus*
15. Inflorescences drooping, usually bright red to purple, occasionally white or yellowish, rarely green; bracts subequal to tepals and usually not exceeding style branches at maturity; seeds white, ivory, reddish, brown, or black ... *A. caudatus*
15. Inflorescences erect or reflexed only at the tip, usually green, occasionally silvery green, sometimes reddish; bracts usually exceeding tepals and style branches; seeds brown to black ... *A. retroflexus*

\**Amaranthus albus* L.— {AFP}

*Amaranthus australis* (A.Gray)J.D.Sauer— {AFP}

\**Amaranthus blitum* L. subsp. *emarginatus* (Salzm. ex Uline & W.L.Bray)Carretero et al.— {AFP}

*Amaranthus cannabinus* (L.)J.D.Sauer— {AFP}

\**Amaranthus caudatus* L.— {AFP}

\**Amaranthus crassipes* Schltld.— {AFP}

\**Amaranthus deflexus* L.— {AFP}

\**Amaranthus dubius* Mart. ex Thell.— {AFP}

*Amaranthus floridanus* (S.Watson)J.D.Sauer— {AFP} Endemic. Extinct in the wild or nearly so.

\**Amaranthus hybridus* L.— {AFP}

\**Amaranthus palmeri* S.Watson— {AFP}

\**Amaranthus polygonoides* L.— {AFP}

\**Amaranthus retroflexus* L.— {AFP}

\**Amaranthus spinosus* L.— {AFP}

\**Amaranthus viridis* L.— {AFP}

**Atriplex** {AFP}

1. Larger leaf blades 3-15 mm wide, entire or some with few teeth; fruiting bracteoles 2-5 mm wide or long ... *A. pentandra*



1. Larger leaf blades 10-80 mm wide, usually with several teeth; fruiting bracteoles (3)4-8(10) mm wide or long [2]
2. Plants erect; leaf blade ovate to lanceolate, with Kranz anatomy ... *A. rosea*
2. Plants decumbent; leaf blade ovate to deltate, without Kranz anatomy ... *A. tatarica*

***Atriplex pentandra*** (Jacq.)Standl.— {AFP}

\****Atriplex rosea*** L.— {AFP}

\****Atriplex tatarica*** L.— {AFP}

### **Celosia** {AFP}

1. Flowers densely aggregated, the central inflorescence rachis scarcely visible; tepals 6-8 mm long; styles 3-4 mm long ... *C. argentea*

1. Flowers or flower clusters separated along the rachis (at least on the lower portion), the inflorescence rachis visible (if rachis obscure, then tepals 2-3 mm long); tepals 2-7 mm long; styles 0.2-1 mm long [2]

2. Perennial; flowers mostly single along the inflorescence rachis; tepals 3.5-7 mm long, spreading at anthesis ... *C. nitida*

2. Annual; flowers in compact clusters along the inflorescence rachis; tepals 2-3 mm long, erect at anthesis ... *C. trigyna*

^ *Celosia argentea* L.— {AFP}

***Celosia nitida*** Vahl— {AFP} State Endangered.

^ *Celosia trigyna* L.— {AFP}

### **Chenopodium** {AFP}

\****Chenopodium murale*** (L.)S.Fuentes et al.— {AFP}

### **Chenopodium** {AFP}

1. Leaf blades entire, unlobed, strongly malodorous; tepals rounded, not keeled ... *C. vulvaria*

1. Leaf blades usually dentate or lobed, rarely all entire, not or weakly odorous; tepals keeled [2]

2. Seeds smooth to faintly ornamented ... *C. album*

2. Seeds distinctly honeycomb-reticulate [3]

3. Leaves mostly unlobed or some weakly 3-lobed with the lobes only slightly more pronounced than the teeth ... *C. berlandieri*

3. Leaves mostly strongly 3-lobed ... *C. ficifolium* subsp. *blomianum*

\****Chenopodium album*** L.— {AFP}

***Chenopodium berlandieri*** Moq.— {AFP} Probably was domesticated into various forms with uniform seeds in the Eastern Agricultural Complex north of ([Belcher et al. 2023](#)).

\****Chenopodium ficifolium*** Sm. subsp. ***blomianum*** (Aellen)Aellen— {AFP}

\****Chenopodium vulvaria*** L.— {AFP}

### **Cyathula** {AFP}

\****Cyathula prostrata*** (L.)Blume— {AFP}

### **Dysphania** {AFP}

1. Leaves sessile to subsessile; leaf blade pinnatifid, not or scarcely aromatic ... *D. multifida*

1. Leaves petiolate or the blade base attenuate and merging into the petiole (at least on lower leaves); leaf blade coarsely dentate to entire, mildly or distinctly aromatic (e.g. malodorous) [2]
2. Plant ascending to erect; leaf blade base mostly attenuate and merging with the petiole, the larger blades 3.5 to 12 cm long; tepals connate for ca. ½ their length ... *D. ambrosioides*
2. Plant prostrate to decumbent; leaf blade base mostly acute, with a distinct petiole, the larger blades 1.5-3 cm long; tepals free nearly to the base ... *D. pumilio*

\**Dysphania ambrosioides* (L.)Mosyakin & Clemants— {AFP}

\**Dysphania multifida* (L.)Mosyakin & Clemants— {AFP}

\**Dysphania pumilio* R.Br.)Mosyakin & Clemants— {AFP}

### Froelichia {AFP}

*Froelichia floridana* (Nutt.)Moq.— {AFP}

### Gomphrena {AFP}

1. Inflorescence bright pink to purple ... *G. globosa*
1. Inflorescence whitish [2]
2. Stem and leaves pilose; leaf blade not succulent ... *G. serrata*
2. Stem and leaves glabrous; leaf blade succulent ... *G. vermicularis*

^ *Gomphrena globosa* L.—

\**Gomphrena serrata* L.— {AFP}

*Gomphrena vermicularis* L.— {AFP}

### Iresine {AFP}

1. Annual or short-lived perennial, not rhizomatous; tepals 0.6-0.8 mm long, 3-veined and obtuse at the tip; fruit 0.6-0.8 mm long, included in tepals ... *I. diffusa*
1. Rhizomatous perennial; tepals 1-1.3 mm long, faintly 1-veined and acute at the tip; fruit 1-1.5 mm long, exserted from tepals ... *I. rhizomatosa*

*Iresine diffusa* Humb. & Bonpl. ex Willd.— {AFP}

*Iresine rhizomatosa* Standl.— {AFP}

### Oxybasis {AFP}

\**Oxybasis glauca* (L.)S.Fuentes et al.— {AFP}

### Salicornia {AFP}

1. Perennial from a slender rhizome; basal stems often sprawling and branching with terminal erect stems; typically some stems not terminated by an inflorescence; dried inflorescence ca. 1-2 mm wide ... *S. ambigua*
1. Annual from a slender taproot; main stem usually erect and solitary at the base, many-branched apically, the branches ascending to erect; all stems terminating in an inflorescence; dried inflorescence ca. 2-3 mm wide ... *S. bigelovii*

*Salicornia ambigua* Michx.— {AFP}

*Salicornia bigelovii* Torr.— {AFP}

### Salsola {AFP}

\**Salsola kali* L. subsp. *pontica* (Pall.)Mosyakin— {AFP}

*Suaeda* {AFP}

*Suaeda linearis* (Elliott)Moq.— {AFP}

### CARYOPHYLLACEAE {AFP}

1. Stipules present, 2 interpetiolar and connate or 4 per node, white to silvery to tan to green, scarious, filiform, bristle-like, or broad [2]
  1. Stipules absent [8]
  2. Petals absent (sepals may be petaloid); fruit a 1-seeded utricle ... *Paronychia*
  2. Petals 5 (rarely absent or 3); fruit a many-seeded capsule [3]
  3. Leaves predominantly basal (often absent at maturity), cauline leaves scale-like with long internodes, the plant nearly leafless on the stem ... *Stipulicida*
  3. Leaves cauline (and sometimes basal), not scale-like, the plant appearing leafy [4]
  4. Cauline leaf blades elliptic, obovate, ovate, or orbicular, mostly 2-25 mm wide [5]
  4. Cauline leaf blades linear, 0.2-1.3 mm wide [6]
  5. Stems often long-creeping and sometimes rooting at distant nodes; leaf blade broadly ovate to orbicular; petals divided (often nearly to the base) into 2 or 4 lobes ... *Drymaria cordata*
  5. Stems generally not rooting at distant nodes; leaf blade elliptic to obovate; petals undivided ... *Polycarpon tetraphyllum*
  6. Larger leaf blades 0.8-2(2.5) cm long; flowers densely compact in the inflorescence dense, pedicels scarcely apparent; style 1 ... *Polycarpaea corymbosa*
  6. Larger leaf blades 2-6 cm long; flowers spaced and individually obvious in the inflorescence, pedicels conspicuous; styles 3 or 5 [7]
  7. Leaves densely clustered of 8-15 at the main stem nodes; styles, stigmas, and capsule valves 5 ... *Spergula arvensis*
  7. Leaves mostly in pairs along the main stem nodes; styles, stigmas, and capsule valves 3 ... *Spergularia marina*
  8. Sepals free (rarely connate at the base) [9]
  8. Sepals connate for most of their length [15]
  9. Flowers sessile; sepals present (greenish) 1-4 mm long; petals absent; fruit a 1-seeded utricle ... *Scleranthus annuus*
  9. Flowers usually pedicellate; sepals present; petals present or absent; fruit a many-seeded capsule [10]
  10. Petals bilobed or 2-fid(4-fid), divided at least  $\frac{1}{5}$  or more of the petal length, or petals absent [11]
  10. Petals unlobed, the apex obtuse to rounded (rarely notched), or petals absent [12]
  11. Capsules cylindrical, dehiscent by apical teeth ... *Cerastium*
  11. Capsules ovoid, dehiscent  $\frac{1}{4}$  or more of the length of the fruit by valves ... *Stellaria*
  12. Capsules dehiscent by 6 apical teeth; stigmas 3 ... *Arenaria*
  12. Capsule dehiscent  $\frac{1}{4}$  or more of the length of the fruit by 3-5 valves; stigmas 3-5 [13]
  13. Sepals and petals 1-3 mm long; capsule valves 4-5; stigmas 4-5 ... *Sagina decumbens*
  13. Sepals 2.5-5 mm long; petals 5-11 mm long; capsule valves 3-4; stigmas 3-4 [14]
  14. Densely branched at the base from a subterranean woody stem; leaves 2-8(13) mm long ... *Geocarpon*
  14. Matted weak stems at the base, without a subterranean woody stem; leaves 4-30 mm long ... *Sabulina*
  15. Calyx subtended by 4 involucrel bracteoles subequal to the calyx ... *Dianthus armeria*

- 15. Calyx not subtended by bracteoles [16]
- 16. Calyx and petals 1-4 mm long ... *Gypsophila paniculata*
- 16. Calyx and petals 6-62 mm long [17]
- 17. Calyx 25-62 mm long, lobes longer than tube ... *Agrostemma githago*
- 17. Calyx 6-28(-40) mm long, lobes usually shorter than or subequal to the calyx tube [18]
- 18. Styles 3 or 5, occasionally 4 (absent in staminate flowers); fruit valves 3-5 or splitting into 6-10 teeth [19]
- 18. Styles 2(3); fruit valves usually 4 [20]
- 19. Plant glabrous; seeds rugose ... *Atocion armeria*
- 19. Plant glabrate, pubescent, or glandular; seeds rugose, papillate, tuberculate, or reticulate ...  
*Silene*
- 20. Plants perennial; pedicels 1-6 mm long; calyx tubes terete; coronal appendages 2 ...  
*Saponaria officinalis*
- 20. Plants annual; pedicels (5)10-30(55) mm long; calyx tubes 5-angled or keeled; coronal appendages absent ... *Vaccaria hispanica*

### **Agrostemma {AFP}**

\**Agrostemma githago* L.— {AFP}

### **Arenaria {AFP}**

- 1. Perennial, often rhizomatous; leaves mostly 6-35 mm long, the blade 1-veined, linear-lanceolate to narrowly elliptic ... *A. lanuginosa*
- 1. Annual; leaves 2-7 mm long, the blade 3- to 5-veined, ovate to narrowly lanceolate [2]
- 2. Fruit cylindrical to cylindrical-ovoid, not significantly broader at base (walls nearly straight); seeds ca. 0.4 mm long ... *A. serpyllifolia* subsp. *leptocladus*
- 2. Fruit ovoid to ovoid-conic, broader at base; seeds 0.5-0.6 mm long ... *A. serpyllifolia* subsp. *serpyllifolia*

*Arenaria lanuginosa* (Michx.)Rohrb.— {AFP}

\**Arenaria serpyllifolia* L. subsp. *leptocladus* (Rchb.)Nyman— {AFP}

\**Arenaria serpyllifolia* L. subsp. *serpyllifolia*— {AFP}

### **Atocion {AFP}**

\**Atocion armeria* (L.)Raf.— {AFP}

### **Cerastium {AFP}**

- 1. Pedicels 0-4(5) mm long, subequal to shorter than the sepals and fruits ... *C. glomeratum*
- 1. Pedicels (2)5-15 mm long, subequal to longer than the sepals and fruits [2]
- 2. Stems densely silvery long-pilose; bracts or sepals herbaceous, not scarious ... *C. brachypetalum*
- 2. Stems short-pilose; bracts or sepals scarious-margined [3]
- 3. Perennial, often rhizomatous; sepals 5-7 mm long; fruit 9-17 mm long ... *C. fontanum* subsp. *vulgare*
- 3. Annual; sepals 3-5 mm long; fruit 4-7 mm long ... *C. semidecandrum*

\**Cerastium brachypetalum* Pers.— {AFP}

\**Cerastium fontanum* Baumg. subsp. *vulgare* (Hartm.)Greuter & Burdet— {AFP}

\**Cerastium glomeratum* Thuill.— {AFP}

\**Cerastium semidecandrum* L.— {AFP}

**Dianthus** {AFP}

\**Dianthus armeria* L.— {AFP}

**Drymaria** {AFP}

\**Drymaria cordata* (L.)Willd. ex Schult.— {AFP}

**Geocarpon** {AFP}

*Geocarpon carolinianum* (Walter)E.E.Schilling— {AFP}

**Gypsophila** {AFP}

\**Gypsophila paniculata* L.— {AFP}

**Paronychia** {AFP}

1. Leaf blade with spinulose mucro at the apex; sepals inconspicuously nerved, generally uniformly green in the distal half, gradually narrowed to a 0.3-0.4 mm long awn ... P. herniarioides

1. Leaf blade acute to obtuse at the apex; sepals strongly 3-nerved, generally with some white to red coloration in the distal half, rounded or with a mucro to 0.2 mm long [2]

2. Leaves and foliaceous bracts strongly and broadly revolute, broader towards the base, deltoid, ovate, to cordate (the upper lanceolate); flowers <1 mm long ... P. chartacea

2. Leaves and foliaceous bracts flat (or nearly so), narrowed towards the base, spatulate, oblanceolate to elliptic; flowers >1 mm long [3]

3. Flowers 2.3-3.5 mm long [4]

3. Flowers 1.1-2.2 mm long [5]

4. Primary stems usually 2 or more at the plant base, the unbranched region of the stem longer than the branched part of the plant; sepals without a subterminal cusp ... P. erecta

4. Primary stems 1, the unbranched region of the stem shorter than the branched part of the plant; sepals with an evident subterminal cusp ... P. rugelii

5. Flowers about as wide as long (excluding spreading sepal lobes), without a hypanthium; sepals free for most of their length and often ciliate ... P. baldwinii

5. Flowers longer than wide (excluding spreading sepal lobes), with a hypanthium; sepals connate and often pubescent in the lower half, constricted near the middle [6]

6. Sepals straight or nearly so, mucronate ... P. patula

6. Sepals distinctly hooded at the apex, mucro absent or subtle [7]

7. Primary stems 1 at the plant base, decumbent; flowers 1.0-1.6 mm long; sepals not enlarged or thickened at the base into tubercles ... P. americana

7. Primary stems usually 2 or more at the plant base, prostrate to procumbent; flowers 1.4-2 mm long; sepals enlarged or thickened at the base, tuberculate ... P. discoveryi)

*Paronychia americana* (Nutt.)Fenzl ex Walp.— {AFP}

*Paronychia baldwinii* (Torr. & A.Gray)Fenzl ex Walp.— {AFP}

*Paronychia chartacea* Fernald— {AFP} Endemic. Federally Threatened. State Endangered.

*Paronychia discoveryi* DeLaney— {AFP} Endemic.

*Paronychia erecta* (Chapm.)Shinners— {AFP}

*Paronychia herniarioides* (Michx.)Nutt.— {AFP}

***Paronychia minima*** (L.C.Anderson)J.J.Schenk & A.D.Appleton— {AFP} Endemic. State Threatened.

***Paronychia patula*** Shinnery— {AFP}

***Paronychia rugelii*** (Chapm.)Shuttlew. ex Chapm.— {AFP}

**Polycarpaea** {AFP}

\****Polycarpaea corymbosa*** (L.)Lam.— {AFP}

**Polycarpon** {AFP}

\****Polycarpon tetraphyllum*** (L.)L.— {AFP}

**Sabulina** {AFP}

***Sabulina paludicola*** (Fernald & B.G.Schub.)E.E.Schilling— {AFP} State Endangered.

**Sagina** {AFP}

***Sagina decumbens*** (Elliott)Torr. & A.Gray— {AFP}

**Saponaria** {AFP}

\****Saponaria officinalis*** L.— {AFP}

**Scleranthus** {AFP}

\****Scleranthus annuus*** L.— {AFP}

**Silene** {AFP}

1. Calyx 5-9 mm long [2]

1. Calyx 10-30 mm long [3]

2. Calyx glabrous; seeds dull gray-black ... *S. antirrhina*

2. Calyx pilose; seeds dark reddish brown ... *S. gallica*

3. Petals bright red [4]

3. Petals white, pink, to purplish [5]

4. Stem leafy, with 10 or more nodes of large leaves below the inflorescence; petals apex entire to notched ca. 1 mm long or less ... *S. regia*

4. Stem subscapose, with 2-4 nodes of reduced leaves below the inflorescence; petal apex 2-fid, the sinus >1 mm long ... *S. virginica*

5. Petal apices copiously lacerate ... *S. catesbaei*

5. Petal apices entire to 2-lobed [6]

6. Flowers unisexual; calyx lobes (4)5; styles (4)5 ... *S. latifolia*

6. Flowers bisexual; calyx lobes 6(8); styles 3(4) [7]

7. Plant to 20 cm tall; flowers diurnal; calyx 15-22 mm long, the lobes 1-3 mm long and obtuse ... *S. caroliniana*

7. Plant to 80 cm tall; flowers mostly nocturnal; calyx 12-15 mm long, the lobes 5-10 mm long and subulate ... *S. noctiflora*

***Silene antirrhina*** L.— {AFP}

***Silene caroliniana*** Walter— {AFP} State Endangered.

***Silene catesbaei*** Walter— {AFP} Federally Endangered. State Endangered.

\****Silene gallica*** L.— {AFP}

\**Silene latifolia* Poir.— {AFP}

\**Silene noctiflora* L.— {AFP}

*Silene regia* Sims— {AFP} State Endangered.

*Silene virginica* L.— {AFP} State Endangered.

### Spergula {AFP}

\**Spergula arvensis* L.— {AFP}

### Spergularia {AFP}

*Spergularia marina* (L.)Griseb.— {AFP}

### Stellaria {AFP}

1. Leaves of lower part of stem sessile to subsessile [2]

1. Leaves of lower part of stem petiolate (if sessile, then leaves not linear-lanceolate and flowers not solitary in the leaf axils) [3]

2. Leaves linear-lanceolate to narrowly lanceolate; inflorescence a terminal branched cyme; pedicels 10-30 mm long ... *S. graminea*

2. Leaves elliptic to broadly obovate; flowers solitary in leaf axils; pedicels 2-10 mm long ... *S. parva*

3. Pedicels 1-10 mm long; sepals 3-4 mm long; petals usually absent; stamens 0-3; fruit 2-4(5) mm long; seeds 0.5-0.9 mm wide ... *S. pallida*

3. Pedicels 3-40 mm long; sepals 3-8 mm long; petals usually present; stamens 3-10; fruit 3-6 mm long; seeds 0.9-2 mm wide [4]

4. Leaves mostly sessile and only short-petiolate near the base; stamens 10; seeds 1.5-2 mm wide ... *S. puber*

4. Leaves mostly distinctly long-petiolate along the stem, becoming sessile distally on the stem; stamens 3-8; seeds 0.9-1.3 mm wide

5. Leaf blade base broadly rounded to acute; seeds tuberculate ... *S. media*

5. Leaf blade base cordate to truncate; seeds stipitate-glandular ... *S. prostrata*

\**Stellaria graminea* L.— {AFP}

\**Stellaria media* (L.)Vill.— {AFP}

\**Stellaria pallida* (Dumort.)Crépin— {AFP}

\**Stellaria parva* Pedersen— {AFP}

*Stellaria prostrata* Baldwin— {AFP}

*Stellaria puber* Michx.— {AFP}

### Stipulicida {AFP}

1. Sepal margins lacerate-fimbriate; outer sepals often much shorter than inner sepals (usually by 0.1-0.5 mm); tips of the outer sepals with longest mucro (0.1)0.2-0.4(0.5) mm long ... *S. setacea* var. *lacerata*

1. Sepal margins entire, roughened-entire, to rough-undulate; outer sepals subequal to slightly shorter or longer than inner sepals (usually by 0.0-0.2 mm); tips of the outer sepals acute to obtuse or retuse-obcordate; with longest mucro 0-0.1 mm long ... *S. setacea* var. *setacea*

*Stipulicida setacea* Michx. var. *lacerata* C.W.James— {AFP}

*Stipulicida setacea* Michx. var. *setacea*— {AFP}

## Vaccaria {AFP}

\**Vaccaria hispanica* (Mill.)Rauschert— {AFP}

## AIZOACEAE {AFP}

1. Leaves alternate [2]

1. Leaves opposite [3]

2. Leaves sessile or subsessile; ovary superior ... *Aizoon secundum*

2. Leaves petiolate; ovary half-inferior ... *Tetragonia tetragonoides*

3. Leaves connate-perfoliate at the base ... *Carpobrotus edulis*

3. Leaves sessile or petiolate, not perfoliate [4]

4. Showy, colorful petals and petaloid stamens numerous; ovary inferior ... *Aptenia cordifolia*

4. Flowers only with petaloid sepals, petals and petaloid stamens absent; ovary superior [5]

5. Leaves of a pair at a node equal to subequal in size ... *Sesuvium*

5. Leaves of a pair at a node starkly unequal in size [6]

6. Leaf blade to 8 mm long, to 4 mm wide; ovary with 2(3) locules, 2(3) styles ... *Sesuvium humifusum*

6. Leaf blade to 40 mm long, to 30 mm wide; ovary with 1 locule, 1 style ... *Trianthema portulacastrum*

## Aizoon {AFP}

\**Aizoon secundum* L.f.— {AFP}

## Aptenia {AFP}

^ *Aptenia cordifolia* (L.f.)Schwantes— {AFP}

## Carpobrotus {AFP}

^ *Carpobrotus edulis* (L.)L.Bolus— {AFP}

## Sesuvium {AFP}

1. Petiole usually sharply distinct from the leaf blade, the margin of the lateral flaps of the petiole fimbriate; leaves of a pair at a node starkly unequal in size; leaf blade to 8 mm long, to 4 mm wide ... *S. humifusum*

1. Petiole usually gradually confluent with the leaf blade, the margin of the lateral flaps of the petiole entire; leaves of a pair at a node equal to subequal in size; leaves to 70 mm long, to 12 mm wide [2]

2. Annual; stems not rooting at nodes; leaves to 27 mm long; pedicel 0-1 mm long; sepal lobes 3-6 mm long; stamens 5 ... *S. maritimum*

2. Perennial; stems often rooting at nodes; leaves to 70 mm long; pedicel 3-20 mm long; sepal lobes 5-12 mm long; stamens 30 ... *S. portulacastrum*

\**Sesuvium humifusum* (Turpin)Bohley & G.Kadereit— {AFP}

*Sesuvium maritimum* (Walter)Britton et al.— {AFP}

*Sesuvium portulacastrum* (L.)L.— {AFP}

## Tetragonia {AFP}

\**Tetragonia tetragonoides* (Pall.)Kuntze— {AFP}

## Trianthema {AFP}



*Trianthema portulacastrum* L.— {AFP}

## GISEKIACEAE {AFP}

*Gisekia* {AFP}

\**Gisekia pharnacioides* L.— {AFP}

## AGDESTIDACEAE {AFP}

*Agdestis* {AFP}

\**Agdestis clematidea* Moç. & Sessé ex DC.— {AFP}

## PHYTOLACCACEAE {AFP}

1. Annual; leaves opposite or appearing whorled ... *Gisekia pharnacioides*

1. Perennial; leaves alternate [2]

2. Vine with stems arising from large above-ground tubers; inflorescence a panicle ... *Agdestis clematidea*

2. Herbs, shrubs, or vines without large above-ground tubers; inflorescence a raceme, spike, or dichasium [3]

3. Petioles to 1(1.5) cm long; leaves with a garlic-like or foul odor; inflorescence a virgate spike-like raceme; fruit an achene with reflexed spinose tips ... *Petiveria alliacea*

3. Petioles to 4(8) cm long; leaves lacking a garlic-like or foul odor; inflorescence a raceme, not virgate; fruit a berry [4]

4. Sepals 5(-8); carpels and styles 6-12; fruit 6-11 mm wide ... *Phytolacca americana*

4. Sepals 4; carpel 1, style absent or 1; fruit 2-6 mm wide [5]

5. Perennial herb to subshrub; stamens 4; style present; stigma capitate; berries red to orange or yellow ... *Rivina humilis*

5. Woody vine or shrub; stamens 8-13; style absent; stigma penicillate; berries black ...  
*Trichostigma octandrum*

### *Phytolacca* {AFP}

1. Fruiting pedicels >6 mm, longer than fruit; flowering part of racemes (10)12-30 cm long, drooping to spreading ... *Phytolacca americana* var. *americana*

1. Fruiting pedicels <7 mm, shorter than fruit; fertile part of racemes 6-9(14) cm long, erect to ascending, sometimes spreading ... *Phytolacca americana* var. *rigida*

*Phytolacca americana* L.— {AFP}

### *Trichostigma* {AFP}

*Trichostigma octandrum* (L.)H.Walter— {AFP} State Endangered.

## NYCTAGINACEAE {AFP}

1. Stem with supranodal thorns; leaves alternate; flowers included in and surrounded by conspicuous white or colored bracts (commonly cultivated, not or sparingly naturalized) ...

*Bougainvillea*

1. Stem with or without thorns; leaves alternate, subopposite, or opposite; flowers not surrounded by white or colored bracts [2]

2. Woody, vine, shrub or tree; flowers unisexual (plants dioecious); calyx lobes green, yellowish, to white; stigma penicillate [3]

- 2. Herbaceous, sometimes woody at the base; flowers bisexual; calyx lobes purplish to white; stigma capitate [4]
- 3. Fruit dry, glandular ... *Pisonia*
- 3. Fruit fleshy, berry-like, eglandular ... *Guapira*
- 4. Flowers subtended by foliaceous connate, bracts forming an involucre ... *Mirabilis jalapa*
- 4. Flowers ebracteate or subtended by narrow, small, distinct bracts that do not form an involucre [5]
- 5. Stems prostrate, decumbent, to erect; flowers usually several in clusters; fruits aerial, the peduncles not or only slightly elongating after anthesis, not penetrating the soil ... *Boerhavia*
- 5. Stems prostrate, rooting at some nodes; flowers solitary; fruits hypogeous, the peduncles greatly elongating after anthesis, penetrating the soil ... *Okenia hypogaea*

### **Boerhavia** {AFP}

- 1. Annual; calyx and fruit glabrous; perianth nearly white, often suffused with pink or purple between the lobes; fruit truncate at the apex ... *B. erecta*
- 1. Perennial, usually; calyx and fruit glandular; perianth usually uniformly pink to purple (rarely almost white), sometimes darker between the lobes; fruit rounded at the apex [2]
- 2. Leaves usually distributed throughout the plant; peduncle pubescent; flowers usually >5 per cluster; stamens exerted from the perianth ... *B. coccinea*
- 2. Leaves usually concentrated in the proximal ½ of the plant; peduncle glabrate; flowers usually 2-5 per cluster; stamens included to slightly exerted from the perianth ... *B. diffusa*

\**Boerhavia coccinea* Mill.— {AFP}

*Boerhavia diffusa* L.— {AFP}

*Boerhavia erecta* L.— {AFP}

### **Bougainvillea**

- 1. Flower tube hirsute-villous (hairs 0.25-1.25 mm long); leaf blade broadly ovate to nearly orbicular, the tip broadly rounded to abruptly acuminate, the base truncate to truncate-cuneate to nearly cordate ... *Bougainvillea spectabilis*
- 1. Flower tube glabrous, puberulent, to puberulent-villous (hairs <0.25 mm long); leaf blade various [3]
- 2. Leaf blade elliptic to ovate, the tip acuminate or rarely obtuse, the base cuneate to broadly cuneate ... *Bougainvillea glabra*
- 2. Leaf blade broadly ovate to nearly orbicular, the tip broadly rounded to abruptly acuminate, the base truncate to truncate-cuneate to nearly cordate ... *Bougainvillea buttiana*

^ *Bougainvillea* × *buttiana* Holttum & Standl.—

^ *Bougainvillea glabra* Choisy—

^ *Bougainvillea spectabilis* Willd.—

### **Guapira** {AFP}

- 1. Petiole ca. 0.5-1 mm wide, 4-20 mm long; leaf blades 1-3 cm wide, 1-6 times as long as the petiole, cuneate to attenuate at the base ... *G. discolor*
- 1. Petiole ca. 1.5-2 mm wide, 1-9 mm long; leaf blades mostly 2-4 cm wide, 6-15 times as long as the petiole, truncate to cuneate at the base ... *G. obtusata*

***Guapira discolor*** (Spreng.) Little— {AFP} A moderately to copiously pubescent form from the Keys was afforded varietal rank (under *Pisonia* as var. *floridana*; Ward 2004).

***Guapira obtusata*** (Jacq.) Little— {AFP}

**Mirabilis** {AFP}

\****Mirabilis jalapa*** L.— {AFP}

**Okenia** {AFP}

***Okenia hypogaea*** Schtdl. & Cham.— {AFP} State Endangered.

**Pisonia** {AFP}

1. Vine; stems usually armed in some places with recurved axillary thorns, often with stout persistent branched thorns on the trunk; leaf blade usually with 5 or less obscure to conspicuous secondary veins on each side of the midrib, the tip typically acuminate; fruit with rows of stalked glands along the entire length ... *P. aculeata*

1. Shrub or small tree; stems unarmed; leaf blade usually with 5 or more very conspicuous secondary veins on each side of the midrib, the tip rounded; fruit with rows of stalked glands only in the upper half ... *P. rotundata*

***Pisonia aculeata*** L.— {AFP}

***Pisonia rotundata*** Griseb.— {AFP} State Endangered.

**PETIVERIACEAE** {AFP}

**Petiveria** {AFP}

***Petiveria alliacea*** L.— {AFP}

**Rivina** {AFP}

***Rivina humilis*** L.— {AFP}

**BASELLACEAE** {AFP}

1. Perennial; stems not succulent; flowers pedicellate; sepals membranous, spreading at anthesis ... *Anredera*

1. Annual; stems succulent; flowers sessile to subsessile; sepals fleshy, barely opening at anthesis ... *Basella alba*

**Anredera** {AFP}

1. Larger leaf blades subtending inflorescence mostly cordate at the base with a broad sinus (sometimes the blade also attenuate along the petiole); bract subtending flower bilobed and cup-like, persistent; sepal not winged in fruit; sometimes with axillary tubers ... *A. cordifolia*

1. Larger leaf blades subtending inflorescence only tapering at the base, lacking a sinus at the base; bracts subtending flower 2, distinct, deciduous; sepal winged in fruit; without axillary tubers ... *A. vesicaria*

\****Anredera cordifolia*** (Ten.) Steenis— {AFP}

\****Anredera vesicaria*** (Lam.) C.F. Gaertn.— {AFP}

**Basella** {AFP}

^ ***Basella alba*** L.— {AFP}

## MOLLUGINACEAE {AFP}

### Mollugo {AFP}

\**Mollugo verticillata* L.— {AFP}

## CACTACEAE {AFP}

1. Leaves persistent, with broad, flat blades; flowers in paniculiform, corymbiform, or aggregate cymes ... *Pereskia*

1. Leaves caducous, small and terete, vestigial, or absent; flowers solitary from the areoles [2]

2. Stems flattened (rarely subcylindric); areoles evenly distributed on stems, usually bearing minute, barbed bristles (glochids); inner flower petals brightly colored (red to yellow) [3]

2. Stems cylindric to flattened; areoles restricted to ribs, angles, and edges of stem, lacking glochids (areoles evenly distributed on cylindric stems of *Rhipsalis*); inner flower petals whitish [4]

3. Stems indeterminate, elongate, unsegmented; flower and fruit areoles usually spiny ...

*Consolea corallicola*

3. Stems determinate, elliptic, ovate, orbicular, to obovate, segmented; flower and fruit areoles not spiny ... *Opuntia*

4. Branches <7 mm wide in diameter; flowers rotate, <2 cm long; floral tube obsolete; perianth segments less than 12 ... *Rhipsalis*

4. Branches more than 7 mm in diameter; flowers funnellform, salverform, or campanulate, >4 cm long; floral tube elongate; perianth segments more than 12 [5]

5. Vines or epiphytes; stems with adventitious roots [6]

5. Clambering to erect shrubs or trees; stems without adventitious roots (unless broken or fallen to ground) [7]

6. Stems flat (basally cylindric), rarely 3-winged ... *Epiphyllum phyllanthus* var. *hookeri*

6. Stems 3-8 ribbed, angled, or winged, rarely 2-winged ... *Selenicereus*

7. Stems with 3-5 ribs; usually at least some flower and fruit areoles with a few spines ...

*Acanthocereus*

7. Stems with 8-14 ribs; flower and fruit areoles without spines [8]

8. Shrubs or rarely tree-like; stems slender, <3.5 cm wide distally, usually; flower tube areoles pilose, the tube scales with acute apices; fruit with several areoles ... *Harrisia*

8. Tree-like; stems stout, >3.5 cm wide distally; flower tube areoles glabrous, the tube scales rounded at the tip; fruit often with few to no areoles [9]

9. Stem ribs usually 6; flowers 15-25 cm long ... *Cereus hexagonus*

9. Stem ribs 9-14; flowers 4-6 cm long ... *Pilosocereus*

***Acanthocereus* {AFP}** The taxonomy of *Acanthocereus* is not well resolved and there at least two different taxa in Florida.

1. Plants weak, mostly subshrubs to vines; stems 2-7(9) cm wide; spines elongate and slender, mostly 1-4 cm long ... *A. tetragonus* (native form)

1. Plants robust, shrubby; stems 9-20 cm wide; spines short and stout, mostly 0.5-2 cm long ... *A. tetragonus* (non-native form)

***Acanthocereus tetragonus* (L.) Hummelinck— {AFP}** State Threatened.

^ *Acanthocereus tetragonus* (L.) Hummelinck— A stout, robust form is often cultivated, but clearly does not represent the native form. Perhaps it is an infraspecific taxon of the same native species or they represent different species.

### Cereus {AFP}

\* *Cereus hexagonus* (L.) Mill.— {AFP} This arborescent cactus is commonly cultivated in Florida and the West Indies, and native to northern South America. It is often misidentified as *C. repandus*, a species with much shorter flowers (5-11 cm long) (Britton & Rose 1920:17-18). The name *C. lepidotus* might possibly be more applicable to this species here, such that *C. hexagonus* could be misapplied here (Taylor & Zappi 2019). This species is only weakly distinguished from *C. jamacuru* (native to eastern Brazil), which tends to have more numerous spines, often robust and long, with stout protruding areoles. Another similar species is *C. hildmannianus* (native to southern Brazil to eastern Argentina), which tends to have stout areoles with fewer, somewhat short spines, outer tepals often reddish (vs. reddish to more greenish tepals in the other species), and fruit yellow to red, splitting from the apex (vs. red fruits often a lateral split in the other species). The name *Cereus peruvianus* is widely misapplied, but it is currently treated as a synonym of *C. repandus* (see Hunt & Taylor 1992).

### Consolea {AFP}

*Consolea corallicola* Small— {AFP} Endemic. Federally Endangered. State Endangered.

### Epiphyllum {AFP}

^ *Epiphyllum hookeri* Haw.— {AFP}

### Harrisia {AFP}

1. Spines to 1.5 cm long; scales 4.5-8.0 mm long at middle of hypanthium; pericarpel and immature fruit green; mature fruit yellow ... H. aboriginum
2. Spines to 3.5 cm long; scales 7.0-10.3 mm long at middle of hypanthium; pericarpel and immature fruit reddish green to purple; mature fruit orange to red ... H. fragrans

*Harrisia aboriginum* Small ex Britton & Rose— {AFP} Endemic; Manatee south to Lee Co. Coastal strand. Federally Endangered. State Endangered.

*Harrisia fragrans* Small ex Britton & Rose— {AFP} Endemic. Federally Endangered. State Endangered.

### Kroenleinia

^ *Kroenleinia grusonii* (Hildm.) Lodé—

*Opuntia* {AFP} Fruits were probably consumed by indigenous people (Tuross et al. 1994).

*Opuntia anahuacensis* Griffiths (described from eastern Texas) is sometimes applied to panhandle populations. *Opuntia tunoidea* Gibbes (type from South Carolina) is sometimes applied to north FL material.

1. Spines absent; inner petaloid tepals red and appressed; stamens and style much exerted beyond the tepals ... *O. cochenillifera*

1. Spines present or absent; inner petaloid tepals yellow (rarely reddish) and spreading; stamens and style not exerted beyond the tepals [2]
2. Surface of cladodes (stem segments) pubescent ... *O. leucotricha*
2. Surface of cladodes (stem segments) glabrous [3]
3. Mature cladodes 10-60 cm long, usually with >15 areoles per face (not counting areoles along the margin), often without spines, glochids conspicuous or inconspicuous [4]
3. Mature cladodes mostly 8-25 cm long, with <15 areoles per face (not counting areoles along the margin), with or without spines, usually with conspicuous glochids to 4 mm long [5]
4. Mature cladodes mostly (25)30-60 cm long, with inconspicuous glochids to 2 mm long ... *O. ficus-indica*
4. Mature cladodes mostly 10-20 cm long, replete with conspicuous tufts of glochids ... *O. microdasys*
5. Distal cladodes with 1-2 areoles per diagonal row per face, narrowly ovate, elliptic, to linear, mostly 1-2.5 cm wide, subcylindric to slightly flattened, loosely attached and readily disarticulating; spines strongly barbed apically ... *O. drummondii*
5. Distal cladodes with 2-4 areoles per diagonal row per face, obovate to elliptic, mostly 2.5-16 cm wide, flattened, firmly attached or readily disarticulating; spines barbed apically or not [6]
6. Spines disposed from areoles in a stellate pattern or in different planes, ascending to spreading or recurved, sometimes absent; radial spines numerous, few, or absent; young spines yellow to dark yellow [7]
6. Spines disposed from areoles mostly in the same plane and perpendicular to the stem, sometimes absent; radial spines 0-1; young spines red, brown, whitish, or dark yellow [9]
6. Spines yellow to dark yellow, becoming gray in age, length often >1/3 width of the stem, mostly straight to slightly curved and mostly nearly perpendicular to the stem; stem segments entire to slightly undulate ... *O. ochrocentra*
6. Spines yellow to dark yellow, length mostly <1/3 width of the stem, often spreading and curved; stem segments often with a scalloped or undulate margin [7]
7. Tepals pale pinkish orange or peach-colored ... *O. keyensis*
7. Tepals yellow [8]
8. Cladode margins undulate-tuberculate; areoles usually with abundant, robust spines; spines often strongly flattened at base ... *O. dillenii*
8. Cladode margins subentire to lightly undulate; areoles usually with few, short spines; spines often round to slightly flattened at base ... *O. stricta*
9. Mature spines reddish, with alternating light and dark bands, margins often undulating, length generally <1/2 the width of the stem ... *O. zebrina*
9. Mature spines generally uniformly gray, margins straight to faintly undulating, length sometimes >half the width of the stem [10]
10. Plants forming clumps; cladodes 3.2-13.5 cm long, 2.4-6.7 cm wide, and 6.5-15.8 mm thick, easily disarticulating; caducous leaves 3.5-7.0 mm long; spines strongly retrorsely barbed to the touch; fruits 2.1-3.0 cm long; seeds 3.1-3.6 mm long ... *O. abjecta*
10. Plants forming mats, clumps, or erect shrubs; cladodes 3.1-24(29.5) cm long, 2-9.5 cm wide, and 3.6-19.9 mm thick, usually not easily disarticulating (sometimes easily disarticulating in summer months in *O. mesacantha*); caducous leaves 4.8-13.8 mm long; spines strongly barbed or not; fruits 2.1-5.0 cm long; seeds 3.9-5.7 mm long [11]
11. Erect shrubs (developing a definite erect trunk), 0.3-2 m tall, with thick tuberous rootstock, the stems strongly ascending or erect; cladodes obovate to elliptic, rarely completely round, often relatively strongly narrowed and acute at the base, sometimes slightly glaucous, never cross wrinkling unless under severe drought stress, 6.5-29.5 cm long, 3.7-9.5 cm wide, 6.4-10.9

mm thick; pericarpel often <2 times as long as wide (when fresh); seeds 3.9–4.7 mm long ... *O. austrina*

11. Small shrubs in clumps or mats (trunk not evident or poorly formed), 0.1–0.5 m tall, roots mostly cord-like or fibrous, the stems weakly ascending, decumbent or trailing; cladodes mostly obovate, rotund, or elliptic, often relatively broadly rounded at the base, not glaucous, often cross-wrinkling during the winter, 3.1–17.7 cm long, 2–9 cm wide, 3.6–19.9 mm thick; pericarpel often >2 times as long as wide (when fresh); seeds 4.7–5.9 mm long [12]

12. Cladodes typically scalloped-margined, elliptical or rotund; spines delicate, 0.7–0.9 mm in diameter; seeds with the funicular envelope smooth, only moderate, if any, protrusion of the cotyledons and hypocotyl ... *O. mesacantha* subsp. *lata*

12. Cladodes typically smooth-margined, obovate or rotund; spines robust, 0.95–1.3 mm in diameter; seeds with the funicular envelope bumpy, cotyledons and hypocotyl noticeably protruding ... *O. mesacantha* subsp. *mesacantha*

***Opuntia abjecta*** Small ex Britton & Rose— {AFP} Endemic. State Endangered.

***Opuntia austrina*** Small— {AFP} Endemic.

\****Opuntia cochenillifera*** (L.) Mill.— {AFP} Naturalized occasionally, probably often due to vegetative spread by humans. Frequently cultivated.

***Opuntia dillenii*** (Ker Gawl.) Haw.—

***Opuntia drummondii*** Graham— {AFP}

^ *Opuntia engelmannii* var. *cacanapa* (Griffiths & Hare) D. Weniger—Cultivated in street plantings (syn. *O. ellisiana*).

^ *Opuntia engelmannii* var. *lindheimeri* (Engelm.) B.D. Parfitt & Pinkava—Sparingly cultivated.

^ *Opuntia ficus-indica* L.— {AFP} Cultivated, scarcely naturalized.

^ *Opuntia leucotricha* DC.— {AFP} Putatively naturalized historically.

***Opuntia mesacantha*** Raf. subsp. *lata* (Small) Majure— {AFP}

***Opuntia mesacantha*** Raf. subsp. *mesacantha*— {AFP}

^ *Opuntia microdasys* (Lehm.) Pfeiff.—Possibly naturalized in the Keys; otherwise only cultivated.

***Opuntia ochrocentra*** Small ex Britton & Rose— {AFP} Endemic.

***Opuntia stricta*** (Haw.) Haw.— {AFP} State Threatened.

***Opuntia zebrina*** Small— Endemic. Cape Sable (type) and Lower Keys.

## ***Pereskia*** {AFP}

1. Clambering shrub or vine; spines dimorphic, those of the young branches recurved, those of the older branches straight; flowers many in a paniculiform or corymbiform cyme; filaments white ... *P. aculeata*

1. Shrub or tree; spines of one kind, all straight; flowers few in a terminal aggregate cyme; filaments red ... *P. grandifolia*

^ *Pereskia aculeata* Mill.— {AFP}

^ *Pereskia grandifolia* Haw.— {AFP}

## ***Pilosocereus*** {AFP}

1. Flowering areoles densely woolly with silken hairs >8 mm long and tomentose with short hairs ... *P. millspaughii*

1. Flowering areoles tomentose only, hairs <5 mm long ... *P. robinii*

***Pilosocereus millspaughii*** (Britton) Byles & G.D. Rowley— {AFP}

***Pilosocereus robinii*** (Lem.) Byles & G.D. Rowley— {AFP} Federally Endangered. State Endangered.

### **Rhipsalis** {AFP}

1. Stems monomorphic, the segments cylindrical or slightly winged and usually glabrate; flowers rotate ... *R. baccifera*

1. Stems heteromorphic, the basal segments cylindrical, the distal ones shorter, cylindrical or clavate and usually pilose; flowers campanulate or funnelform ... *R. cereuscula*

***Rhipsalis baccifera*** (Sol.) Stearn— {AFP} State Endangered. Extirpated.

^ *Rhipsalis cereuscula* Haw.— {AFP}

### **Schlumbergera**

^ *Schlumbergera truncata* (Haw.) Moran—

### **Selenicereus** {AFP}

1. Stems 3-ribbed usually; flower and fruit areoles without conspicuous trichomes; bracts of fruit persistent ... *S. undatus*

1. Stems with 4-8 ribs; flower and fruit areoles with conspicuous trichomes or spines; bracts of fruits withering-deciduous [2]

2. Stems with 5-8 ribs, areoles with 6-18 spines, these 4-12(15) mm long ... *S. grandiflorus*

2. Stems with 4-6 ribs, areoles with 1-5 spines, these often 1-3 mm long, occasionally longer ... *S. pteranthus*

\* ***Selenicereus grandiflorus*** (L.) Britton & Rose— {AFP}

\* ***Selenicereus pteranthus*** (Link ex A. Dietr.) Britton & Rose— {AFP}

\* ***Selenicereus undatus*** (Haw.) D.R. Hunt— {AFP}

## **PORTULACACEAE** {AFP}

### **Portulaca** {AFP}

1. Leaf axils without trichomes or these inconspicuous and <1 mm long [2]

1. Leaf axils with conspicuous trichomes, mostl >3 mm long [3]

2. Primary root tuberous, with filamentous fibrous roots; stems to 3 cm long; leaf blade to 5 mm long; style lobes 3; in pockets within exposed, surficial flat rock among pine rocklands or rockland hammock ... *P. minuta*

2. Roots slender and uniformly attenuate, with filamentous fibrous roots; stems to 30 cm long; leaf blade to 30 mm long; styles lobes 4-6; various disturbed habitats ... *P. oleracea*

3. Leaf blades 3-8 mm wide, broadly oblanceolate ... *P. amilis*

3. Leaf blades 1-2.5 mm wide, subterete, subulate to linear-oblanceolate [4]

4. Flowers 2.5-5.5 cm wide; petals 15-25 mm long; seeds 0.75-1 mm wide ... *P. grandiflora*

4. Flowers 0.5-1.5 cm wide; petals 3-8 mm long; seeds 0.4-0.7 mm wide [5]

5. Primary stems mostly herbaceous; petals pink to purple; capsule cap conic; seeds black ... *P. pilosa*

5. Primary stems somewhat woody; petals yellow to whitish; capsule cap hemispheric; seeds mostly brownish ... *P. rubricaulis*

\* ***Portulaca amilis*** Speg.— {AFP}



^ *Portulaca grandiflora* Hook.— {AFP}

***Portulaca minuta*** Correll— {AFP}

***Portulaca oleracea*** L.— {AFP}

***Portulaca pilosa*** L.— {AFP}

***Portulaca rubricaulis*** Kunth— {AFP}

## TALINACEAE {AFP}

### Talinum {AFP}

1. Inflorescence racemose; pedicel 3-angled, distinctly thicker distally; petals >6mm long; stigma 1, 3-lobed ... T. fruticosum

1. Inflorescence paniculate; pedicel terete, mostly uniformly slender; petals <7 mm long; stigmas 3, linear ... T. paniculatum

\****Talinum fruticosum*** (L.)Juss.— {AFP}

\****Talinum paniculatum*** (Jacq.)Gaertn.— {AFP}

## SANTALALES

### SANTALACEAE {AFP}

#### Santalum {AFP}

^ *Santalum album* L.— {AFP}

### VISCACEAE {AFP}

#### Phoradendron {AFP}

1. Stem internodes somewhat angled or quadrangular; scale-like leaves (cataphylls) at the base of a branch (generally sheathing or appressed to the stem) perpendicular to the midrib of the subtending leaf (transverse basal phyllotaxy); fruit white to yellowish white ... P. leucarpum

1. Stem internodes terete; scale-like leaves (cataphylls) at the base of a branch (generally sheathing or appressed to the stem) in line or the same plane as the midrib of the subtending leaf and branch, its back to the stem or midrib (median basal phyllotaxy); fruit yellow to orange to reddish ... P. rubrum

***Phoradendron leucarpum*** (Raf.)Reveal & M.C.Johnst.— {AFP}

***Phoradendron rubrum*** (L.)Griseb.— {AFP} State Endangered.

### SCHOEPIACEAE {AFP}

#### Schoepfia {AFP}

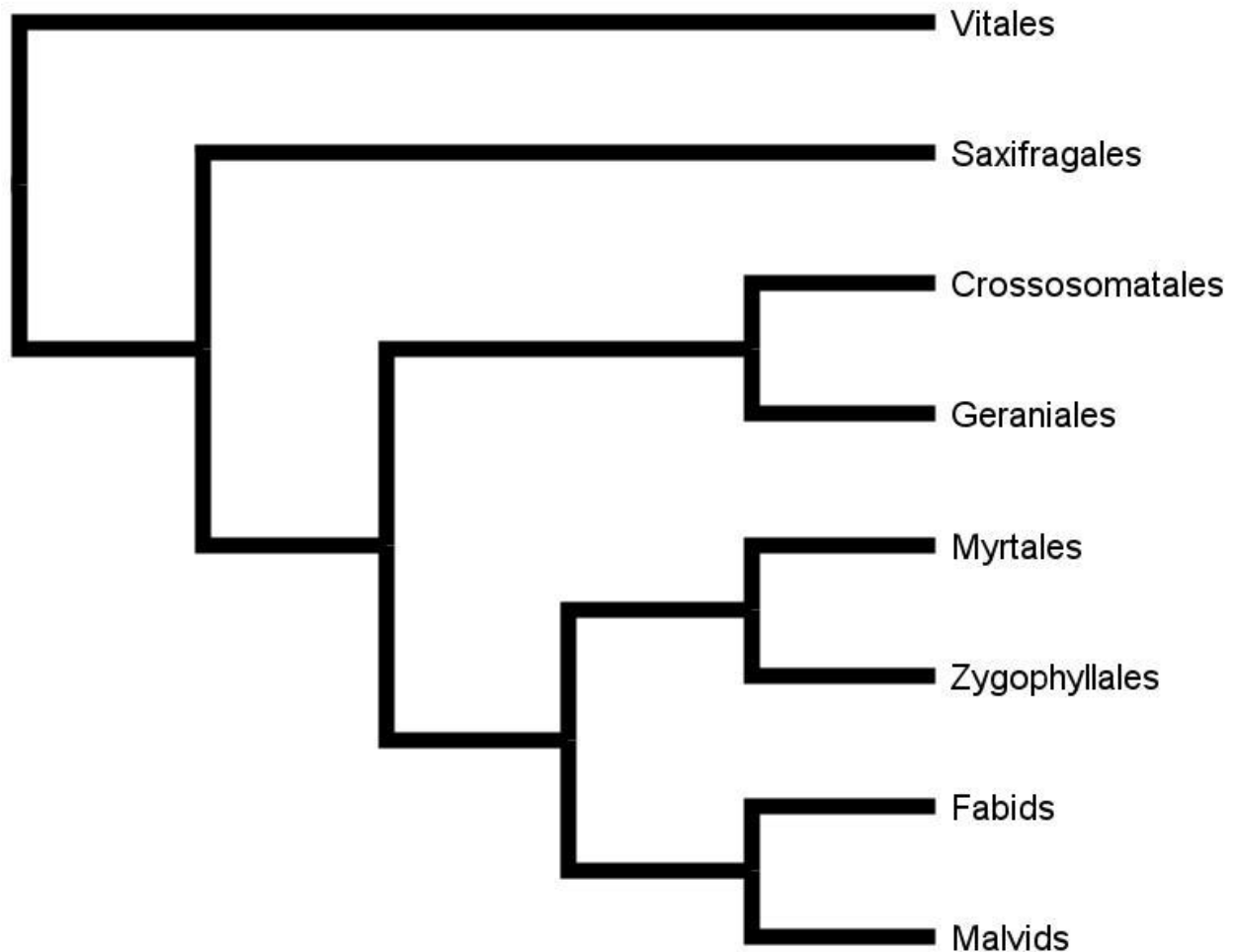
***Schoepfia schreberi*** J.F.Gmel.— {AFP}

### XIMENIACEAE {AFP}

#### Ximenia {AFP}

***Ximenia americana*** L.— {AFP}

## ROSIDS



## VITALES

### VITACEAE {AFP}

- 1. Leaves simple [2]
- 1. Leaves compound [4]
  - 2. Pith brown; inflorescence a thyrses; petals connate distally ... *Vitis*
  - 2. Pith white; inflorescence corymb-like cyme; petals free [3]
    - 3. Tendrils 2-branched; petals and stamens 5 ... *Ampelopsis cordata*
    - 3. Tendrils unbranched; petals and stamens 4 ... *Cissus*
  - 4. Leaves bi- to tripinnately compound ... *Nekemias arborea*
  - 4. Leaves trifoliolate or palmately compound [5]
    - 5. Leaves palmately compound ... *Parthenocissus quinquefolius*
    - 5. Leaves trifoliolate [6]
      - 6. Leaflet blade truncate at base, distinct from petiolule; inflorescence axillary; seeds usually 1 per fruit ... *Causonis trifolia*
      - 6. Leaflet blade usually decurrent along petiolule; inflorescence leaf-opposed; seeds 2-4 per fruit ... *Cissus trifoliata*

### *Ampelopsis* {AFP}

***Ampelopsis cordata*** Michx.— {AFP}

**Causonis** {AFP}

\****Causonis japonica*** (Thunb.)Raf.— {AFP}

\****Causonis trifolia*** (L.)Mabb. & J.Wen— {AFP}

**Cissus** {AFP}

1. Young stems strongly quadrangular, >7 mm wide ... *C. quadrangularis*

1. Young stems terete to obscurely angular, <5 mm wide [2]

2. Leaves trifoliolate ... *C. trifoliata*

2. Leaves simple (plant sometimes with densely-branched leafless growths caused by *Mycosyrinx* fungus) ... *C. verticillata*

\****Cissus quadrangularis*** L.— {AFP}

***Cissus trifoliata*** (L.)L.— {AFP}

***Cissus verticillata*** (L.)Nicolson & C.E.Jarvis— {AFP}

**Nekemias** {AFP}

***Nekemias arborea*** (L.)J.Wen & Boggan— {AFP}

**Parthenocissus** {AFP}

***Parthenocissus quinquefolia*** (L.)Planch.— {AFP}

**Vitis** {AFP}

1. Bark rather smooth, tightly adherent; stems below new growth with conspicuous lenticels; pith continuous at the nodes; tendrils unbranched; leaf blades unlobed, coarsely toothed, the surfaces glabrous to glabrate (sometimes hirtellous on the veins) [2]

1. Bark furrowed, in longitudinal strips and fibers, sometimes peeling; lenticels inconspicuous; pith with diaphragms at the nodes; tendrils branched; leaf blades lobed or unlobed, coarsely to shallowly toothed, the surfaces glabrous to densely hairy [4]

2. Inflorescence of 2-8 berries, the berry >1.5 cm wide, thick-skinned with moderate pulp, with lenticels; seed <7 mm long; panhandle and north Florida ... *V. rotundifolia*

2. Inflorescence of 4-30 berries, the berry <1 cm wide, thin-skinned with little pulp, lacking lenticels; seed <7 mm long; mostly peninsular Florida [3]

3. Leaf blades mostly 4-8 cm wide, with 8 or more teeth per side; raphe of seed broad and rounded; various habitats of the peninsula ... *V. munsoniana*

3. Leaves 2-3.5 cm wide, with 7 or fewer teeth per side; raphe of seed narrow and ridged; vines usually shrub-like or trailing, at times weakly climbing scrub of Polk, Highlands Counties) ... *V. munsoniana* var. *pygmaea*

4. Leaf blade densely white, gray-white, to reddish white tomentose on the lower surface, the surface (except the veins) not visible ... *V. shuttleworthii*

4. Leaf blade glabrate to arachnoid on the lower surface, the surface generally visible [5]

5. Leaves arachnoid to hirtellous, especially on the lower surface, rarely subglabrous; teeth of leaf blade often shallow, less frequently pronounced with a wide triangular base, usually ca. 1 mm long or less [6]

5. Mature leaf blades glabrous or with pubescence limited to tufts of hairs in axils of main veins on lower surface and sometimes on upper petiole, green beneath; teeth of leaf blade mostly pronounced on a wide triangular base, usually >1 mm high [7]

6. Young stems terete, nodes not red-banded; leaf blade unlobed to deeply lobed, the lower surface glaucous (sometimes somewhat obscured by hairs); fruits 8-20 mm wide, glaucous; generally of mesic to xeric habitats ... *V. aestivalis*
6. Young stems slightly to distinctly angled, nodes sometimes red-banded; leaf blade unlobed to obscurely lobed, the lower surface not glaucous; fruits 4-8 mm wide, not or slightly glaucous; generally of mesic to hydric habitats ... *V. simpsonii*
7. Flowers bisexual; fruit longer than wide, skin adherent to pulp ... *V. vinifera*
7. Flowers unisexual; fruit about as long as wide, skin separable from pulp [8]
8. Young stems purplish red to reddish chestnut; nodal diaphragm 2.5-4 mm thick; leaf blade lobed, the lobes acuminate ... *V. palmata*
8. Young stems gray, green, brown, or suffused purplish partially or on one side only; nodal diaphragm 1-2.5 mm thick; leaf blade unlobed or obscurely lobed, the lateral lobes acute (rarely acuminate), the central lobe acute to acuminate ... *V. vulpina*

***Vitis aestivalis*** Michx.— {AFP}

***Vitis munsoniana*** J.H.Simpson ex Planchon—

***Vitis palmata*** Vahl— {AFP}

***Vitis rotundifolia*** Michx.— {AFP}

***Vitis shuttleworthii*** House— {AFP} Endemic.

***Vitis simpsonii*** Munson— {AFP}

^ *Vitis vinifera* L.— {AFP}

***Vitis vulpina*** L.— {AFP}

## SAXIFRAGALES

### ALTINGIACEAE {AFP}

#### Liquidambar {AFP}

1. Leaf blades primarily 3-lobed ... *L. formosana*

1. Leaf blades primarily 5-lobed ... *L. styraciflua*

^ *Liquidambar formosana* Hance—

***Liquidambar styraciflua*** L.— {AFP} The resin has been used as a source of storax or styrax ([Anonymous 1930](#)) and as a chewing gum ([Hale 1853](#)).

### HAMAMELIDACEAE {AFP}

1. Leaf blade 1-4.5 cm long, unlobed, entire ... *Loropetalum chinense*

1. Larger leaf blades 4-16 cm long, toothed, sinuate, or lobed [2]

2. Leaf blade toothed primarily at the apex, the underside densely stellate-pubescent; inflorescence terminal, elongate, 8- to 30-flowered spikes; calyx lobes 5-7(-9), erect; petals absent; stamens 12-34; filaments white, 4-17 mm; staminodes absent; capsules in groups of more than 3 ... *Fothergilla milleri*

2. Leaf blade margin repand to sinuate, the underside glabrous to sparsely stellate-pubescent; inflorescence axillary, (1-)3(-5)-flowered clusters; calyx lobes 4, reflexed; petals 4, liguliform, yellow or reddish, deep red to orange; stamens 4, very short; staminodes 4; capsules solitary or 2-3 together ... *Hamamelis*

#### Fothergilla {AFP}

***Fothergilla milleri*** W.D.Phillips & J.E.Haynes— {AFP} State Endangered.

## Hamamelis {AFP}

1. Sepals and petals red to red and pale yellow; flowering late Dec-Feb ... *H. ovalis*
1. Sepals and petals yellow-green to yellow; flowering Nov-mid Dec ... *H. virginiana*

***Hamamelis ovalis*** S.W.Leonard— {AFP}

***Hamamelis virginiana*** L.— {AFP} Traditionally used for various medicinal applications, and to produce the modern astringent witch hazel extract, especially from the bark of young stems and twigs (Fulling 1953).

## Loropetalum {AFP}

^ *Loropetalum chinense* (R.Br.)Oliv.— {AFP}

## CRASSULACEAE {AFP}

1. Leaf blades 20-150 mm long; petals united for much of their length ... *Kalanchoe*
1. Leaf blades 2-20 mm long; petals free or only slightly connate at the base ... *Sedum*

## Kalanchoe {AFP}

1. Leaf blade ovate to obovate, mostly <1.7 times longer than wide [2]
1. Leaf blade or leaflets subterete, lanceolate, to elliptic, mostly >1.7 times longer than wide [3]
2. Leaves green, yellowish, whitish, to reddish green; flowers erect ... *K. blossfeldiana*
2. Leaves gray-green to bluish green; flowers pendent ... *K. fedtschenkoi*
3. Flowers erect ... *K. crenata*
3. Flowers pendent [4]
4. Leaves simple or compound, scarcely paler below; calyx 2.5-5 cm long, lobed only at the tip; corolla lobed only at the tip and reddish only at the tip ... *K. pinnata*
4. Leaves simple, paler below and often dark-mottled; calyx 0.6-1.6 cm long, deeply lobed; corolla deeply lobed and reddish throughout except for the nectar chamber [5]
5. Leaf blade subterete, toothed only near the tip ... *K. delagoensis*
5. Leaf blade flattened, toothed along most of the margin [6]
6. Larger leaf blades >3 cm wide, triangular to lanceolate, with teeth at the base of the blade below the widest point, the blade base auriculate, cordate, to truncate (broadly cuneate in immature plants) ... *K. daigremontiana*
6. Leaf blades <3 cm wide, narrowly lanceolate, usually without teeth at the base of the blade below the widest point, the blade base cuneate to subtruncate ... *K. ×houghtonii*

^ *Kalanchoe blossfeldiana* Poelln.— {AFP}

^ *Kalanchoe crenata* (Andrews)Haw.— {AFP}

^ *Kalanchoe daigremontiana* Raym.-Hamet & H.Perrier— {AFP}

\* *Kalanchoe delagoensis* Eckl. & Zeyh.— {AFP}

\* *Kalanchoe ×houghtonii* D.B.Ward— {AFP}

^ *Kalanchoe fedtschenkoi* Raym.-Hamet & H.Perrier— {AFP}

\* *Kalanchoe pinnata* (Lam.)Pers.— {AFP}

## Sedum {AFP}

1. Leaves alternate, the blade 2-8 mm long ... *S. acre*
1. Leaves whorled, the blade 8-25 mm long [2]

2. Leaves 4(-5) per whorl, blade linear-elliptic or linear-lanceolate; flowering shoots erect ... *S. mexicanum*

2. Leaves 3(-4) per whorl, blades narrowly rhombic-elliptic to widely lanceolate; flowering shoots creeping or ascending ... *S. sarmentosum*

^ *Sedum acre* L.— {AFP}

^ *Sedum adolphi* Raym.-Hamet—

^ *Sedum mexicanum* Britton— {AFP}

^ *Sedum sarmentosum* Bunge— {AFP}

## HALORAGACEAE {AFP}

1. Leaves whorled, pseudowhorled, or opposite, occasionally alternate; flowers 4-merous ... *Myriophyllum*

1. Leaves alternate; flowers 3-merous ... *Proserpinaca*

## *Myriophyllum* {AFP}

1. Plants dioecious (only pistillate in North America); leafy stems mostly emerged; petiole 5-7 mm long; all leaves pectinate; emerged leaves mostly 2.5-3.5 cm long ... *M. aquaticum*

1. Plants monoecious, lower flowers pistillate, upper staminate; leafy stems mostly submersed; petiole <2 mm long; submersed leaves pectinate; emerged leaves pinnately divided, serrate, or bract-like, <2 cm long [2]

2. Leaves gray-green to dark green, strictly whorled, typically retaining their shape upon drying; stamens 8 ... *M. spicatum*

2. Leaves green to reddish green, pseudowhorled to alternate (may appear whorled), typically collapsing and entangled upon drying; stamens 4 [3]

3. Leaf division typically 12-28 per leaf; distal flowers whorled; fruit prominently beaked ... *M. heterophyllum*

3. Leaf divisions typically 8-16 per leaf; distal flowers alternate; fruit short-beaked [4]

4. Bracts 1-3 mm long, shorter than most inflorescence internodes, pectinate to entire; fruit surface smooth to papillose ... *M. laxum*

4. Bracts 4-10 mm long, subequal to longer than inflorescence internodes, pinnatifid to pectinate; fruit surface tuberculate ... *M. pinnatum*

\**Myriophyllum aquaticum* (Vell.)Verdc.— {AFP}

*Myriophyllum heterophyllum* Michx.— {AFP}

*Myriophyllum laxum* Shuttlew. ex Chapm.— {AFP}

*Myriophyllum pinnatum* (Walter)Britton et al.— {AFP}

\**Myriophyllum spicatum* L.— {AFP}

## *Proserpinaca* {AFP}

1. Emerged leaves serrate; submersed pectinate leaves mostly with 8-14 pairs of divisions 5-30 mm long, the medial portion along the midrib of the leaf usually >1 mm wide; fruits 2.3-6.0 mm wide ... *P. palustris*

1. Emerged leaves pinnatifid to pectinate; submersed pectinate leaves with 4-12 pairs of divisions 2-7.5 mm long, the medial portion along the midrib of the leaf usually 1 mm or less wide; fruits 2.0-3.6 mm wide ... *P. pectinata*

*Proserpinaca palustris* L.— {AFP}

*Proserpinaca pectinata* Lam.— {AFP}

#### PENTHORACEAE {AFP}

Penthorum {AFP}

*Penthorum sedoides* L.— {AFP}

#### GROSSULARIACEAE {AFP}

Ribes {AFP}

*Ribes echinellum* (Coville)Rehder— {AFP} Federally Threatened. State Endangered.

#### ITEACEAE {AFP}

Itea {AFP}

*Itea virginica* L.— {AFP}

### CROSSOSOMATALES

#### STAPHYLEACEAE {AFP}

Staphylea {AFP}

*Staphylea trifolia* L.— {AFP} State Endangered.

### GERANIALES

#### GERANIACEAE {AFP}

1. Leaves pinnately divided; stamens 5, staminodes 5; mericarps rounded basally, retaining the seed, the awn spiraled ... *Erodium cicutarium*

1. Leaves palmately divided; stamens 10; mericarps pointed basally, ejecting the seed, the awn recurved ... *Geranium*

*Erodium* {AFP}

\**Erodium cicutarium* (L.)L'Her. ex Aiton— {AFP}

*Geranium* {AFP}

1. Perennial with a creeping rhizome; larger leaf blades 7.5-16 cm wide; petals 12-18 mm long ... *G. maculatum*

1. Annual, without a rhizome; larger leaf blades 2-6 cm wide; petals 4-6 mm long [2]

2. Fruiting pedicels >2 times longer than the calyx; sepals awn-tipped; beak of mature style column 2-6 mm long seed surface reticulate-alveolate ... *G. bicknellii*

2. Fruiting pedicels shorter than the calyx; sepals with a minute callous tip; beak of the mature style column 1-2 mm long; seed surface smooth or with irregular rows of alveolae ... *G. carolinianum*

\**Geranium bicknellii* Britton— {AFP}

*Geranium carolinianum* L.— {AFP}

*Geranium maculatum* L.— {AFP} State Endangered.

### MYRTALES

#### COMBRETACEAE {AFP}

1. Leaves opposite [2]

1. Leaves alternate, sometimes pseudowhorled in tight spirals [3]

2. Erect shrub or tree; petiole with glands; petals ca. 1 mm long and greenish white ...

*Laguncularia racemosa*

2. Scandent shrub or vine; petiole eglandular; petals 1-2 cm long and white to pink to red ...

*Combretum indicum*

3. Petiole with glands; flowers and fruits densely congested in spherical or oblong heads ...

*Conocarpus erectus*

3. Petiole eglandular; flowers and fruits generally clearly separated from one another in spikes [4]

4. Leaves not pseudowhorled on short shoots; leaf blades somewhat succulent; sepals ca. 1 mm long, green; petals present, 4-5 mm long ... *Lumnitzera racemosa*

4. Leaves commonly pseudowhorled in tight spirals on short shoots; leaf blades chartaceous; sepals 1-15 mm long, green to white; petals absent ... *Terminalia*

### **Combretum** {AFP}

^ *Combretum indicum* (L.) DeFilipps — {AFP}

### **Conocarpus** {AFP}

*Conocarpus erectus* L. — {AFP}

### **Laguncularia** {AFP}

*Laguncularia racemosa* (L.) C.F. Gaertn. — {AFP}

### **Lumnitzera** {AFP}

\* *Lumnitzera racemosa* Willd. — {AFP}

### **Terminalia** {AFP}

1. Larger leaf blades 1-9 cm long, without domatia; extrafloral nectaries absent; calyx lobes scarcely developed, persistent at apex of fruit; fruit 5-10 mm long (sometimes parasitized fruits long and skinny like a string bean) [2]

1. Larger leaf blades 8-35 cm long, the undersurface without domatia or with domatia in the vein axils along the midrib or along the secondary veins; extrafloral nectaries absent or present at the blade base or petiole apex; calyx lobes well developed, deltoid, deciduous from apex of fruit; fruit 10-70 mm long [3]

2. Stems with few to no thorns; larger leaf blades 2.5-9 cm long; inflorescence elongate to paniculiform, 3-19 cm long; fruit 4-10 mm long ... *T. buceras*

2. Stems with numerous thorns; larger leaf blades 1-2(3.5) cm long; inflorescence subcapitate to umbelliform, 1-3(-4) cm long; fruit 3-4 mm long ... *T. molinetii*

3. Petiole apex or leaf blade base with raised or stalked extrafloral nectaries; leaf blade mostly oblong-elliptic, with 12-20 per major lateral veins on each side the midrib, the undersurface without domatia ... *T. arjuna*

3. Petiole or leaf blade base without extrafloral nectaries or with surficial extrafloral nectaries; leaf blade mostly obovate, with 3-12 major lateral veins on each side of the midrib, the undersurface with domatia in the vein axils along the midrib or along the secondary veins [4]

4. Leaf blade 16-35 cm long, 9-15 cm wide, usually truncate to auriculate at the base or sometimes cuneate, the apex usually shortly acuminate; fruit with 2 ridges or wings, 3.5-7 cm long ... *T. catappa*



4. Leaf blade to 8-18 cm long, 3-6 cm wide, cuneate at the base, the apex rounded to obscurely acuminate; fruit without ridges or wings, 1.2-2 cm long ... *T. muelleri*

^ *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.— {AFP}

\**Terminalia buceras* (L.) C. Wright— {AFP} Allegedly some cultivars are hybrids with *T. molinetii* or *T. spinosa*.

\**Terminalia catappa* L.— {AFP}

*Terminalia molinetii* M. Gómez— {AFP}

\**Terminalia muelleri* Benth.— {AFP}

## MELASTOMATACEAE {AFP}

1. Herb [2]

1. Shrub or tree [3]

2. Leaf blades 0.4-1.5 cm long; petals 5, 0.5-0.6 cm long; anther connective with ventral appendages; ovary 3-locular ... *Acisanthera erecta*

2. Leaf blades 0.8-7.5 cm long; petals 4, 0.7-2.5 cm long; anther connective with dorsal appendages; ovary 4-locular ... *Rhexia*

3. Leaf blade upper surface smooth, glabrous or sparingly lepidote, and the lower surface white-lepidote; petals 0.5-0.7 cm long; fruit a berry ... *Miconia bicolor*

3. Leaf blade upper surface rough, with appressed trichomes, and the lower surface strigose-pilose to sericeous; petals 2.5-4 cm long; fruit a capsule ... *Melastoma malabathricum*

## *Acisanthera* {AFP}

++*Acisanthera erecta* J. St.-Hil.— {AFP}

## Heterotis

^ *Heterotis rotundifolia* (Sm.) Jacq.-Fél.— {AFP}

## *Melastoma* {AFP}

\**Melastoma malabathricum* L.— {AFP}

## *Miconia* {AFP}

*Miconia bicolor* (Mill.) Triana— {AFP} State Threatened.

## *Rhexia* {AFP}

1. Anthers straight or nearly so, 1-2.5 mm long [2]

1. Anthers usually curved, 3-11 mm long [4]

2. Stem internodes hirsute; leaf blades linear, oblong, to spatulate; petals yellow ... *R. lutea*

2. Stem internodes glabrous; leaf blades ovate; petals pink [3]

3. Plant 9-40 cm tall; leaf margins eciliate or ciliate; hypanthium stipitate-glandular ... *R. nuttallii*

3. Plant 18-70 cm tall; leaf margins ciliate; hypanthium glabrous except for a few trichomes near the apex ... *R. petiolata*

4. Stems glabrous; leaves glabrous; seeds wedge-shaped ... *R. alifanus*

4. Stems stipitate-glandular to glabrate; leaves stipitate-glandular, strigose, hirsute, or villous [5]

5. Faces of the stem subequal and flat [6]

5. Faces of the stem unequal, one opposing pair wide and convex, the other pair narrow and concave [8]

- 6. Leaf blades linear, oblong, to oblanceolate, twisted and held rather vertically ... *R. salicifolia*
- 6. Leaf blades lanceolate, ovate, to elliptic, held relatively horizontal [7]
- 7. Leaf blade elliptic, widest near the middle, larger ones 1-3 cm long; petals white ... *R. parviflora*
- 7. Leaf blade lanceolate to ovate, widest below the middle, larger ones 2.5-7 cm long; petals lavender ... *R. virginica*
- 8. Leaf blade mostly elliptic; anthers mostly 3-4 mm long ... *R. parviflora*
- 8. Leaf blades mostly linear, linear-oblanceolate, lanceolate, or ovate; anthers mostly 5-11 mm long [9]
- 9. Mature hypanthium 6-11 mm long; petals 1-1.5 cm long; anthers 5-8 mm long ... *R. mariana* [10]
- 9. Mature hypanthium 9-20 mm long; petals 1.5-2.5 cm long; anthers 7-11 mm long [10]
- 10. Leaf blades linear-oblong to linear-lanceolate; petals 1.5-2 cm long; hypanthium stipitate-glandular ... *R. cubensis*
- 10. Leaf blades lanceolate to linear-lanceolate; petals 2-2.5 cm long; hypanthium ... *R. nashii*

***Rhexia alifanus*** Walter— {AFP}

***Rhexia cubensis*** Griseb.— {AFP}

***Rhexia lutea*** Walter— {AFP}

***Rhexia mariana*** L.— {AFP}

***Rhexia nashii*** Small— {AFP}

***Rhexia nuttallii*** C.W.James— {AFP}

***Rhexia parviflora*** Chapm.— {AFP} State Endangered.

***Rhexia petiolata*** Walter— {AFP}

***Rhexia salicifolia*** Kral & Bostick— {AFP} State Threatened.

***Rhexia virginica*** L.— {AFP}

## MYRTACEAE {AFP}

- 1. Leaves usually alternate, sometimes opposite; fruit a woody capsule [2]
- 1. Leaves opposite to subopposite; fruit a fleshy berry [3]
- 2. Leaf blades typically with basal and parallel secondary veins; inflorescence of spikes; flowers without a calyptra, the sepals and petals distinct ... *Melaleuca*
- 2. Leaf blades pinnate-veined; inflorescence of umbels; flowers with a circumscissile-dehiscent calyptra, without distinct sepals or petals ... *Eucalyptus*
- 3. Buds and lower leaf blade surface whitish-tomentose; leaf blade with basal secondary veins parallel to margin and extending to the apex ... *Rhodomyrtus tomentosa*
- 3. Buds and lower leaf blade surface glabrous or pubescent, but not whitish tomentose; leaf blade venation various [4]
- 4. Leaf blade with numerous punctae forming a roughened, bullate surface texture ... *Myrcianthes fragrans*
- 4. Leaf blade surface generally smooth [5]
- 5. Leaf blades typically with 10-40 fine, close-set, nearly straight, subparallel ascending secondary veins on each side of the midrib [6]
- 5. Leaf blades typically with 0-22 well-spaced secondary veins visible on each side of the midrib, the secondary veins not with the above combination of characters or the secondary veins not apparent [7]
- 6. Leaf blades usually 3-6 cm long; calyx a circumscissile calyptra; petals absent ... *Myrcia*
- 6. Leaf blades 8-24 cm long; calyx not forming a calyptra; petals present, sometimes forming a calyptra ... *Syzygium*

- 7. Sepals and petals 5-merous; fruit 1.5-8 cm long; ovary 3-6 carpellate ... Psidium
- 7. Sepals and petals 4-merous; fruit 0.4-1.5 cm long; ovary 2-4 carpellate [8]
- 8. Leaf blades mostly 9-20 cm long ... Pimenta dioica
- 8. Leaf blades 2-8 cm long [9]
- 9. Leaf blades mostly 2.5-8 cm long, 1-4 cm wide; petiole 1-9 mm long; calyx open in bud; sepals 1-4 mm long ... Eugenia
- 9. Leaf blades mostly 1-4 cm long, 0.8-3 cm wide; petiole 1-3 mm long; calyx closed or nearly so in bud; sepals 3-4 mm long ... Mosiera longipes

**Eucalyptus {AFP}**: The genus is retained in the broad sense (Nicolle et al. 2024).

- 1. Stems, buds, petioles, and/or leaf blades reddish hirsute ... E. torelliana
- 1. Stems, buds, petioles and leaf blades glabrous ... [2]
- 2. Leaf blades mostly less than 2 cm wide; peduncle < 2 mm wide; pedicel distinct from rounded base of flower bud and fruit; fruit hemispheric to ovoid ... E. camaldulensis subsp. acuta
- 2. Leaf blades mostly more than 1.5 cm wide; peduncle usually > 2 mm wide; pedicel indistinct from widened base of flower bud and fruit; fruit subpyriform or cylindrical [3]
- 3. Bark shedding, smooth on the upper trunk; length from base of pedicel to fruit rim < 1 cm; fruit subpyriform ... E. grandis
- 3. Bark retained, rough throughout trunk; length from base of pedicel to fruit rim > 1 cm; fruit subpyriform-cylindrical ... E. robusta

\***Eucalyptus camaldulensis** Dehnh. subsp. **acuta** Brooker & M.W.McDonald— {AFP}

^ *Eucalyptus cinerea* F.Muell. ex Benth.— {AFP}

^ *Eucalyptus deglupta* Blume— {AFP}

\***Eucalyptus grandis** W.Hill ex Maiden— {AFP}

\***Eucalyptus robusta** Sm.— {AFP}

^ *Eucalyptus torelliana* F.Muell— {AFP} Once placed in *Corymbia*, and recently moved again to a new genus *Blakella* (Crisp et al. 2024).

**Eugenia {AFP}**

- 1. Leaf blade obovate, with a narrower angle towards the base, the apex broadly rounded; petioles, pedicels, and peduncles densely puberulent ... E. foetida
- 1. Leaf blade ovate, with a narrower angle towards the tip, the apex usually acuminate; petioles, pedicels, and peduncles glabrous to glabrate or puberulent [2]
- 2. Leaves subsessile, the petiole 0-3(4) mm long [3]
- 2. Leaves petiolate, the petiole 2-8 mm long [4]
- 3. Leaf blade apex with a strong acumen; pedicels 10-30 mm long; calyx lobes equal, 4-8 mm long; fruit ribbed, 12-15 mm long or wide ... E. uniflora
- 3. Leaf blade apex rounded to obtuse; pedicels 5-10 mm long; calyx lobes unequal, 1-4 mm long; fruit not ribbed, 7-12 mm long or wide... E. coronata
- 4. Leaf blade lustrous on the upper surface, abruptly narrowed to an acuminate apex ... E. confusa
- 4. Leaf blade dull to slightly lustrous on the upper surface, gradually narrowed to an acuminate apex [5]
- 5. Leaf blade rather chartaceous, with conspicuous whitish lateral veins on the upper surface when fresh (obscure when dry) and typically lacking a light green margin, the midrib prominent

on the lower surface for half or more of the blade length; pedicels 1-3 mm long; larger sepals ca. 1 mm long ... *E. axillaris*

5. Leaf blade rather coriaceous, the lateral veins unapparent or obscure on the upper surface when fresh and dry, with a apparent light green margin on the upper surface, the midrib slightly prominent only at the base of the blade underside; pedicels 8-20(30) mm long; larger sepals 2-4 mm long ... *E. rhombea*

***Eugenia axillaris*** (Sw.)Willd.— {AFP}

***Eugenia confusa*** DC.— {AFP} State Endangered.

^ *Eugenia coronata* Schumach.— {AFP}

***Eugenia foetida*** Pers.— {AFP}

***Eugenia rhombea*** (O.Berg)Krug & Urb.— {AFP} State Endangered.

\****Eugenia uniflora*** L.— {AFP}

### Feijoa {AFP}

^ *Feijoa sellowiana* (O.Berg)O.Berg—

### Melaleuca {AFP}

1. Leaf blades < 4 mm wide ... *M. linariifolia*

1. Largest leaf blades > 4 mm wide [2]

2. Leaf blades elliptic; flowers joined to the inflorescence axis in clusters of 3; filaments white to greenish to yellow ... *M. quinquenervia*

2. Leaf blades linear-elliptic; flowers joined to the inflorescence singly; filaments red ... *M. viminalis*

^ *Melaleuca linariifolia* Sm.— {AFP}

\****Melaleuca quinquenervia*** (Cav.)S.T.Blake— {AFP}

\****Melaleuca viminalis*** (Sol. ex Gaertn.)Byrnes— {AFP} Central and southern peninsula.  
Disturbed wetlands. Widely cultivated.

### Mosiera {AFP}

***Mosiera longipes*** (O.Berg)Small— {AFP} State Threatened.

### Myrcia {AFP}

1. Young twigs angled; petiole 4-8 mm long; midrib sunken towards the base of the blade; inflorescence tomentulose; pedicel to 2 mm long; calyptra obtuse to rounded ... *M. neopallens*

1. Young twigs terete; petiole 2-4 mm long; midrib prominent towards the base of the blade; inflorescence glabrous; pedicel 2-5 mm long; calyptra apiculate ... *M. zuzygium*

***Myrcia neopallens*** A.R.Lourenço & E.Lucas— {AFP} State Threatened.

***Myrcia zuzygium*** (L.)A.R.Lourenço & E.Lucas— {AFP} State Endangered.

### Myrcianthes {AFP}

1. Cymes usually with 3-7 flowers; corolla <1 cm wide ... *Myrcianthes fragrans* var. *fragrans*

1. Cymes usually with 10-14 flowers; corolla >1 cm wide (endemic) ... *Myrcianthes fragrans* var. *simpsonii*

***Myrcianthes fragrans*** (Sw.)McVaugh— {AFP} State Threatened.

## Pimenta {AFP}

^ *Pimenta dioica* (L.) Merr.— {AFP}

^ *Pimenta racemosa* (Mill.) J.W. Moore—

## Plinia

^ *Plinia cauliflora* (Mart.) Kausel—

## Psidium {AFP}

1. Leaf blade glabrous on the lower surface, the veins generally even with the blade surface ... P. cattleianum

1. Leaf blades pubescent on the lower surface, the midrib and secondary veins impressed on the upper surface and prominent on the lower surface [2]

2. Leaf blades with 9-22 secondary veins on each side of the midrib; petals 13-22 mm long; fruit 2-10 cm long ... P. guajava

2. Leaf blades with 6-10 secondary veins on each side of the midrib; petals 10-14 mm long; fruit 1-2.5 cm long ... P. guineense

\* *Psidium cattleianum* Sabine— {AFP} Though originally published as "*cattleianum*", correctable to "*cattleyanum*".

\* *Psidium guajava* L.— {AFP}

\* *Psidium guineense* Sw.— {AFP}

## Rhodomyrtus {AFP}

\* *Rhodomyrtus tomentosa* (Aiton) Hassk.— {AFP}

## Syzygium {AFP}

1. Petiole usually >1 cm long; leaf blade usually >4 cm wide, abruptly acuminate, the major secondary veins closely set; inflorescence on older parts of branches, paniculate; flower buds 5-6 mm long; calyx truncate, the lobes inconspicuous; petals connate, calyprate at anthesis ... S. cumini

1. Petiole usually <1 cm long; leaf blade usually <5 cm wide, gradually acuminate, the major secondary veins relatively more widely spaced; inflorescence terminal, racemose; flower buds 25-30 mm long; calyx 4-lobed; petals free ... S. jambos

\* *Syzygium cumini* (L.) Skeels— {AFP}

^ *Syzygium jambos* (L.) Alston— {AFP}

^ *Syzygium malaccense* (L.) Merr. & L.M. Perry—

^ *Syzygium paniculatum* Gaertn.—

^ *Syzygium samarangense* (Blume) Merr. & L.M. Perry—

## LYTHRACEAE {AFP}

1. Shrub or tree with a definite trunk, usually >2 m tall when mature; petals 14-18 mm long; fruit woody, 9-15 mm long

1. Herbs or shrubs without a trunk or trunk weakly formed, usually <3 m tall when mature; petals to 15 mm long or absent; fruit not woody, <8 mm long [2]

- 2. Leaves petiolate, the petiole 3-10 mm long; leaf blades 3-20 cm long; pedicels 5-13 mm long; flowers usually 6 or more per node; petals 8-15 mm long ... *Decodon verticillatus*
- 2. Leaves sessile or the petiole 3 mm long or less; leaf blades 0.5-10 cm long; pedicels usually 5 mm long or less, or to 30 mm long (in *Cuphea aspera*); flowers usually 10 or less per node; petals to 7 mm long or absent [3]
- 3. Hypanthium asymmetrical at the base (enlarged and spurred on one side) ... *Cuphea*
- 3. Hypanthium symmetrical at the base [4]
- 4. Hypanthium and fruit cylindrical or oblong ... *Lythrum*
- 4. Hypanthium and fruit campanulate to globose [5]
- 5. Inflorescence terminal and bracteate ... *Rotala rotundifolia*
- 5. Flowers in the axils of typical leaves [6]
- 6. Flowers or fruits 2 or more per leaf axil, 4 or more per node ... *Ammannia*
- 6. Flowers or fruits solitary in the leaf axil, 1-2 per node [7]
- 7. Petals absent; fruit indehiscent ... *Didiplis diandra*
- 7. Petals present or absent; fruit dehiscent ... *Rotala ramosior*

### **Ammannia** {AFP}

- 1. Leaf blades linear-lanceolate, rarely elliptic; pedicel 1-2 mm long; petals 4-5, often seen; style filiform, 1.5-3 mm long, exerted ... *A. coccinea*
- 1. Leaf blades oblong, oblong-elliptic, spatulate, to linear-lanceolate; pedicel 0-1 mm long; petals 0-4(6), very rarely seen; style stubby, ca. 0.5 mm long ... *A. latifolia*

***Ammannia coccinea*** Rottb.— {AFP}

***Ammannia latifolia*** L.— {AFP}

### **Cuphea** {AFP}

- 1. Nodes with usually at least some whorled leaves; pedicel 8-30 mm long ... *C. aspera*
- 1. Nodes with opposite leaves only; pedicel 0-3 mm long [2]
- 2. Stems, leaf margins, and/or hypanthium usually conspicuously glandular-hirtellous ... *C. carthagenensis*
- 2. Stems, leaf margins, and hypanthium glabrous or only sparsely glandular-hirtellous [3]
- 3. Internodes <0.5 times as long as the subtending leaves; leaf blades mostly linear-lanceolate, with 4-9 major lateral veins on each side of the midrib ... *C. hyssopifolia*
- 3. Internodes ca. 0.5-1.5 times as long as the subtending leaves; leaf blades mostly ovate to elliptic, with 2-4 major lateral veins on each side of the midrib ... *C. strigulosa*

***Cuphea aspera*** Chapm.— {AFP} Endemic. State Endangered.

\****Cuphea carthagenensis*** (Jacq.)J.F.Macbr.— {AFP}

\****Cuphea hyssopifolia*** Kunth— {AFP}

\****Cuphea strigulosa*** Kunth— {AFP}

### **Decodon** {AFP}

***Decodon verticillatus*** (L.)Elliott— {AFP}

### **Didiplis** {AFP}

***Didiplis diandra*** (Nutt. ex DC.)A.W.Wood— {AFP}

**Lagerstroemia** {AFP} Plants of the *L. indica* group are widely cultivated, many perhaps being hybrids. A key is provided to distinguish among the putative groups cultivated or hybridized, but whether definitive identifications can be made is still unclear.

1. Leaf blades 10-30 cm long; petal blade 15-30 mm long and wide; fruit 15-30 mm long and wide ... *L. speciosa*

1. Leaf blades 2-12 cm long; petal blade 2-11 mm long and wide; fruit 5-11 mm long, 5-10 mm wide [2]

2. Leaf blades with 9-12 secondary veins per side, upper side persistently minutely pubescent, lower side persistently densely pubescent; calyx sinus auriculate with a persistent appendage ca. 2 mm long and 3 mm wide ... *L. limii*

2. Leaf blades with 3-12 secondary veins per side, upper side glabrous to ephemerally minutely pubescent, lower side glabrous to minutely pubescent; calyx sinus lacking an auricle or persistent appendage [3]

3. Petioles 5-10 mm long; leaf blades 7-11.5 cm long, with 7-12 secondary veins per side, the apex abruptly strongly acuminate; fruit 8-10 mm long; seeds 7-9 mm long, the wings longer than the body ... *L. fauriei*

3. Petioles 2-6 mm long; leaf blades 2-7 cm long, with 3-8 secondary veins per side, the apex rounded, obtuse, subacute, to abruptly short-acuminate; fruit 5-8 mm long; seeds 4-6 mm long, the wings subequal to shorter than the body [4]

4. Stems 4-angled and 4-winged; petioles 0-2 mm long; leaf blades 3.5-6.5 cm long, with 3-6 secondary veins per side; hypanthium 4-5.5 mm long, with 0 or 6 veins reaching sinuses; sepal lobes 2-3 mm long; petal blade 5-10 mm long, 7-14 mm wide, the claw 5-10 mm long; bark white, weathering to light to medium gray or gray-brown ... *L. indica*

4. Stems subterete, sometimes with 4 weak angles or low ridges; petiole 1-6 mm long; leaf blades 2-11.5 cm long, with (4)5-12 secondary veins per side; hypanthium 2-5 mm long, with 0 or 12 weak to strong veins, reaching sinuses and midline of sepals; sepal lobes 1.5-4 mm long; petal blade 2-11 mm long, 2-10(14) mm wide, the claw 2.5-12 mm long; bark white to orange-brown weathering to light or dark gray to dark brown [5]

5. Petioles 1-3 mm long; leaf blades 3.5-8 cm long, with (4)5-8 secondary veins per side ... *L. egolfii*

5. Petioles 2-6 mm long; leaf blades 2-7 cm long, with 3-6 secondary veins per side ... *L. subcostata*

^ *Lagerstroemia indica* L.— {AFP} Sparingly naturalized.

^ *Lagerstroemia speciosa* (L.) Pers.—

### **Lythrum** {AFP}

1. Fertile above-ground stems 10–50 cm tall, flowering portion of the stem to 13 cm long; larger leaves 0.5–1.4 cm long, 1.2–5 times longer than wide; flowering Feb–Nov [2]

1. Fertile above-ground stems 40–150 cm tall, flowering portion of the stem to 40 cm long; larger leaves 1.3–5 cm long, 3–19 times longer than wide; flowering May–Oct [3]

2. Stem internodes usually, or at least some, conspicuously longer than the subtending leaves; leaves opposite, usually distinctly petiolate, the petiole 0.5–1 mm long, with a discernible gap between the stem and the base of the blade, larger leaves 0.7–1.4 cm long, 1.2–5 times longer than wide; floral tube narrowly obconic; flowering Feb–Jun ... *L. flagellare*

2. Stem internodes subequal to shorter than the subtending leaves; leaves opposite and sometimes alternate distally, sessile or the petiole to 0.2 mm long, the base of the blade

adjacent to the stem, larger leaves 0.5–0.9 cm long, 1.8–2.7 times longer than wide; floral tube subcylindric; flowering Jul–Nov ... *L. nieuwlandii*

3. Leaves opposite to subopposite, very rarely alternate, the larger ones 6.8–19 times longer than wide; petals white to faintly lilac, usually with a darker midrib; of brackish areas ... *L. lineare*

3. Leaves opposite to subopposite proximally, often becoming alternate distally especially along the fertile portion of the stem, the larger ones 3–9 times longer than wide; petals commonly lilac, pink, to purple, sometimes white to faintly lilac, usually with a darker midrib; mainly of freshwater areas, rarely brackish [4]

4. Branches mostly spreading to ascending; leaves narrowly lanceolate, lanceolate-ovate, lanceolate-elliptic, elliptic, to oblong, 3–5 times longer than wide, mostly spreading to ascending, floral tube narrowly obconic to subcylindric, 3–4.2 mm long; epicalyx segments and sepals subequal; petals 1.5–3 mm long, 0.5–1.5 mm wide ... *L. curtissii*

4. Branches mostly ascending to strict; leaves linear-lanceolate, narrowly lanceolate, lanceolate, narrowly elliptic, to elliptic, 3–9 times longer than wide, mostly ascending to strict; floral tube subcylindric, 5–6 mm long; epicalyx segments ca. 2 times length of sepals; petals 2–6.5 mm long, 1.5–3 mm wide ... *L. alatum* var. *lanceolatum*

***Lythrum curtissii*** Fernald— {AFP} State Endangered.

***Lythrum flagellare*** Shuttlew. ex Chapm.— {AFP} Endemic. State Endangered.

***Lythrum lanceolatum*** Elliott— {AFP}

***Lythrum lineare*** L.— {AFP}

***Lythrum nieuwlandii*** A.R.Franck & C.Werner— {AFP} Endemic.

## **Punica**

^ *Punica granatum* L.—

## **Rotala** {AFP}

1. Leaf blades linear to oblanceolate; flowers in the axils of typical leaves ... *Rotala ramosior*

1. Leaf blades broadly elliptic to orbicular; inflorescence terminal and bracteate ... *Rotala rotundifolia*

***Rotala ramosior*** (L.)Koehne— {AFP}

\****Rotala rotundifolia*** (Buch.-Ham. ex Roxb.)Koehne— {AFP}

## **ONAGRACEAE** {AFP}

1. Floral tube absent; sepals persistent or tardily caducous after anthesis; flowers 4- or 5-merous; petals yellow or white ... *Ludwigia*

1. Floral tube present (1.5-25 mm long); sepals deciduous after anthesis; flowers 4-merous; petals yellow, white, or pink (often fading to pink or red) ... *Oenothera*

## **Ludwigia** {AFP}

1. Leaves opposite ... Key A

1. Leaves alternate [2]

2. Stamens 4-5 per flower, as many as the sepals ... Key B

2. Stamens 8-10 per flower, twice the number of sepals [3]

3. Sepals 5(-7) ... Key C

3. Sepals 4 ... Key D



### Key A

1. Pedicels 6-45 mm long [2]
1. Pedicels 0-2(5) mm long [3]
2. Pedicel mostly subequal to shorter than the subtending leaf; petals 4-5 mm long ... *L. arcuata*
2. Pedicel usually much longer than the subtending leaf; petals 7-11 mm long ... *L. brevipes*
3. Plant densely strigulose ... *L. spathulata*
3. Plant glabrate [4]
4. Sepals 1-2.1 mm long; petals absent; anthers 0.2-0.4 mm long, the pollen shed as monads; faces of fruit with a longitudinal band or obscure line running down from the sepal midrib, the appearing dissimilar from the corners ... *L. palustris*
4. Sepals 1.8-5 mm long; petals present but often quickly deciduous; anthers 0.4-0.9 mm long, the pollen sheds as tetrads; fruit faces and corners similar in appearance ... *L. repens*

### Key B

1. Fruit much longer than wide [2]
1. Fruit about as long as wide [4]
2. Leaf blades elliptic, lanceolate, ovate, to oblanceolate, larger ones 4-12 mm wide; petals absent; fruit with a groove descending from the middle of the calyx lobe ... *L. glandulosa*
2. Leaf blades linear to linear-oblanceolate, larger ones 1-4 mm wide; petals present; fruit without a groove [3]
3. Calyx lobes 2-3 mm long, much shorter than the quadrangular fruit ... *L. linearis*
3. Calyx lobes 5-6 mm long, ca. 0.6-1 times longer than the subcylindric fruit ... *L. linifolia*
4. Pedicel apparent, 3-20 mm long [5]
4. Pedicel scarcely evident, 0-2 mm long [8]
5. Leaf blade base cuneate-attenuate ... *L. alternifolia*
5. Leaf blade base rounded to obtuse [6]
6. Proximal leaf blades glabrous; style 7-10 mm long, longer than the sepals ... *L. virgata*
6. Proximal leaf blades pubescent; styles to 3 mm long, shorter than the sepals [7]
7. Plant hirsute ... *L. hirtella*
7. Plant pubescent to puberulent ... *L. maritima*
8. Flowers several in a densely congested in a terminal spike with bract-like leaves ... *L. suffruticosa*
8. Flowers mostly separated along a leafy racemes or interrupted spike, or few in a congested, bracteate terminal spike [9]
9. Plant hirtellous [10]
9. Plant glabrous to strigillose [11]
10. Sepals whitish along the upper surface and often tinged pink along the midvein and edge, the apex long-acuminate to subcuspidate and reflexed; anther 0.6-1.3 mm long, filament 0.7-1.1 mm long; style glabrous, 0.25-0.5 mm long; nectary disc hirtellous between the lobes ... *L. pilosa*
10. Sepals greenish on the upper surface, the apex acuminate and ascending; anther ca. 0.3 mm long, filament 1.5-2.5 mm long; style hirtellous, 1-2 mm long; nectary disc glabrous ... *L. ravenii*
11. Capsule quadrangular or winged [12]
11. Capsule not angular, not winged [13]
12. Stem usually ridged or winged; sepals whitish and subequal to the fruit ... *L. alata*
12. Stems usually smooth to obscurely ridged; sepals greenish, ca. ½ as long as the fruit ... *L. lanceolata*
13. Sepals 1-2 mm long; fruit 1-1.5 mm long; seeds reddish brown ... *L. microcarpa*

- 13. Sepals 2-4 mm long; fruit 1.5-7 mm long; seeds tan to yellowish [14]
- 14. Leaf blades obovate, spatulate, to oblanceolate ... *L. curtissii*
- 14. Leaf blades linear-lanceolate to oblong-elliptic ... *L. sphaerocarpa*

Key C

- 1. Stems prostrate to decumbent, rooting [2]
- 1. Stems erect to ascending, not rooting at least distally [3]
- 2. Bracteoles below hypanthium lanceolate; hypanthium subequal to shorter than the sepals ... *L. grandiflora*
- 2. Bracteoles below hypanthium deltoid to ovate; hypanthium longer than the sepals ... *L. peploides* subsp. *glabrescens*
- 3. Fruit cylindric, 3-5 cm long (much longer than the pedicel), 2-4 mm wide ... *L. leptocarpa*
- 3. Fruit obconic, quadrangular, 1-3 cm long (subequal to the pedicel), 5-10 mm wide ... *L. peruviana*

Key D

- 1. Stem conspicuously 4-winged [2]
- 1. Stem without wings or slightly ridged on the angles [3]
- 2. Leaf blades lanceolate, ovate-lanceolate, to elliptic ... *L. decurrens*
- 2. Leaf blades linear-lanceolate ... *L. longifolia*
- 3. Stems hirsute to villous [4]
- 3. Stems glabrate [5]
- 4. Fruit more than twice as long as the sepals, with a distinct ridge descending from the sepal midvein ... *L. octovalvis*
- 4. Fruit subequal to slightly longer than the sepals, without a ridge continuous with the sepal midvein ... *L. peruviana*
- 5. Calyx lobes 3-4 mm long; petals 4-5 mm long ... *L. erecta*
- 5. Calyx lobes (5-)10-15 mm long; petals (10-)15-30 mm long [6]
- 6. Pedicel shorter than the hypanthium; hypanthium subequal to slightly longer than the sepals ... *L. bonariensis*
- 6. Pedicel longer than the hypanthium; hypanthium more than twice as long as the sepals ... *L. octovalvis*

***Ludwigia alata*** Elliott— {AFP}

***Ludwigia alternifolia*** L.— {AFP}

***Ludwigia arcuata*** Walter— {AFP}

\****Ludwigia bonariensis*** (Micheli)H.Hara— {AFP}

***Ludwigia brevipes*** (B.H.Long)Eames— {AFP}

***Ludwigia curtissii*** Chapm.— {AFP}

***Ludwigia decurrens*** Walter— {AFP}

***Ludwigia erecta*** (L.)H.Hara— {AFP}

***Ludwigia glandulosa*** Walter— {AFP}

\****Ludwigia grandiflora*** (Michx.)Greuter & Burdet— {AFP}

***Ludwigia hirtella*** Raf.— {AFP}

***Ludwigia lanceolata*** Elliott— {AFP}

***Ludwigia leptocarpa*** (Nutt.)H.Hara— {AFP}

***Ludwigia linearis*** Walter— {AFP}

***Ludwigia linifolia*** Poir.— {AFP}

\****Ludwigia longifolia*** (DC.)H.Hara— {AFP}

*Ludwigia maritima* R.M.Harper— {AFP}  
*Ludwigia microcarpa* Michx.— {AFP}  
*Ludwigia octovalvis* (Jacq.)P.H.Raven— {AFP}  
*Ludwigia palustris* (L.)Elliott— {AFP}  
*Ludwigia peploides* (Kunth)P.H.Raven subsp. *glabrescens* (Kuntze)P.H.Raven— {AFP}  
<sup>++</sup>*Ludwigia peruviana* (L.)H.Hara— {AFP}  
*Ludwigia pilosa* Walter— {AFP}  
*Ludwigia ravenii* C.I Peng— {AFP}  
*Ludwigia repens* J.R.Forst.— {AFP}  
*Ludwigia simpsonii* Chapm.—  
*Ludwigia* ×*simulata* Small— {AFP}  
*Ludwigia spathulata* Torr. & A.Gray— {AFP}  
*Ludwigia sphaerocarpa* Elliott— {AFP}  
*Ludwigia suffruticosa* Walter— {AFP}  
*Ludwigia virgata* Michx.— {AFP}

### Oenothera {AFP}

1. Petals white to pink (often fading to pink or reddish), 4-15 mm long; fruit indehiscent, nut-like, with 1-4 seeds (formerly genus *Gaura*) ... Key A
1. Petals yellow (often fading to pink or reddish), or pink to white and 15-45 mm long; fruit a dehiscent capsule with numerous seeds ... Key B

#### Key A

1. Pedicel slender to filiform, 2-8 mm long [2]
1. Pedicel stubby, 0-1 mm long [3]
2. Petals 4-6 mm long ... *O. filipes*
2. Petals 8-10 mm long ... *O. sinuosa*
3. Flowers dense, overlapping along the inflorescence; sepals 2-3.5 mm long; petals 1.5-3 mm long ... *O. curtiflora*
3. Flowers spaced, mostly not overlapping or only a few overlapping near the inflorescence tip; sepals 4-15 mm long; petals 4-20 mm long [4]
4. Stem short-hirsute; sepals 12-15 mm long; petals 12-20 mm long ... *O. lindheimeri*
4. Stem sparsely loose-uncinate; sepals 4-12 mm long; petals 4-10 mm long ... *O. simulans*

#### Key B

1. Leaf blades linear-filiform, <1 mm wide ... *O. linifolia*
1. Leaf blades >1 mm wide [2]
2. Flower buds drooping; petals white to pink ... *O. speciosa*
2. Flower buds erect; petals yellow [3]
3. Plant densely strigulose throughout, the leaf blades grayish green; of coastal habitats [4]
3. Plant glabrate to strigulose or villous, usually the leaf blades and sepals green and not consistently densely strigulose; habitats various [5]
4. Basal leaves 5-14 cm long, 1-2 cm wide, the cauline 0.5-2.5 cm wide; sepals 1.3-3.3 cm long; petals 2-4.5 cm long; stigma exerted beyond the anthers ... *O. drummondii*
4. Basal leaves 4-8 cm long, 0.7-1 cm wide, the cauline 0.3-1.5 cm wide; sepals 0.3-1.1 cm long; petals 0.5-1.6 cm long; stigma not exerted beyond the anthers ... *O. humifusa*
5. Plant usually 0.8-3 m tall; larger leaves (5-)8-25 cm long, 1-5 cm wide; seeds prismatic and angled [6]

- 5. Plant usually <1 m tall; larger leaves to 10 cm long, 2 cm wide; seeds ellipsoid to subglobose or ovoid and angled [8]
- 6. Calyx lobes 2.5-5 cm long; petals 4-6 cm long; styles 2-5 mm long, longer than the anthers ... *O. grandiflora*
- 6. Calyx lobes 1-2.5 cm long; petals 1-2.5 cm long; styles 3-17 mm long, subequalling the anthers [7]
- 7. Hypanthium and fruit villous to hirsute ... *O. biennis*
- 7. Hypanthium and fruit glabrate ... *O. nutans*
- 8. Flowers mostly opening around sunrise and closing around evening; fruit 4-angled, obovoid to broadly clavate ... *O. fruticosa*
- 8. Flowers opening in evening and closing around morning; fruit subcylindric [9]
- 9. Petal apex acute to rounded ... *O. curtissii*
- 9. Petal apex truncate to emarginate [10]
- 10. Petals 2.5-4 cm long; style 4-7.5 cm long, the part exerted from the floral tube 1.5-3 cm long, stigma lobes exerted above the anthers ... *O. grandis*
- 10. Petals 0.5-2.5 cm long; style 2-5 cm long, the part exerted from the floral tube 0.3-2(-2.5) cm long, stigma lobes surrounded by or slightly elevated above the anthers ... *O. laciniata*

***Oenothera biennis*** L.— {AFP}

***Oenothera curtiflora*** W.L.Wagner & Hoch— {AFP}

***Oenothera curtissii*** Small— {AFP}

\****Oenothera drummondii*** Hook.— {AFP}

***Oenothera filipes*** (Spach)W.L.Wagner & Hoch— {AFP}

***Oenothera fruticosa*** L.— {AFP}

***Oenothera grandiflora*** L'Hér. ex Aiton— {AFP}

\****Oenothera grandis*** Smyth— {AFP}

***Oenothera humifusa*** Nutt.— {AFP}

***Oenothera laciniata*** Hill— {AFP}

\****Oenothera lindheimeri*** (Engelm. & A.Gray)W.L. Wagner & Hoch— {AFP}

***Oenothera linifolia*** Nutt.— {AFP}

***Oenothera nutans*** G.F.Atk. & Bartlett— {AFP}

\****Oenothera rosea***—

***Oenothera simulans*** (Small)W.L.Wagner & Hoch— {AFP}

\****Oenothera sinuosa*** W.L.Wagner & Hoch— {AFP}

\****Oenothera speciosa*** Nutt.— {AFP}

## ZYGOPHYLLALES

KRAMERIACEAE {AFP}

***Krameria*** {AFP}

***Krameria lanceolata*** Torr.— {AFP}

ZYGOPHYLLACEAE {AFP}

1. Shrub or tree [2]

1. Herb [3]

2. Leaflets 10-20 per leaf; corolla yellow; fruit of (3)4(5) winged mericarps, seeds without arils ... *Gonopterodendron*

2. Leaflets 4-10 per leaf; corolla blue to purple; fruit a dehiscent 2- or 5-lobed capsule, the seed covered in a fleshy red aril ... *Guaiacum*

3. Leaflets 5-15 mm wide, in 2-4(-6) pairs per leaf; fruit with 10 tuberculate mericarps ...

Kallstroemia

3. Leaflets 2-5(-8) mm wide, in 3-10 pairs per leaf; fruit with 5 prickled mericarps ... Tribulus

### Gonopterodendron

^ *Gonopterodendron arboreum* (Jacq.) Godoy-Bürki — {AFP}

### Guaiacum {AFP}

1. Leaflets mostly 4 per leaf; petals tomentulose; fruit obcordate, with 2 wing-like angles ... G. officinale

1. Leaflets (4)6-8(10) per leaf; petals glabrous; fruit obovoid, with 5 wing-like angles ... G. sanctum

^ *Guaiacum officinale* L. — {AFP}

***Guaiacum sanctum*** L. — {AFP} State Endangered.

### Kallstroemia {AFP}

1. Ovary and fruit glabrous or sometimes strigose ... K. maxima

1. Ovary and fruit densely appressed short-pilose ... K. pubescens

***Kallstroemia maxima*** (L.) Hook. & Arn. — {AFP}

\****Kallstroemia pubescens*** (G. Don) Dandy — {AFP}

### Tribulus {AFP}

1. Peduncle 2-3 cm long, usually longer than the subtending leaf; petals 8-22 mm long; intrastaminal glands connate, forming a 5-lobed ring around the ovary base; fruit pilose only ...

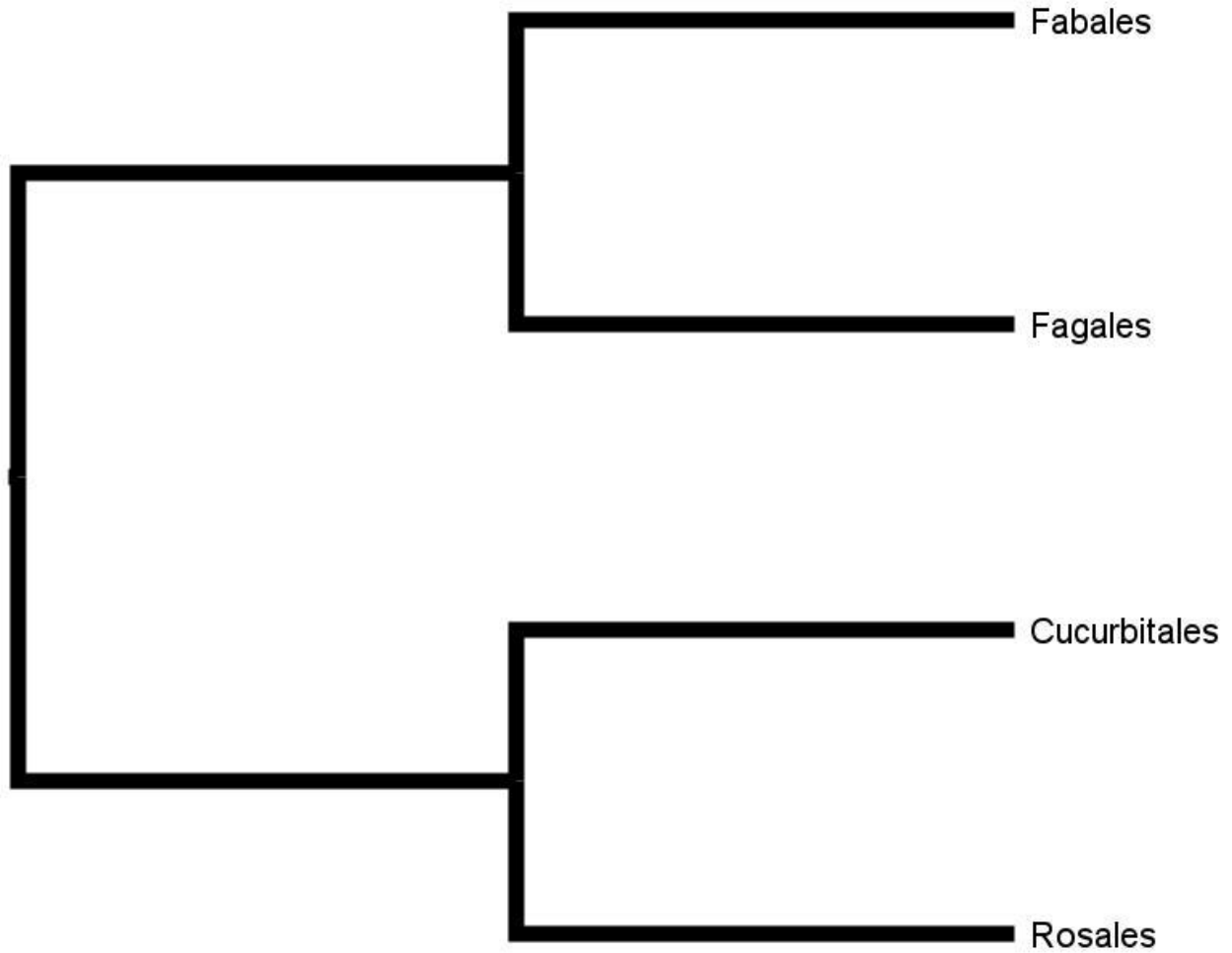
T. cistoides

1. Peduncle 0.5-1 cm long, usually shorter than the subtending leaf; petals 3-5 mm long; intrastaminal glands free; fruit usually puberulent and pilose ... T. terrestris

\****Tribulus cistoides*** L. — {AFP}

\****Tribulus terrestris*** L. — {AFP}

## Fabids



## FABALES

### FABACEAE {AFP}

subf. Cercidoioideae: Bauhinia, Cercis, Phanera

subf. Caesalpinoideae

Gleditsia

Cassia, Chamaecrista, Senna

Delonix, Parkinsonia, Peltophorum

Caesalpinia, Denisophytum, Tara Ticanto

subf. Mimosoideae

Acacia, Albizia, Calliandra

Mimosa, Senegalia

Desmanthus

Acaciella

Leucaena

Vachellia

Lysiloma

Pithecellobium

Adenantha

Neptunia

subf. Papilionoideae

'Dalbergioids'  
 Amorpheae: Amorpha, Dalea  
 Dalbergieae: Aeschynomene, Arachis, Dalbergia, Stylosanthes, Zornia  
 'Genistoids': Crotalaria, Baptisia, Sophora, Lupinus  
 'Hologalegina'  
 Callerya  
 Wisteria  
 Lotus  
 Sesbania  
 Gliricidia  
 Robinia  
 Lathyrus, Pisum, Vicia  
 Medicago, Melilotus, Trifolium, Trigonella  
 Astragalus  
 'Milletioids': Abrus, Canavalia, Galactia, Millettia, Tephrosia,  
 Lonchocarpus  
 Derris  
 Piscidia  
 Centrosema, Clitoria  
 Apios, Mucuna  
 Alysicarpus, Desmodium, Grona  
 Cajanus, Rhynchosia  
 Kummerowia, Lespedeza  
 Lablab, Phaseolus, Vigna, Leptospron, Sigmoidotropis, Strophostyles, Macroptilium  
 Erythrina, Psophocarpus  
 Amphicarpaea, Pueraria, Glycine, Teramnus, Pediomelum  
 Brachypterum, Chapmannia, Coronilla, Ctenodon, Dichrostachys, Enterolobium,  
 Guilandina, Hylodesmum, Indigofera, Lotononis, Orbexilum, Pachyrhizus, Tamarindus

1. Leaves simple, 1-foliolate, or phyllodal (sometimes compound as seedlings or young sprouts)  
... Key A
1. Leaves compound [2]
2. Tendrils terminating some or all leaves ... Key B
2. Tendrils absent, or if present then axillary and not terminating the leaves [3]
3. Leaves 2-foliolate ... Key C
3. Leaves with 3 or more leaflets [4]
4. Leaves mostly 3-foliolate (occasionally some simple or 2-foliolate) [5]
4. Leaves mostly with more than 3 leaflets (occasionally a few with 3, e.g. Chapmannia, Dalbergia sissoo) [7]
5. Leaflets denticulate to crenulate, with the lateral veins markedly straight and subparallel or nearly so, and sometimes slightly exserted from the leaflet margin, reticulate venation not evident ... Key D
5. Leaflets entire to lobed, lateral veins not straight and parallel, or if so then not exserted at the margin, reticulate venation sometimes evident [6]
6. Leaves palmately 3-foliolate, the petiolules of all 3 leaflets arising from the same point, no rachis evident beyond the pair of lateral leaflets, stipels lacking ... Key E
6. Leaves pinnately 3-foliolate, the rachis extending beyond the pair of lateral leaflets and differentiated from and typically articulate with the petiolule of the terminal leaflet, the junction of the petiolule and rachis sometimes with stipels ... Key F

- 7. Leaves palmately compound with 4-11 leaflets ... Key G
- 7. Leaves pinnately compound [8]
- 8. Leaves 2-pinnately compound (sometimes the petiole and rachis highly reduced, e.g. Parkinsonia; rarely 3-pinnately compound), the primary rachis essentially branching with secondary rachises, leaflets borne on the lateral secondary rachises ... Key H
- 8. Leaves once-pinnately compound, the leaflets borne directly on the central, primary rachis [9]
- 9. Leaves without a terminal leaflet straight with the rachis, the leaflets opposite or alternate, if alternate then fruit a loment ... Key I
- 9. Leaves with a terminal leaflet usually straight with the rachis, or if without a terminal leaflet, then fruit not a loment [10]
- 10. Leaflets mostly (3-)4-10 per leaf ... Key J
- 10. Leaflets mostly 10-60 per leaf ... Key K

Key A: Leaves simple

- 1. Woody vine, shrub, or tree [2]
- 1. Herbs or subshrubs, prostrate to erect, or vining [5]
- 2. Leaves phyllodal, 5-12 times longer than wide; flowers actinomorphic, each with more than 20-100 stamens ... Acacia
- 2. Leaves not phyllodal, 0.5-3 times longer than wide; flowers zygomorphic, each with 3-10 stamens [3]
- 3. Leaf blade bi-lobed to strongly emarginate ... Bauhinia
- 3. Leaf blade not bilobed nor strongly emarginate [4]
- 4. Erect shrub to tree; leaf blade ovate-cordate, palmately 5- to 9- veined at the base; corolla pink; fruit dehiscent ... Cercis
- 4. Low spreading shrub to scandent vine; leaf blade ovate to broadly elliptic, only pinnately veined; corolla white; fruit indehiscent ... Dalbergia
- 5. Herbaceous, twining vine; petiole often winged; leaf blade deeply sagittate at the base ... Centrosema sagittatum
- 5. Trailing to erect herb; petiole not winged or petiole absent; leaf blade cordate to cuneate at the base [6]
- 6. Leaf blades gland-dotted [7]
- 6. Leaf blades eglandular [8]
- 7. Leaf blades linear-oblong to narrowly lanceolate; fruit indehiscent ... Orbexillum virgatum
- 7. Leaf blades reniform, obovate, to ovate; fruit dehiscent ... Rhynchosia
- 8. Stem densely silver or tawny sericeous to villous ... Lupinus
- 8. Stem glabrous to sparsely pilose [9]
- 9. Stipules persistent, papery, whitish to pale tan; corolla pale red to purple; fruit a loment ... Alysicarpus
- 9. Stipules persistent or not, foliaceous in texture, green; corolla white to yellow, to blue; fruit not a loment [10]
- 10. Stipules absent; leaf blades broadly ovate to elliptic-orbicular; stamens free ... Baptisia
- 10. Stipules often decurrent, or absent; leaf blades obovate, oblanceolate, elliptic, to linear-elliptic; stamens monadelphous, all connate ... Crotalaria

Key B: Leaves compound; tendrils present

- 1. Leaves 2-foliolate ... Lathyrus
- 1. Leaves with 2-18 leaflets, usually at least some leaves with more than 2 leaflets [2]
- 2. Stipules subequal to or larger than the leaflets; style longitudinally folded ... Pisum sativum



2. Stipules much smaller than the leaflets; style terete ... *Vicia*

Key C: Leaves 2-foliolate

1. Woody vine; axillary tendrils often present ... *Phanera yunnanensis*

1. Herbs; tendrils absent [2]

2. Petioles 1-4 mm long, much shorter than the leaflets; flower solitary ... *Chamaecrista rotundifolia*

2. Petioles 4-20 mm long, subequal to the leaflets or nearly so; inflorescence spiciform, of several flowers ... *Zornia latifolia*

Key D: Leaves 3-foliolate, denticulate with straight veins

1. Inflorescence elongate, (0.5)1-15(25) cm long, the flowers separated or scarcely overlapping ... *Melilotus*

1. Inflorescence a dense head, 0.2-5 cm long, the flowers densely congested and overlapping, or the inflorescence of a solitary flower [2]

2. Petals persistent, concealing the mature fruit ... *Trifolium*

2. Petals deciduous, the fruit visible, not concealed by the flowers [3]

3. Fruit reniform to tightly, spirally coiled, 1-15 mm wide and long ... *Medicago*

3. Fruit linear, 10-40 mm long, 2-5 mm wide ... *Trigonella*

Key E: Leaves palmately 3-foliolate, not denticulate

1. Leaves and calyces glandular-punctate ... *Pediomelum*

1. Leaves and calyces without glands [2]

2. Lateral veins close-set, straight and parallel or nearly so; fruit indehiscent, with 1 seed ... *Kummerowia*

2. Lateral veins arcuate or generally not straight and parallel, typically well spaced; fruit dehiscent, usually with 2 or more seeds [3]

3. Flowers densely congested, except for 1 or 2 proximal flowers ... *Lotononis*

3. Flowers well-spaced along a raceme or solitary [4]

4. Stamens, 10, free, not united ... *Baptisia*

4. Stamens monadelphous, the 10 stamens united into a tube (only distally free) ... *Crotalaria*

Key F:

1. Leaflets, stems, calyces, or fruit gland-dotted [2]

1. Leaflets, stems, and calyces not gland-dotted [11]

2. Shrub or small tree ... *Cajanus*

2. Herbs [3]

3. Leaflets linear-lanceolate ... *Orbexilum pedunculatum*

3. Leaflets orbicular to ovate ... *Rhynchosia*

4. Stem often with prickles; corolla red; seeds black and red ... *Erythrina herbacea*

4. Stems without prickles; corolla ; seeds brown [5]

5. Leaflets filiform, sometimes some linear ... *Dalea pinnata* var. *trifoliata*

5. Leaflets not filiform [6]

6. Fruit indehiscent, 1-seeded or a several-seeded loment [7]

6. Fruit dehiscent, (1)2 or more seeds [10]

7. Petiole fused most of its length with the stipules, the stipules making the petiole appear winged and lobed near the apex; inflorescence a spike; corolla yellow ... *Stylosanthes*

7. Petiole free, the stipules not amplexicaul; inflorescence a raceme or pseudoraceme; corolla not yellow [8]

8. Fruit 1-seeded, without uncinete trichomes ... Lespedeza
8. Fruit a segmented loment with uncinete trichomes [13]
9. Leaflets stipellate; loment stipe included or slightly exserted from the persistent calyx ...  
Desmodium
9. Leaflets estipellate; loment stipe long exserted from the persistent calyx ... Hylodesmum
10. Fruit with 4 wings that are irregularly dentate to roughened entire ... Psophocarpus
10. Fruit without wings or merely with ribs [11]
11. Leaflet coarsely dentate or the terminal leaflet lobate distally ... Pachyrhizus
11. Leaflets entire, sometimes lobate basally [12]
12. Corolla resupinate, with the curvaceous keel petal (pouch-like, enveloping the stamens) in the top position and the broad standard petal in the bottom position [13]
12. Corolla not resupinate, the curvaceous keel petal (pouch-like, enveloping the stamens) in the bottom position or twisted to the sides [15]
13. Standard petal (in bottom position) 1-2 cm wide; fruit 1-3.5 cm wide ... Canavalia
13. Standard petal (in bottom position) 2-4 cm wide; fruit 0.3-1.1 cm wide [14]
14. Calyx lobes subequal to longer than the tube; lateral wing petals tightly appressed around keel petal; style bearded around stigma ... Centrosema
14. Calyx lobes shorter than the tube; lateral wing petals loosely arranged, not tightly appressed to the keel petal; style bearded along one side ... Clitoria
15. Stipules medifixed (peltate or appendiculate); corolla yellow or pink to purple ... Vigna
15. Stipules basifixed; corolla not yellow [16]
16. Flowers not bilaterally symmetrical, the keel twisted or angled to the left or right side (sometimes only slightly, if not then the keel petal darkened at the tip) and the keel petal usually elongate, conspicuous, and exserted, or one of the wing petals oriented upwards and the other downwards [17]
16. Flowers bilaterally symmetrical, the keel petal held mostly straight outwards on the bottom of the flower [21]
17. One wing petal oriented in the top position, one wing petal in the bottom position, the keel and reduced standard petals held laterally, the conspicuous corolla color nearly uniformly red to dark violet ... Macroptilium
17. Standard petal held in the top position and not reduced, the keel petal more or less in the bottom position, and the wings petals held laterally, the conspicuous corolla colors mostly white, pink, to light purple [18]
18. Keel petal dark purplish at the tip, the rest of the keel and corolla lighter in color ...  
Strophostyles
18. Keel petal generally lighter in color, not dark purple at the tip [19]
19. Leaves with uncinete trichomes ... Phaseolus
19. Leaves without uncinete trichomes [20]
20. Fruit mildly to strongly curved, 7-12 mm wide ... Leptospron
20. Fruit nearly straight, 2-5 mm wide ... Sigmoidotropis
21. Larger leaflets <4.3 cm wide along fertile portion of stem [22]
21. Larger leaflets >4.0 cm wide along fertile portion of stem [24]
22. Corolla reddish when fresh; fruit linear, not flattened ... Indigofera
22. Corolla white to purplish; fruit flattened (at least those aboveground ones) [23]
23. Aboveground fruits with multiple seeds, belowground fruits with 1 seed ... Amphicarpaea
23. Aboveground fruits with multiple seeds, without belowground fruits ... Galactia
24. Stipels linear-oblong >0.5 mm wide, persistent ... Lablab
24. Stipels setaceous, <0.5 mm wide, persistent or deciduous [25]

25. Stems, petioles, and leaflets glabrate, strigose, to pubescent; inflorescence pendent; fruit sometimes with urticating hairs ... *Mucuna*

25. Stems, petioles and leaflets pilose, hirsute, or ciliate; fruit without urticating hairs ... *Pueraria*

Key G:

1. Leaves 4-foliolate ... *Zornia*

1. Leaves 5-11-foliolate [2]

2. Leaflets linear-oblong, oblanceolate, to obovate ... *Lupinus*

2. Leaflets linear-filiform, some proximal ones sometimes linear-oblong ... *Orbexilum lupinellus*

Key H:

1. Leaflets oblong-elliptic, elliptic, ovate, obovate, to lanceolate 5-40 mm wide [2]

1. Leaflets linear-oblong to linear-lanceolate, 0.3-6 mm wide [13]

2. Bark, stem, petiole, and/or rachis with prickles or thorns (rarely lacking in *Gleditsia*) [3]

2. Bark, stem, petiole, and rachis without prickles or thorns [5]

3. Erect tree; trunk and stems usually with stout thorns, often branching; petiole and rachis without prickles; inflorescence catkin-like, flowers congested and not showy; calyx and corolla similar and greenish; stamens 6-8; fruit without prickles ... *Gleditsia*

3. Scrambling to scandent shrub; trunk or stems with recurved prickles; petiole and rachis usually prickly; inflorescence not catkin-like; calyx and corolla dissimilar, the corolla yellow; stamens 10; fruit prickly [4]

4. Flowers bisexual, in racemes; fruits always glabrous; seeds laterally compressed, smooth, without fracture lines ... *Denisophytum*

4. Flowers unisexual, segregated into female and male racemes; fruits usually covered in spinescent bristles; seeds globose, with parallel fracture lines concentric with the small apical hilum ... *Guilandina*

5. Leaves with one pair of pinnae each ... *Pithecellobium*

5. Leaves usually with 2 or more pinnae [6]

6. Flowers not in dense heads, the individual flowers discernible, with showy, colorful petals, the stamens not colorful and showy [7]

6. Flowers in dense heads, the individual flowers scarcely discernible, with showy, colorful, exerted stamens (sometimes petaloid and sterile), the corolla reduced and not showy [9]

7. Fruit samaroid ... *Peltophorum*

7. Fruit not samaroid [8]

8. Fruit dehiscent, with valves twisting upon dehiscence, laterally-compressed and subligneous to woody ... *Caesalpinia*

8. Fruit indehiscent, somewhat fleshy, turgid and coriaceous ... *Tara*

9. Petiole and rachis eglandular [10]

9. Petiole or rachis glandular [11]

10. Leaflets with 1 primary vein; stamens 10 per flower; seed red ... *Adenanthera*

10. Leaflets with 2-4 basal veins; stamens more than 10 per flower; seed brown ... *Calliandra*

11. Gland at the base to middle of the petiole ... *Albizia*

11. Gland between the proximal pinnae [12]

12. Stipules subequal to larger than the leaflets; stamens white, connate ... *Lysiloma*

12. Stipules much smaller than the leaflets (or with stipular spines); stamens bright yellow, free ... *Vachellia*

13. Stems, petiole, and/or rachis with prickles or stipular spines [14]

13. Stems, petiole, and rachis without prickles or spines, or with axillary thorns only from short branchlets [17]

- 14. Trailing or scandent herbs; stamens 4-10 per flower ... Mimosa
- 14. Spreading to erect shrubs or tree; stamens 10 or more per flower [15]
- 15. Stems with prickles, not stipular ... Senegalia
- 15. Stems with stipular spines [16]
- 16. Leaves sessile, the pinnae congested on a short spur; flowers not in dense heads, the individual flowers discernible, with showy, colorful petals, the stamens not colorful and showy ... Parkinsonia)
- 16. Leaves petiolate, the pinnae well-spaced; flowers in dense heads, the individual flowers scarcely discernible, with showy, colorful, exserted stamens (sometimes petaloid and sterile), the corolla reduced and not showy ... Vachellia
- 17. Petiole and rachis eglandular or with scattered stipitate glands [18]
- 17. Petiole and/or rachis with glands or nectaries, especially between the lower pinnae [22]
- 18. Stipules pinnately divided; flowers not in dense heads, the individual flowers discernible, with showy, colorful petals, the stamens not colorful and showy [19]
- 18. Stipules not pinnately divided; flowers in dense heads, the individual flowers scarcely discernible, with showy, colorful, exserted stamens (sometimes petaloid and sterile), the corolla reduced and not showy [20]
- 19. Petiole and rachis glabrate; ... Delonix
- 19. Petiole and rachis reddish pubescent; ... Peltophorum
- 20. Shrub or tree to 3(5) m; stamens more than 10 per flower ... Acaciella
- 20. Trailing or scandent herbs; stamens 4-10 per flower [21]
- 21. Head with monomorphic flowers, the stamens pink ... Mimosa
- 21. Head with the apical flowers staminate and the basal flowers with showy, yellow petaloid staminodes ... Neptunia
- 22. Stems with axillary thorns modified from short branchlets ... Dichrostachys
- 22. Stems without thorns [23]
- 23. Leaves 3-14 cm long [24]
- 23. Leaves 12-45 cm long [25]
- 24. Herbs or shrubs to 3 m; leaflets <1.5 mm wide; stamens 5 or 10 ... Desmanthus
- 24. Shrubs or trees to 15 m; leaflets >1.5 mm wide; stamens more than 10 per flower ... Lysiloma
- 25. Fruit reniform, semi-circular, to coiled, indehiscent ... Enterolobium
- 25. Fruit elongate, dehiscent [26]
- 26. Gland at the base to middle of the petiole; stamens more than 10 per flower ... Albizia
- 26. Gland between the lower pinnae, just below the pinnae, or above the middle of the petiole; stamens 10 per flower ... Leucaena

Key I:

- 1. Leaflets uniformly 4 or nearly so ... Arachis
- 1. Leaflets more than 4, at least on some leaves [2]
- 2. Twining, climbing vine; seeds red and black ... Abrus
- 2. Herb, shrub, or tree, not twining; seeds brownish [3]
- 3. Trunk and stems often with thorns; inflorescence catkin-like, flowers congested and not showy; calyx and corolla similar and greenish; stamens 6-8 ... Gleditsia
- 3. Plant lacking thorns; inflorescence not catkin-like; calyx and corolla dissimilar, the corolla brightly colored; stamens 10 [4]
- 4. Fruit a loment, segmented and breaking apart into 1-seeded units ... Aeschynomene
- 4. Fruit not a loment, the entire fruit usually dehiscent with 1 or more seeds [5]
- 5. Corolla papilionaceous, with a pouch-like keel petal containing the stamens and flanked by the lateral wing petals with the standard petal above and largest ... Sesbania

- 5. Corolla not papilionaceous, with 3 or 5 petals, without a keel petal [6]
- 6. Tree with blocky bark; petals 3 ... Tamarindus
- 6. Herb, shrub, or tree with smooth bark; petals 5 [7]
- 7. Shrubs to trees; extrafloral nectaries absent; pedicels 2-bracteolate at or shortly above the base; filaments of 3 lower antesealous stamens sigmoidally curved (S-shaped) and its anther introrsely dehiscent by slits, 5 stamens with anthers dehiscent mostly by basal pores; fruit elongate, cylindric or compressed, indehiscent, pulpy or pithy within; seeds 1- or 2-seriate, their funicle filiform; seed-coat smooth, exareolate ... Cassia
- 7. Herb, shrubs, or trees; extrafloral nectaries present or absent; pedicels ebracteolate or with bracteoles almost always inserted above or near the middle of the pedicel; filaments of all stamens straight or simply incurved, the anthers terminally dehiscent by slits or pores; fruit variable; funicle and seed variable [8]
- 8. Herbs; extrafloral nectaries absent or dish- or cup-shaped, rarely flat, secreting nectar from a concave (flat) surface; leaflets to 3 cm long; bracteoles 2 on the pedicel; androecium (suberratically) actinomorphic, the 2 cycles of stamens bearing anthers of different lengths; anther thecae ciliolate along the sutures; funicle deltately dilated; fruit elastically dehiscent, the valves coiling; seed-coat smooth or pitted, but exareolate ... Chamaecrista
- 8. Herbs, shrubs, or trees; extrafloral nectaries absent or mounded, claviform, or phalloid, secreting nectar from a convex surface; leaflets mostly 1.5-13 cm long; bracteoles 0 on the pedicel; androecium commonly zygomorphic, the stamens tending to dwindle from abaxial to adaxial side of the fl, the 3 adaxial members commonly staminodal, but sometimes all 10 subequal fertile; anther-thecae naked along the sutures; funicle filiform; fruit indehiscent or dehiscent but not coiling; seed-coat smooth or minutely rugulose, sometimes with a closed areole on the face or margin ... Senna

Key J:

- 1. Leaflets conspicuously gland-dotted; 4 petals epistemonous (arising from the staminal tube), 1 petal from the receptacle ... Dalea
- 1. Leaflets not glandular-punctate or inconspicuously pellucid-punctate; all petals arising from the receptacle [2]
- 2. Woody vines, shrubs, or trees [3]
- 2. Herbs, sometimes vining [8]
- 3. Leaflets alternate ... Dalbergia
- 3. Leaflets mostly opposite to subopposite [4]
- 4. Woody vines; branchlets not white-lenticellate [5]
- 4. Shrubs to trees; branchlets conspicuously white-lenticellate [6]
- 5. Leaflet underside with conspicuous reticulate venation; inflorescence erect to spreading; corolla upper petal (standard) without basal callosities ... Callerya
- 5. Leaflet underside generally with obscured reticulate venation; inflorescence pendent; corolla upper petal (standard) with basal callosities ... Wisteria
- 6. Leaflet underside finely areolate from the reticulate venation, the lateral veins close-set, mostly 9-18 on each side of the leaflet midrib; fruit with 4 papery wings ... Piscidia
- 6. Leaflet underside generally with obscure reticulate venation, the lateral veins well-spaced, mostly 5-10 on each side of the leaflet midrib; fruit somewhat flattened, without wings [7]
- 7. Leaflets finely pellucid-punctate; fruit 5-13 cm long, with 1-3 seeds ... Lonchocarpus
- 7. Leaflets not pellucid-punctate; fruit 2-5 cm long, with 1 seed ... Millettia
- 8. Inflorescence rachis stipitate-glandular ... Chapmannia
- 8. Inflorescence rachis without glands [9]
- 9. Leaves sessile, the proximal leaflet pair stipule-like; inflorescence umbellate ... Lotus

- 9. Leaves petiolate, the proximal leaflet pair distant from the stem or not stipule-like; inflorescence a raceme or pseudoraceme, or the flower solitary [10]
- 10. Plant with some trichomes 2-armed; keel petal quickly articulating downwards upon provocation, causing the stamens to flick and release a puff of pollen ... Indigofera
- 10. Plant without 2-armed trichomes; keel petal not quickly moving nor quickly releasing the stamens upon provocation [11]
- 11. Flower resupinate, the keel petal in the upper position, the lower petal (standard) 3.5-5 cm long or wide ... Clitoria
- 11. Flower not resupinate, the keel petal in the lower position, the upper petal (standard) 0.5-2 cm long or wide [12]
- 12. Leaflets with close-set straight and parallel lateral veins ... Tephrosia
- 12. Leaflets with branching, curving, or interconnecting lateral veins, sometimes obscure [13]
- 13. Leaflets ovate with an acute to acuminate apex; keel petal strongly curved reaching the top or base of the flower; inflorescence of congested flowers ... Apios
- 13. Leaflets elliptic to ovate with a subacute, rounded, obtuse, to emarginate apex; keel petal curved at the apex only, held outward away from the flower center ... Galactia

Key K:

- 1. Woody vines [2]
- 1. Herbs, shrubs, or trees [3]
- 2. Inflorescence erect to spreading, rarely pendent ... Derris
- 2. Inflorescence pendent ... Wisteria
- 3. Flower with only one petal (the standard) hooded over the stamens ... Amorpha
- 3. Flower with 5 petals [4]
- 4. Leaflets gland-dotted; 4 petals epistemonous (arising from the staminal tube), 1 petal from the receptacle ... Dalea
- 4. Leaflets not glandular-punctate; all petals arising from the receptacle [5]
- 5. Plant with some trichomes 2-armed; keel petal quickly articulating downwards upon provocation, causing the stamens to flick and release a puff of pollen ... Indigofera
- 5. Plant without 2-armed trichomes; keel petal not quickly moving nor quickly releasing the stamens upon provocation [6]
- 6. Herbs [7]
- 6. Shrubs to trees [9]
- 7. Inflorescence umbellate ... Coronilla
- 7. Inflorescence a raceme or pseudoraceme [8]
- 8. Leaflets with branching, curving, or interconnecting lateral veins, sometimes obscure ... Astragalus
- 8. Leaflets with close-set straight and parallel lateral veins ... Tephrosia
- 9. Corolla yellow; stamens free; fruit tightly shaped around the seeds ... Sophora
- 9. Corolla white, pink, to purple; stamens diadelphous (9 mostly fused, 1 only basally fused with the other 9 and otherwise free) [10]
- 10. Stems without spines; leaflets acuminate at the apex; calyx truncate to toothed; fruit indehiscent; inflorescence ascending to erect ... Gliricidia
- 10. Stems with or without stipular spines; leaflets rounded at the apex; calyx lobed; fruit dehiscent; inflorescence pendent ... Robinia

**Abrus** {AFP}

\**Abrus precatorius* L.— {AFP}

## Acacia {AFP}

1. Phyllode 3(-5)-veined; inflorescence a spike ... *A. auriculiformis*
1. Phyllode 1-veined; inflorescence of numerous globose heads [2]
2. Basal phyllodal gland <1 mm wide; flower head 5-7 mm wide ... *A. retinodes*
2. Basal phyllodal gland 1-2 mm wide; flower head 7-12 mm wide ... *A. saligna*

\**Acacia auriculiformis* A.Cunn. ex Benth.— {AFP}

^*Acacia retinodes* Schltdl.— {AFP}

^*Acacia saligna* (Labill.)H.L.Wendl.— {AFP}

## Acaciella {AFP}

*Acaciella angustissima* (Mill.)Britton & Rose— {AFP} State Endangered.

## Adenanthera {AFP}

\**Adenanthera pavonina* L.— {AFP}

## Aeschynomene {AFP}

1. Stems floating ... *A. fluitans*
1. Stems not floating, prostrate to erect [2]
2. Primary stems distinct from the thicker tuberous root; stipules basally attached, extending only above the node; calyx with 5 subequal lobes; fruit with 2-5 segments [3]
2. Primary stem more or less grading into a taproot; stipules peltate, extending below and above the node; calyx bilabiate, the upper lobe 2-fid, the lower 3-fid; fruit with 3-13 segments [4]
3. Plant pubescent, canescent, to hispid, occasionally glandular on the stem; leaflets 8-18(-30) per leaf, 3-6 mm long, the lateral venation obscure ... *C. histrix* var. *incana*
3. Plant stipitate-glandular throughout, or occasionally glands not present on fruits; leaflets 3-9 per leaf, 4-18 mm long, the white lateral venation conspicuous below ... *C. viscidula*
4. Leaflets with 2-4 longitudinal veins ... *A. americana*
4. Leaflets with 1 longitudinal vein [5]
5. Wetland perennials with rather stout stems at the base; calyx lobes entire or nearly so; stipe below fruit (above pedicel) 10-15 mm long; fruit crenate-undulate on both margins ... *A. pratensis*
5. Mostly weedy, short-lived plants; calyx lobes sometimes dentate; stipe below fruit (above pedicel) 3-10 mm long; fruit crenate-undulate only on the lower margin, the upper margin mostly straight [6]
6. Young stems often glabrate to sparsely hispidulose; calyx 4-6 mm long; corolla 7-10 mm long; stamens 6-8 mm long; loment segments 4-5 mm long ... *A. indica*
6. Young stems often moderately hispid to pilose; calyx 5-8 mm long; corolla 8-15 mm long; stamens 9-13 mm long; loment segments 5-7 mm long; ... *A. rudis*

*Aeschynomene americana* L.— {AFP}

\**Aeschynomene fluitans* Peter— {AFP}

\**Aeschynomene indica* L.— {AFP}

*Aeschynomene pratensis* Small var. *pratensis*— {AFP} Endemic. State Endangered.

\**Aeschynomene rudis* Benth.— {AFP}

## **Albizia** {AFP}

1. (10-)13-30 pairs of leaflets per pinnae; leaflets 7-25 mm long, 2-6 mm wide [2]
1. 3-13 pairs of leaflets per pinnae; leaflets 20-40 mm long, 10-20 mm wide [3]
2. Calyx 2-4 mm long; corolla 7-11 mm long; stamens 25-35 mm long ... *A. julibrissin*
2. Calyx 1-2 mm long; corolla 4-5 mm long; stamens 2-8 mm long ... *A. lebbekoides*
3. Leaflets elliptic-oblong; calyx 4-6 mm long; corolla 7-14 mm long; stamens 10-25 mm long; fruit 3-4 cm wide ... *A. lebbeck*
3. Leaflets ovate; calyx 1-2 mm long; corolla 4-5 mm long; stamens 3-10 mm long; fruit 1.3-2.5 cm wide ... *A. procera*

\**Albizia julibrissin* Durazz.— {AFP}

\**Albizia lebbeck* (L.) Benth.— {AFP}

^ *Albizia lebbekoides* (DC.) Benth.— {AFP}

^ *Albizia procera* (Roxb.) Benth.— {AFP}

## **Alysicarpus** {AFP}

1. Stem pilose; leaf blade underside appressed-pilose; calyx 5-7 mm long; fruit constricted between the rugose segments ... *A. rugosus*
1. Stem glabrous to puberulent; leaf blade underside glabrous to puberulent; calyx 2-5 mm long; fruit not constricted between the smooth to faintly rugose segments [2]
2. Leaves mostly obovate to ovate-lanceolate, 1.2-2.3 times long as wide (the few below the inflorescence narrower); rachis internodes mostly subequal to longer than the flowers ... *A. ovalifolius*
2. Leaves mostly elliptic to oblong-lanceolate, mostly 2-3 times long as wide; rachis internodes mostly shorter than the flowers ... *A. vaginalis*

\**Alysicarpus ovalifolius* (Schumach. & Thonn.) J. Léonard— {AFP}

\**Alysicarpus rugosus* (Willd.) DC.— {AFP}

\**Alysicarpus vaginalis* (L.) DC.— {AFP}

## **Amorpha** {AFP}

1. Erect shrub 1-4 m tall; petiole and rachis eglandular or sparingly glandular; petiole usually longer than the width of the proximal leaflet; leaflets 9-31, eglandular to inconspicuously or conspicuously glandular, the midvein often exserted (0.1-)0.5-1.5 mm and tapered to slightly swollen at the tip; corolla usually purple to indigo; style ascending pilose; fruit (2-)3-4.5 mm wide, 5-9 mm long ... *A. fruticosa*
1. Erect shrub 0.3-1.5 m tall; petiole and rachis glandular, more densely so near the base of the petiole; petiole usually shorter than the width of the proximal leaflet; leaflets 15-63, conspicuously glandular with 40-225(-425) glands per half-leaflet, the midvein often exserted 0-0.5(-0.8) mm and globose-glandular at the tip; corolla usually white, rarely purplish; style retrorsely pubescent; fruit 1.8-2.5 mm wide, 4-6.5 mm long [2]
2. Leaflets usually 1.8-3 times long as wide, entire to subcrenulate, the petiolule 1-1.5 mm long ... *A. herbacea* var. *herbacea*
2. Leaflets mostly 2.8-3.5 times long as wide, usually crenulate and revolute, the petiolule usually 1.5-2 mm long ... *A. herbacea* var. *crenulata*

*Amorpha fruticosa* L.— {AFP}



***Amorpha herbacea*** Walter var. ***crenulata*** (Rydb.) Isely— {AFP} Endemic. Federally Endangered. State Endangered.

***Amorpha herbacea*** Walter var. ***herbacea***— {AFP}

### Amphicarpaea {AFP}

***Amphicarpaea bracteata*** (L.) Fernald— {AFP}

### Apios {AFP}

***Apios americana*** Medik.— {AFP}

**Arachis {AFP}** Taxonomically difficult group, recognized species not always clearly differentiated.

1. Rhizomatous perennial; petiole 2-3.5 cm long; corolla 1.5-2 cm long ... *A. glabrata*

1. Tap-rooted annual; petiole 5-10 cm long; corolla 1-1.5 cm long ... *A. hypogaea*

\****Arachis glabrata*** Benth.— {AFP}

^***Arachis hypogaea*** L.— {AFP}

### Astragalus {AFP}

1. Plant glabrate to strigose; leaflets usually cordate to broadly notched at the apex, (9-)15-27 per leaf; corolla pale pink to blue-lilac ... *A. obcordatus*

1. Plant villous to pilose; leaflets obtuse to slightly emarginate at the apex, (3-)7-15 per leaf; corolla pale or greenish yellow ... *A. villosus*

***Astragalus obcordatus*** Elliott— {AFP}

***Astragalus villosus*** Michx.— {AFP}

### Baptisia {AFP}

1. Stipules absent; leaves 1-foliolate [2]

1. Stipules present, 0.1-15 mm long (deciduous or persistent); leaves 3-foliolate (distal ones sometimes 1- or 2-foliolate) [3]

2. Leaves perfoliate; flowers axillary, solitary ... *B. perfoliata*

2. Leaves sessile; flowers numerous in a raceme to 20 cm long ... *B. simplicifolia*

3. Pedicels 1-4 cm long, with bracteoles above the middle, subtended by a bract 3-25 mm long; corolla 10-14 mm long [4]

3. Pedicels 0.3-1.3 cm long, without bracteoles, subtended by a bract to 5 mm long or the bract absent; corolla (11-)13-24 mm long [6]

4. Pedicel bracteoles 2-5(-11) mm long; calyx 5-7(-9) mm long, the lobes subequal to shorter than the calyx tube ... *B. lecontei*

4. Pedicel bracteoles 10-16 mm long; calyx 9-13 mm long, the lobes much longer than the tube [5]

5. Plant glabrate ... *B. calycosa*

5. Plant hirsute ... *B. hirsuta*

6. Corolla white [7]

6. Corolla yellow [8]

7. Corolla 20-25 mm long; fruit 10-25(-30) mm wide, black when mature ... *B. alba*

7. Corolla 14-18 mm long; fruit 7-9 mm wide, yellow-brown when mature ... *B. albescens*

8. Petioles 4-12 mm long; leaflets narrowly oblanceolate to obovate, mostly 2.5-4.5 times long as wide; flowers often solitary and axillary, and racemose; fruit woody, 1-2.5 cm long, 1-1.2 cm wide ... *B. lanceolata*

8. Petioles 15-20 mm long; leaflets broadly elliptic to broadly obovate, mostly 2-2.5 times long as wide; flowers racemose; fruit coriaceous, 3-4 cm long, 1.8-2.5 cm wide ... *B. megacarpa*

***Baptisia alba*** (L.)Vent.— {AFP}

***Baptisia albescens*** Small— {AFP}

***Baptisia calycosa*** Canby— {AFP} Endemic. State Endangered.

***Baptisia hirsuta*** Small— {AFP} State Threatened.

***Baptisia lanceolata*** (Walter)Elliott— {AFP}

***Baptisia lecontei*** Torr. & A.Gray— {AFP}

***Baptisia megacarpa*** Chapm. ex Torr. & A.Gray— {AFP} State Endangered.

***Baptisia perfoliata*** (L.)R.Br.— {AFP}

***Baptisia simplicifolia*** Croom— {AFP} Endemic. State Threatened.

## **Bauhinia** {AFP}

1. Stems with intrastipular spines; stamens 10 ... *B. aculeata*

1. Stems without spines; stamens 3 or 5 ... 2

2. Flower buds narrowly club-shaped and slightly winged to the apex; stamens 3 ... *B. purpurea*

2. Flower buds spindle-shaped and tapering to the apex; stamens 5 ... *B. variegata*

^ *Bauhinia aculeata* L.— {AFP}

^ *Bauhinia* × *blakeana* Dunn (*purpurea* × *variegata*)— Commonly cultivated. Distinguished by the floral bud 5-winged distally, petals lanceolate to obovate, 5 stamens, 2-5 staminodes, and does not set fruit.

^ *Bauhinia purpurea* L.— {AFP}

\* ***Bauhinia variegata*** L.— {AFP}

## **Brachypterum** {AFP}

\* ***Brachypterum scandens*** (Roxb.)Miq.— {AFP}

## **Caesalpinia** {AFP}

^ *Caesalpinia pulcherrima* (L.)Sw.— {AFP}

## **Cajanus** {AFP}

^ *Cajanus cajan* (L.)Huth— {AFP} Frequently cultivated; occasionally locally naturalized.

## **Callerya** {AFP}

\* ***Callerya reticulata*** (Benth.)Schot— {AFP}

## **Calliandra** {AFP}

^ *Calliandra haematocephala* Hassk.— {AFP} Sparingly naturalized.

## **Canavalia** {AFP}

1. Fruit 8-15 cm long, seeds 4-9; fresh seeds impermeable to water, buoyant, marbled; mostly restricted to maritime habitats ... *C. rosea*

1. Fruit 15-30 cm long, seeds 8-20; fresh seeds permeable to water, not buoyant, marbled or not; not restricted to maritime habitats [2]
2. Stipules persistent; fruits 15-25 cm long, 2.5-3 cm wide; seeds 1.5 cm-2 long, pale gray to brown, sometimes marbled ... *C. brasiliensis*
2. Stipules caducous; fruits 25-30 cm long, 3.5-4 cm wide; seeds 2-2.5 cm long, white ... *C. ensiformis*
1. Stems with intrastipular spines; stamens 10 ... *B. aculeata*
1. Stems without spines; stamens 3 or 5 [2]
2. Flower buds narrowly club-shaped and slightly winged to the apex; stamens 3 ... *B. purpurea*
2. Flower buds spindle-shaped and tapering to the apex; stamens 5 ... *B. variegata*

\****Canavalia brasiliensis*** Mart. ex Benth.— {AFP}

^*Canavalia ensiformis* (L.) DC.— {AFP}

***Canavalia rosea*** (Sw.) DC.— {AFP}

### Cassia {AFP}

^*Cassia fistula* L.— {AFP}

### Centrosema {AFP}

1. Leaves 1-foliolate; petiole often winged ... *C. sagittatum*
1. Leaves 3-foliolate; petiole not winged [2]
2. Leaflets ovate, generally chartaceous and the veins not prominent on the lower surface; lower calyx lobe 5-8 mm long, subulate to lanceolate, the upper bifurcate calyx lobe 3-4 mm long ... *C. arenicola*
2. Leaflets linear to ovate, often subcoriaceous, often the veins prominent on the lower surface; lower calyx lobe 8-11 mm long, subulate, the upper bifurcate calyx lobe 7-8 mm long ... *C. virginianum*

***Centrosema arenicola*** (Small) F.J. Herm.— {AFP} Endemic. State Endangered.

\****Centrosema sagittatum*** (Humb. & Bonpl. ex Willd.) Brandegee ex L. Riley— {AFP}

***Centrosema virginianum*** (L.) Benth.— {AFP}

### Cercis {AFP}

***Cercis canadensis*** L.— {AFP}

### Chamaecrista {AFP}

1. 2 leaflets per leaf ... *C. rotundifolia*
1. 4-50 leaflets per leaf [2]
2. Plants often <30 cm tall, sometimes to 1 m tall; stems prostrate, decumbent, spreading, or sometimes ascending to erect; 2-6(7) pairs of leaflets per leaf [3]
2. Plant 20-150 cm tall; stems mostly erect to erect-ascending; mostly 7-25 pairs of leaflets per leaf [5]
3. Leaflets 3-8 mm long, 2-4 mm wide; fruits 1.5-3 cm long ... *C. serpens*
3. Leaflets (5-)8-25 mm long, 3-10(-20) mm wide; fruits 2.5-4 cm long [4]
4. Root tuberous; stems pilosulous, the longest hairs <11 mm long; sepals 8-10 mm long; petals 12-15 mm long ... *C. lineata* var. *keyensis*
4. Root a slender taproot; stems pilose, the longest hairs >11 mm long; sepals 3-5 mm long; petals 4-6 mm long ... *C. pilosa*

- 5. Sepals 4–6 mm long; corolla 0.8–1 cm wide, the larger petals 4–8 mm long [6]
- 5. Sepals 9–12 mm long; corolla 2.5–3.5 cm wide, the larger petals 13–20 mm long [7]
- 6. Plant pilose ... *C. nictitans* var. *aspera*
- 6. Plant glabrate to incurved-puberulent ... *C. nictitans* var. *nictitans*
- 7. Plant usually monocarpic, 20–140(–240) cm tall, with a branched vertical taproot gradually reduced to finer roots, the taproot grading into the main stem; main stem usually solitary (rarely multiple) from the base of the plant, glabrous, sparsely to densely puberulent, pubescent, pilose, to hirsute, 2–13 mm wide at the base ... *C. fasciculata*
- 7. Plant perennial, 30–60 cm tall, the main root horizontal and generally perpendicular to the main stems; main stems usually several (rarely solitary) from the base of the plant, glabrous to sparsely puberulent, 1–7 mm wide at the base [8]
- 8. Horizontal root to ca. 20+ cm long; anthers dark red to purple-red, sometimes yellow towards the base; flowering year-round, but especially Mar–Aug; pine rocklands of southern Florida ... *C. deeringiana*
- 8. Horizontal root to ca. 46+ cm long; anthers yellow to yellow-brown; flowering late May–early Aug; sandy and clayey pine and oak woodlands of the western Florida panhandle ... *C. horizontalis*

***Chamaecrista deeringiana*** Small & Pennell— {AFP} Endemic.

***Chamaecrista fasciculata*** (Michx.)Greene— {AFP}

***Chamaecrista horizontalis*** A.R.Franck— {AFP}

***Chamaecrista keyensis*** Pennell— {AFP} Endemic. State Endangered.

***Chamaecrista nictitans*** (L.)Moench var. ***aspera*** (Muhl. ex Elliott)H.S.Irwin & Barneby— {AFP}

***Chamaecrista nictitans*** (L.)Moench var. ***nictitans***— {AFP}

\****Chamaecrista pilosa*** (L.)Greene— {AFP}

\****Chamaecrista rotundifolia*** (Pers.)Greene— {AFP}

\****Chamaecrista serpens*** (L.)Greene— {AFP}

**Chapmannia** {AFP}

***Chapmannia floridana*** Torr. & A.Gray— {AFP} Endemic.

**Clitoria** {AFP}

1. Leaflets 5–7 per leaf; corolla usually blue-violet or sometimes white, and greenish white to white at the center ... *C. ternatea*

1. Leaflets 3 per leaf; corolla usually pinkish white to lilac with darker lines around a white patch near the center [2]

2. Leaflets mostly linear to linear-lanceolate, 4–6 times long as wide; apex of the gynophore and base of the fruit exserted from the calyx ... *C. fragrans*

2. Leaflets mostly ovate to ovate-lanceolate, 2–3 times long as wide; apex of the gynophore and base of the fruit usually included within the calyx ... *C. mariana*

***Clitoria fragrans*** Small— {AFP} Endemic. Federally Threatened. State Endangered.

***Clitoria mariana*** L.— {AFP}

^ ***Clitoria ternatea*** L.— {AFP}

**Coronilla** {AFP}

\****Coronilla varia*** L.— {AFP}

## Crotalaria {AFP}

1. Leaves 3-foliolate [2]
1. Leaves 1-foliolate [8]
2. Leaflets linear to linear-lanceolate [3]
2. Leaflets elliptic to obovate [4]
3. Calyx 3-3.5 mm long; corolla 8-10 mm long; fruit 2-4 cm long, 0.6-0.8 cm wide, falcate ... *C. lanceolata*
3. Calyx 6-8 mm long; corolla 18-20 mm long; fruit (3-)4-7 cm long, 1.5-2 cm wide, generally straight ... *C. ochroleuca*
4. Petioles 1-10 mm long; leaflets 5-16(-30) mm long; fruit 8-15 mm long [5]
4. Petioles 12-45 mm long; larger leaflets 12-55 mm long; fruit 14-45 mm long [6]
5. Leaflet underside strigulose; inflorescence with 2-20 flowers; fruit 1.9-2.2 times long as wide ... *C. pumila*
5. Leaflet underside glabrate to pilosulous; inflorescence with 1-3 flowers, sometimes fasciculate; fruit 1.3-1.7 times long as wide ... *C. virgulata* subsp. *grantiana*
6. Younger stems pilose to pubescent; fruit pilose ... *C. incana*
6. Younger stems strigose; fruit glabrate, puberulent, to strigulose [7]
7. Leaflets obovate, 1-2 times long as wide; bracts subtending flowers quickly deciduous; calyx strigulose; fruit 5-6 mm wide ... *C. pallida* var. *obovata*
7. Leaflets elliptic, 3-4 times long as wide; ca. 1 mm-long bracts subtending flowers persistent; calyx glabrous to puberulent; fruit 8-12 mm wide ... *C. trichotoma*
8. Leaf blade ovate, abruptly narrowed and cuneate at the base; corolla white to violet ... *C. verrucosa*
8. Leaf blade linear, elliptic, oblong, to obovate, rounded to gradually narrowed to the petiole; corolla yellow [9]
9. Stipules absent or not decurrent; leaf blades 0.8-8 cm wide; corolla 1.7-3.5 cm long; mostly stout, erect herbs or subshrubs [10]
9. Stipules absent or present and decurrent-winged; leaf blades 0.2-4(-5) cm wide; corolla 0.7-1.4 cm long; mostly prostrate to erect, weak herbs [12]
10. Leaf blade narrowly elliptic to linear-lanceolate, 6-8 times longer than wide; fruit pubescent ... *C. juncea*
10. Leaf blade obovate, 2-4 times longer than wide; fruit glabrous [11]
11. Leaf blade to 3.5(-4) cm wide; stipules quickly deciduous; bracts subtending flowers subulate, 1-2 mm long, often shed by anthesis ... *C. retusa*
11. Leaf blade to 8 cm wide; stipules persistent, deltoid; bracts subtending flowers deltoid-ovate, 4-10 mm long, persistent ... *C. spectabilis*
12. Leaf blades mostly 1-5 cm wide; fruit 3-4 cm long ... *C. alata*
12. Leaf blades mostly 0.2-1.5 cm wide; fruit 1-3 cm long [13]
13. Leaf blades linear to lanceolate (sometimes ovate towards the base), glabrous on the upper surface ... *C. purshii*
13. Leaf blades linear, elliptic, to obovate, strigose on the upper surface [14]
- 14.. Stem hairs spreading to ascending, subequal to stem width; leaf blades not brittle (not breaking when folded), the lower surface pale or whitish ... *C. rotundifolia* s.str.
14. Stem hairs antrorsely strigose, ca.  $<1/2$  of stem width; leaf blades thick, brittle (breaking when folded), both surfaces green [15]
15. Leaf blades linear, 1.5-3 mm wide; sepal lower side reddish ... *C. linaria*
15. Leaf blades elliptic, ovate, to orbicular, occasionally a few distal ones linear; sepal underside green [16]

16. Stems erect; stipules absent; keel petal apices short, only slightly twisted distally, slightly incurved back towards upper petal; pubescent style 3-3.5 mm long, curved at the base; mature fruit grayish to purplish brown ... *C. avonensis*

16. Stems prostrate; stipules absent or persistent, decurrent-winged along the stem; keel petal apices elongate, spirally twisted distally, projected upward and outward; pubescent style 4-7 mm long, bent at near right angle at the base; mature fruit black ... *C. maritima*

\****Crotalaria alata*** Buch.-Ham. ex D.Don— {AFP}

***Crotalaria avonensis*** DeLaney & Wunderlin— {AFP} Endemic. Federally Endangered. State Endangered.

\****Crotalaria incana*** L.— {AFP}

^ *Crotalaria juncea* L.— {AFP}

\****Crotalaria lanceolata*** E.Mey.— {AFP}

***Crotalaria linaria*** Small— Tentatively accepted following Ward (2010), but treated as a variety by Senn (1939).

***Crotalaria maritima*** Chapm.— Accepted following Ward (2010), but alleged to intergrade with *C. rotundifolia* s.str. (Windler 1971).

\****Crotalaria ochroleuca*** G.Don— {AFP}

\****Crotalaria pallida*** Aiton var. ***obovata*** (G.Don)Polhill— {AFP}

***Crotalaria pumila*** Ortega— {AFP}

***Crotalaria purshii*** DC.— {AFP} Stems normally strigose, but alleged hybrids with *C. rotundifolia* said to have spreading pubescence (Isely 1998:490).

\****Crotalaria retusa*** L.— {AFP}

***Crotalaria rotundifolia*** J.F.Gmel.— {AFP} In the strict sense, as here ventured, restricted to northern Florida. Isely (1998:489) treats this as one polymorphic species throughout Florida that is "reticulately confluent" with other segregates (*C. linaria*, *C. maritima*). Isely also speculated the existence of putative hybrids with *C. sagittalis* in the W panhandle (specimens long-pilose; however, *sagittalis* itself being unknown in Florida) and hybrids with *C. purshii* (glabrate upper leaf surface like *purshii* and spreading stem pubescence like *rotundifolia*).

\****Crotalaria spectabilis*** Roth— {AFP}

\****Crotalaria trichotoma*** Bojer— {AFP}

\****Crotalaria verrucosa*** L.— {AFP}

\****Crotalaria virgulata*** Klotzsch subsp. ***grantiana*** (Harv.)Polhill— {AFP}

## Ctenodon {AFP}

1. Plant pubescent, canescent, to hispid, occasionally glandular on the stem; leaflets 8-18(-30) per leaf, 3-6 mm long, the lateral venation obscure ... *C. histrix* var. *incana*

1. Plant stipitate-glandular throughout, or occasionally glands not present on fruits; leaflets 3-9 per leaf, 4-18 mm long, the white lateral venation conspicuous below ... *C. viscidula*

\****Ctenodon histrix*** (Poir.)D.B.O.S.Cardoso et al. var. ***incana*** (Benth.)D.B.O.S.Cardoso et al.— {AFP}

***Ctenodon viscidulus*** (Michx.)D.B.O.S.Cardoso et al.— {AFP}

## Dalbergia {AFP}

1. Trees; leaflets 3-7 per leaf, the leaflets ovate to rhombic-orbicular with an abruptly acuminate apex; style stout ... *D. sissoo*

1. Spreading, scandent, or trailing shrub; leaflets 1(-3) per leaf, the blade ovate to oblong-ovate, the apex obtuse to acuminate; style slender [2]
2. Petiole slender, 0.6-1.0 mm wide, much longer than the differentiated petiolule; leaf blade or leaflet chartaceous, lustrous above; fruit ovate to oblong, with 1-4 seeds ... *D. brownei*
2. Petiole stout, 1.2-1.6 mm wide, subequal to the differentiated petiolule; leaf blade coriaceous, dull to slightly lustrous above; fruit subrotund, with 1 seed ... *D. ecastaphyllum*

***Dalbergia brownei*** (Jacq.)Schinz— {AFP} State Endangered.

***Dalbergia ecastaphyllum*** (L.)Taub.— {AFP}

\****Dalbergia sissoo*** Roxb. ex DC.— {AFP}

### **Dalea** {AFP}

1. Shrubs; leaflets 15-25 (as few as 5-13 next to inflorescence); stamens 10 ... *D. floridana*
1. Herbs; leaflets 3-13; stamens 5 [2]
2. Inflorescence spike involucrate, subtended by a pseudowhorl of bracts; calyx lobes filiform-plumose [3]
2. Inflorescence spike compact, but not involucrate, not subtended by bracts; calyx lobes deltoid to lanceolate [5]
3. Stem tuberculate, especially towards the apex; leaflets elliptical ... *D. adenopoda*
3. Stem not or only slightly tuberculate; leaflets linear to filiform [4]
4. Leaflets mostly 5-9(-15) on the upper portion of the stem ... *D. pinnata* var. *pinnata*
4. Leaflets mostly 3 on the upper portion of the stem ... *D. pinnata* var. *trifoliata*
5. Inflorescence spike globose; bracts shorter than the calyx tube; anthers exerted beyond the petal ... *D. feayi*
5. Inflorescence spike cylindrical to occasionally globose; bracts subequal to longer than the calyx tube; anthers subequal to petals [6]
6. Stems spreading to decumbent, usually less than 1.1 mm thick at the base; rachis between the last pair of leaflets and the terminal leaflet >0.8 mm; flower buds with bract tips recurved; peduncles short, often <5 cm long with bracts <2 mm long ... *D. carnea* var. *gracilis*
6. Stems erect or ascending, usually greater than 1.1 mm thick at the base; rachis between the last pair of leaflets and the terminal leaflet <0.8 mm long; flower bud bracts straight to upcurved or occasionally some recurved; peduncles usually >5 cm long with bracts usually >2 mm long [7]
7. Leaflets 3-7, often 5; corolla white ... *D. carnea* var. *albida*
7. Leaflets 5-11, often more than 5; corolla pink ... *D. carnea* var. *carnea*

***Dalea adenopoda*** (Rydb.)Isely— {AFP} Endemic.

***Dalea carnea*** (Michx.)Poir. var. ***albida*** (Torr. & A.Gray)Barneby— {AFP} Treated as a species by Ward (2004).

***Dalea carnea*** (Michx.)Poir. var. ***carnea***— {AFP}

***Dalea carnea*** (Michx.)Poir. var. ***gracilis*** (Nutt.)Barneby— {AFP} Treated as a species by Ward (2004).

***Dalea feayi*** (Chapm.)Barneby— {AFP}

***Dalea floridana*** (Rydb.)J.Diggs & Weakley— {AFP} Endemic. The Florida taxon has more numerous leaflets than the related *D. carthagenensis* (Barneby 1977). State Endangered.

***Dalea pinnata*** (J.F.Gmel.)Barneby var. ***pinnata***— {AFP}

***Dalea pinnata*** (J.F.Gmel.)Barneby var. ***trifoliata*** (Chapm.)Barneby— {AFP}

## Delonix {AFP}

^ *Delonix regia* (Bojer ex Hook.) Raf.— {AFP}

## Denisophytum {AFP}

*Denisophytum pauciflorum* (Griseb.) Gagnon & G.P. Lewis— {AFP} State Endangered.

## Derris {AFP}

\* *Derris dilliptica* (Roxb.) Benth.— {AFP}

## Desmanthus {AFP}

1. Pairs of pinnae 5-18 per leaf; stamens 5 per flower; fruit 1.5-2.5 cm long, falcate ... D.

*illinoensis*

1. Pairs of pinnae 2-8 per leaf; stamens 5 or 10 per flower; fruit 4-8 cm long, straight to falcate

2. Erect herb or shrub; petiole (3-)5-16 mm long; pairs of pinnae 4-8 per leaf; leaflets yellow-green when fresh; nyctinastic movement of pinnae downward; hypocotyl >10 mm long on average, cotyledons aerial ... D. *leptophyllus*

2. Prostrate, decumbent, or erect herb; petiole 1-5(-6) mm long; pairs of pinnae 2-4(-5) per leaf; leaflets blue-green and glaucous when fresh; nyctinastic movement of pinnae upward; hypocotyl <10 mm long on average, cotyledons close to the ground ... D. *virgatus*

*Desmanthus illinoensis* (Michx.) MacMill. ex B.L. Rob. & Fernald— {AFP}

\* *Desmanthus leptophyllus* Kunth— {AFP}

\* *Desmanthus virgatus* (L.) Willd.— {AFP}

## Desmodium {AFP}

1. Plant mostly <40 cm tall; stems viny, prostrate, stoloniferous, decumbent, to ascending, rarely self-supporting >40 cm tall ... Key A

1. Plant usually 50-200 cm tall; stems erect to ascending ... Key B

### Key A

1. Leaflets 0.5-1 cm long; flowers 1-4 in an axillary fascicle ... *Grona triflora*

1. Terminal leaflets mostly >1 cm long; flowers numerous in an axillary or terminal raceme or panicle [2]

2. Larger terminal leaflets >2 cm wide, not variegated; fruit undulate or incised on top and bottom margin; associated with woodlands [3]

2. Terminal leaflets <2.1 cm wide, sometimes variegated; fruit straight on the top margin or 1-2 mm wide and undulate on both margins; often of weedy habits, or rocklands [5]

3. Stipules not clasping the stem, 2-8 mm long, sometimes quickly deciduous ... D. *lineatum*

3. Stipules slightly to strongly clasping the stem, larger ones 6-12 mm long, persistent [4]

4. Leaflets mostly ovate, 1.2-1.9 times longer than wide; corolla white, pinkish, to yellowish; fruit uncinately mostly only on the margin ... D. *ochroleucum*

4. Leaflets generally suborbicular, 0.8-1.1 times longer than wide; corolla pale pink to violet; fruit uncinately over the entire surface ... D. *rotundifolium*

5. Stipules 2-4 mm long; fruit 1-2 mm wide, the top and bottom margins similar and shallowly undulate ... D. *scorpiurus*

5. Stipules 3-8 mm long; fruit 2-4 mm wide, the top margin straight and the bottom margin undulate-incised [6]



6. Leaflet often emarginate at the apex, the terminal leaf obovate, the lateral veins mostly flat with the surface; primary bracts dense and entirely covering flower buds; fruit incised less than ½ the fruit width, the distal beak usually offset from the top margin ... *Grona heterocarpa*

6. Leaflet obtuse at the apex, the terminal leaf elliptic, ovate, or elliptic-obovate, the lateral veins often impressed on the upper surface and prominulous on the lower surface; primary bracts not dense, not covering the flower buds; fruit incised ca. ½ or more the fruit width, the distal beak nearly continuous with the top margin [7]

7. Stem, petiole, leaf rachis, petiolules, leaflet midrib of upper surface, and/or inflorescence rachis often strongly crimson-reddish, or olive to greenish; stipules to 10 mm long; terminal leaflet of distal leaves rhombic-ovate, ovate-deltate, to oblong-lanceolate (infrequently obovate or elliptic), generally deltate-acute at the apex, uniformly green and lustrous and without pale variegation on the upper surface, reticulate venation conspicuous on the upper surface or conspicuous and prominent on the lower surface, to 9 cm long and 4.5 cm wide, the stipels to 5 mm long; corolla light pink, violet, to pale blue, the upper petal subreniform and faded whitish towards the middle, the base pale greenish white with a slightly dark pink border without a strongly contrasting midrib; of pyrogenic, calcareous pinelands and prairies ... *D. incanum*

7. Stem, petiole, rachis, petiolules, and leaflet midrib of upper surface often greenish, brownish, to brown-red, rarely reddish (not crimson-reddish); stipules to 7 mm long; terminal leaflet of distal leaves elliptic, elliptic-lanceolate, elliptic-ovate, oblong-lanceolate, to obovate, generally rounded to obtuse at the apex, frequently with pale variegation on the upper surface often along the midrib and margins (under magnification a highly lustrous raised cuticle, contrasting with the dull leaf surface lacking the raised cuticle), reticulate venation mostly obscure or lightly apparent on the upper surface and usually not prominent on the lower surface, to 7 cm long and 3.5 cm wide, the stipels to 3 mm long; corolla bright to light pink, the upper petal upside-down U-shaped and uniformly colored except the base with a dark purple border around the midvein strongly contrasting and separating the pale greenish white spots on either side; of disturbed areas ... *D. mauritianum*

#### Key B

1. Leaflet underside sparsely pilose; inflorescence densely sticky-glandular from trichomes especially glandular-swollen at the base; fruit often twisted ... *D. tortuosum*

1. Leaflet underside usually uncinuate, puberulent, to villous only; inflorescence non-glandular; fruit typically not twisted [2]

2. Leaflets linear to linear-lanceolate, the terminal one < 14 mm wide [3]

2. Leaflets ovate, elliptic, to suborbicular, the terminal one > 15 mm wide [6]

3. Leaflet venation scarcely or occasionally pronounced, the lateral veins mostly ascending or arcuate [4]

3. Leaflet venation pronounced, the lateral veins mostly nearly perpendicular to the midrib [5]

4. Stem conspicuously uncinuate-puberulent; petioles 1-4 mm long; fruit segments rounded along the lower margin ... *D. sessilifolium*

4. Stem glabrate; petioles mostly 4-60 mm long; fruit segments roughly triangular on the lower margin ... *D. paniculatum*

5. Fruit nearly straight on the top margin, deeply incised on the bottom margin; of xeric sites ... *D. strictum*

5. Fruit incised on both margins, slightly moreso on the bottom margin; of mesic to hydric sites ... *D. tenuifolium*

6. Stipules persistent, 2-4 mm wide, 4-20 mm long [7]

6. Stipules often deciduous, mm wide, 2-8 mm long [9]

7. Upper stem and inflorescence axis pilose to villous and uncinatae ... *D. canescens*
7. Upper stem and inflorescence axis glabrous to uncinatae only [8]
8. Leaflets lacking conspicuous reticulate venation, acute-acuminate at the apex, basal leaves only 3-foliolate; corolla 8-12 mm long; loment segments 4-6, 9-11 mm long ... *D. cuspidatum*
8. Leaflets with conspicuous reticulate venation that is prominulous on the lower surface, obtuse to subacute at the tip, basal leaves sometimes 1-foliolate; corolla 6-7 mm long; loment segments 2-4, each 5-7 mm long ... *D. floridanum*
9. Loment segments 2-3, rounded on both margins and more strongly so on the bottom margin [10]
9. Loment segments 3-5, shallowly undulate on the top margin and somewhat triangular on the bottom margin [12]
10. Terminal leaflet 3-7 cm long, >1.5 times longer than the lateral leaflets (sometimes more similar in size on basal leaves) ... *D. obtusum*
10. Terminal leaflet 1-3 cm long, <1.5 times longer than the lateral leaflets [18]
11. Petiole 1-3(-5) mm long; stem and petiole usually pilose; pedicel 3-8 mm long ... *D. ciliare*
11. Petiole 2.5-10 mm long; stem and petiole glabrous to sparsely uncinatae; pedicel 8-15 mm long ... *D. marilandicum*
12. Stem densely pubescent; leaflet underside villous to cinereous [13]
12. Stem glabrate, pilose, to moderately uncinatae-pubescent; leaflet underside glabrous to pubescent [14]
13. Leaflets 1.5-2.2 times longer than wide; fruit often curved, with 2-4 segments ... *D. nuttallii*
13. Leaflets mostly 1-1.5 times longer than wide, the underside; fruit typically straight, with 3-6 segments ... *D. viridiflorum*
14. Stem glabrous; leaflets glabrous ... *D. laevigatum*
14. Stem glabrate to pubescent; leaflets pubescent on the lower surface [15]
15. Leaflets uncinatae-pubescent only on the veins of the underside ... *D. fernaldii*
15. Leaflets strigose, subappressed villous, or uncinatae-pubescent on the lower surface [16]
16. Leaflets 1.5-4 times longer than wide, usually with moderate pubescence, sometimes only on the petioles, the hairs usually >0.5 mm long [17]
16. Leaflets mostly 3-10 times longer than wide, usually with scant or sparse pubescence, the hairs <0.5 mm long or occasionally with longer hairs [18]
17. Stem and petiole pilose ... *D. glabellum*
17. Stem and petiole uncinatae-pubescent ... *D. perplexum*
18. Leaflets strigose to subappressed villous, lower surface sometimes uncinatae-pubescent ... *D. paniculatum* var. *fernaldii*
18. Leaflets uncinatae-puberulent on veins, lower surface sparsely strigose ... *D. paniculatum* var. *paniculatum*

***Desmodium canescens*** (L.)DC.— {AFP}

***Desmodium ciliare*** (Muhl. ex Willd.)DC.— {AFP}

***Desmodium cuspidatum*** (Muhl. ex Willd.)DC. ex Loudon— {AFP}

***Desmodium fernaldii*** B.G.Schub.— {AFP}

***Desmodium floridanum*** Chapm.— {AFP}

***Desmodium glabellum*** (Michx.)DC.— {AFP}

***Desmodium incanum*** (Sw.)DC.— {AFP} Miami-Dade Co. Rare in prairies and pine rocklands.

The weedy form is here known as *D. mauritianum*.

***Desmodium laevigatum*** (Nutt.)DC.— {AFP}

***Desmodium lineatum*** DC.— {AFP}

***Desmodium marilandicum*** (L.)DC.— {AFP}

\**Desmodium mauritanium* (Willd.)DC.— Common weed of disturbed areas; often known as the misapplied *D. incanum*.

*Desmodium nuttallii* (Schindl.)B.G.Schub.— {AFP}

*Desmodium obtusum* (Muhl. ex Willd.)DC.— {AFP}

*Desmodium ochroleucum* M.A.Curtis ex Canby— {AFP} State Endangered.

*Desmodium paniculatum* (L.)DC. var. *fernaldii* (B.G.Schub.)H.Obashi—

*Desmodium paniculatum* (L.)DC. var. *paniculatum*— {AFP}

*Desmodium perplexum* B.G.Schub.— {AFP}

*Desmodium rotundifolium* DC.— {AFP}

\**Desmodium scorpiurus* (Sw.)Desv.— {AFP}

*Desmodium sessilifolium* Torr. & A.Gray— {AFP}

*Desmodium strictum* (Pursh)DC.— {AFP}

*Desmodium tenuifolium* Torr. & A.Gray— {AFP}

\*\**Desmodium tortuosum* (Sw.)DC.— {AFP}

*Desmodium viridiflorum* (L.)DC.— {AFP}

### Dichrostachys {AFP}

\**Dichrostachys cinerea* (L.)Wight & Arn. subsp. *africana* Brenan & Brummitt— {AFP}

### Enterolobium {AFP}

^ *Enterolobium contortisiliquum* (Vell.)Morong— {AFP}

### Erythrina {AFP}

*Erythrina herbacea* L.— {AFP}

### Galactia {AFP}

1. Leaves 5-9 foliolate; corolla white ... *G. elliotii*

1. Leaves 3-foliolate; corolla white to pink to purple when fresh, sometimes drying reddish [2]

2. Plant erect, if twining, only at the distal tip of the stem; inflorescence sessile, subsessile, or pedunculate; petioles usually subequal to longer than the terminal leaflet at some or most mature nodes; corolla white to light pink, drying reddish [3]

2. Plant prostrate, decumbent, clambering, or twining; inflorescence pedunculate, or if sessile then plant not erect; petioles usually subequal to shorter than the terminal leaflet, if petioles longer than terminal leaflet then plant not erect; corolla pink to purple (drying reddish in *G. mollis*) [4]

3. Plant erect, sometimes twining distally, >36 cm long; most inflorescences pedunculate, mature peduncles > 6 mm long ... *G. brachypoda*

3. Plant erect, not twining, <37 cm long; most inflorescences sessile, occasionally with mature peduncles < 9 mm long ... *G. erecta*

4. Corolla and stamens reddish when dry or withered; inflorescence shoot-tip and immature fruits densely villous with spreading hairs ... *G. mollis*

4. Corollas and stamens light brown, whitish, to blue, pinkish, or purplish when dry or withered; inflorescence shoot-tip and immature fruits villous, strigose, or glabrate with hairs mostly ascending to appressed or not dense [5]

5. Banner (upper petal) typically with whitish striations, the base yellow to greenish yellow; mature inflorescence often with more than 15 flowers, nodes numerous and congested throughout the upper half of the rachis; fruit 5.5–9 mm wide; leaflets often with prominent pale secondary venation on the lower surface ... *G. striata*

5. Banner usually without white stripes or only the midvein white, the base mostly white to pinkish; mature inflorescence usually with less than 15 (–25) flowers, nodes not congested or only congested in the upper third of the rachis; fruit < 6 mm wide; leaflets with secondary venation not prominent on the lower surface, or if prominent then somewhat reddish with reticulate venation conspicuous on the upper surface [6]
6. Stems villous, canescent, tomentose, or pilose (glabrate on older stems), the hairs mostly spreading to oblique, not appressed; hairs often persistent on calyx and on the upper surface of leaflets [7]
6. Stems strigose, pubescent, or hirsute, the hairs appressed or oblique, not spreading; hairs often deciduous on calyx and the upper surface of leaflets [11]
7. Mature leaflets with abaxial secondary venation usually not prominent, often white to yellow, and usually markedly reduced from midvein and generally discolorous and much paler, strongly glaucescent below, drying light-green to olive adaxially; reticulate venation usually inconspicuous adaxially without magnification, secondary venation usually not prominent adaxially; inflorescence to 15 cm long; fertile stems often less than 1 mm wide and not appearing leafy, i.e. internodes usually longer than the length of the terminal leaflet; plant often strongly twining, with stems sometimes inseparable and strongly intertwined ... *G. regularis*
7. Mature leaflets usually with abaxial secondary venation prominent, often reddish, gradually reduced from midvein and generally concolorous and only slightly paler, only lightly glaucescent below, often drying dark brown-green to light green adaxially; reticulate venation usually conspicuous adaxially without magnification, secondary venation sometimes prominent adaxially; if venation not strongly pronounced then stems appearing leafy with short internodes subequal to the terminal leaflet length; inflorescence to 23 cm long; fertile stems ca. 1 mm wide; plant often not twining, with stems usually easily separable [8]
8. Most mature terminal leaflets usually > 2.5 cm long [9]
8. Most mature terminal leaflets usually < 2.5 (–3.5) cm long [10]
9. Reticulate venation strongly prominent on both surfaces of the leaflets, usually conspicuous on both surfaces without magnification; leaflets with pellucid, whitish microscopic dots abundant on adaxial surface; distal secondary veins mostly at near right angles or descending ... *G. pinetorum*
9. Reticulate venation prominent, but not strongly so, on both surfaces, usually not conspicuous abaxially without magnification and sometimes not conspicuous adaxially; leaflets with or without pellucid, whitish microscopic dots abundant on adaxial surface; distal secondary veins mostly ascending ... *G. floridana*
10. Leaflets with appressed strigose hairs adaxially; inflorescence not exerted beyond the subtending leaf; inflorescence axis 10–20 mm ... *G. microphylla*
10. Leaflets with erect to ascending hairs adaxially; inflorescence usually exerted beyond subtending leaf, inflorescence axis (5)20–60(90) mm ... *G. smallii*
11. Most leaflets < 15 mm wide, < 25 mm long, leaves often overlapping with those of adjacent nodes, terminal leaflet often subequal or longer than stem internodes, leaves densely covered with pellucid, whitish microscopic dots on adaxial surface; stem vestiture antorsely or retrorsely strigose ... *G. minor*
11. Most leaflets > 15 mm wide or > 25 mm long, if smaller, then leaves mostly not overlapping with those of adjacent nodes, and terminal leaflet usually shorter than the stem internodes, or if leaves smaller then pellucid, whitish microscopic dots (< 0.1 mm wide) mostly confined to veins and absent from outer leaf margin on adaxial surface; stem vestiture retrorsely hirsute or antorsely or retrorsely strigose [12]
12. Mature leaflets with abaxial secondary venation usually not prominent, often white to yellow, and usually markedly reduced from midvein and generally discolorous and much paler,

strongly glaucescent below, drying light-green to olive adaxially; reticulate venation usually inconspicuous adaxially without magnification, secondary venation usually not prominent adaxially; inflorescence to 55 cm long; fertile stems often less than 1 mm wide; plant often strongly twining, with stems sometimes inseparable and strongly intertwined [13]

12. Mature leaflets usually with abaxial secondary venation prominent, often reddish, gradually reduced from midvein and generally concolorous and only slightly paler, only lightly glaucescent below, often drying dark brown-green to light green adaxially; reticulate venation usually conspicuous adaxially without magnification, secondary venation sometimes prominent adaxially; inflorescence to 23 cm long; fertile stems ca. 1 mm wide; plant often not twining, with stems usually easily separable [14]

13. Leaflets consistently linear-oblong, > 4 times as long as wide (rarely with broadly elliptic leaflets), less than 7 mm wide ... *G. austrofloridensis*

13. Leaflets elliptic to ovate to narrowly ovate, some or most or all < 4 times as long as wide or more than 7 mm wide, occasionally with some leaflets > 4 times as long as wide and narrowly ovate ... *G. volubilis*

14. Reticulate venation strongly prominent on both surfaces, usually conspicuous on both surfaces without magnification; leaflets with pellucid, whitish microscopic dots abundant on adaxial surface; distal secondary veins often perpendicular, nearly so, or descending ... *G. pinetorum*

14. Reticulate venation prominent, but not strongly so, on both surfaces, usually not conspicuous abaxially without magnification and sometimes not conspicuous adaxially; leaflets with or without pellucid, whitish microscopic dots abundant on adaxial surface; distal secondary veins usually ascending ... *G. purshii*

***Galactia austrofloridensis*** A.R.Franck— {AFP} Endemic. Perhaps just a subspecies of *G. volubilis*.

***Galactia brachypoda*** Torr. & A. Gray— {AFP} Rare putative hybrid of *G. erecta* and *G. mollis*.

***Galactia elliotii*** Nutt.— {AFP}

***Galactia erecta*** (Walter)Vail— {AFP}

***Galactia floridana*** Torr. & A. Gray— {AFP}

***Galactia microphylla*** (Chapm.) H.J.Rogers ex D.W.Hall & D.B.Ward— {AFP}

***Galactia minor*** W.H. Duncan— {AFP}

***Galactia mollis*** Michx.— {AFP}

***Galactia pinetorum*** Small— {AFP} Endemic.

***Galactia purshii*** Desv.— {AFP}

***Galactia regularis*** (L.)Britton et al.— {AFP} Perhaps not actually found in Florida.

***Galactia smallii*** H.J.Rogers ex Herndon— {AFP} Endemic. Federally Endangered. State Endangered.

***Galactia striata*** (Jacq.)Urb.— {AFP}

***Galactia volubilis*** (L.)Britton— {AFP}

## **Gleditsia** {AFP}

1. Leaflets mostly glabrate, acute at the base, the lateral venation unapparent; fruits ovate or ellipsoid, 3-5(-8) cm long, without pulp, with 1(-3) seeds ... *G. aquatica*

1. Leaflets usually pubescent on the lower surface, mostly rounded at the base, the lateral venation apparent or obscure; fruit oblong, 20-40 cm long, pulpy, with numerous seeds ... *G. triacanthos*

***Gleditsia aquatica*** Marshall— {AFP}

***Gleditsia ×texana*** Sarg.— {AFP}

***Gleditsia triacanthos*** L.— {AFP}

### **Gliricidia** {AFP}

^ *Gliricidia sepium* (Jacq.)Kunth ex Walp.— {AFP}

### **Grona** {AFP}

1. ... *G. heterocarpos*

1. ... *G. triflora*

\****Grona heterocarpos*** (L.)K.Ohashi & H.Ohashi— {AFP}

\****Grona triflora*** (L.)H.Ohashi & K .Ohashi— {AFP}

### **Guilandina** {AFP}

1. Stipules foliaceous with 1-4 leaflets, sometimes absent on immature stems or sometimes shed before leaf has dropped; floral bract narrowly ovate-lanceolate to deltate and generally gradually narrowed toward the apex, (5)6-12 mm long, descending to strongly recurved, subequal to exceeding pedicels of larger flower buds, mostly persistent with the mature flower; seeds gray ... *G. bonduc*

1. Stipules absent or scale-like, to 3 mm long; floral bract ovate at the base, abruptly contracted near mid-length and subulate toward the apex, 3-10 mm long, erect to spreading; seeds yellow, brown, to blackish [2]

2. Leaflets broadly elliptic, suborbicular, to subrhombic, the apex and base both rounded, larger leaflets 1.7–3.5(4) cm long, 1.4–2.8 cm wide ... *G. ciliata*

2. Leaflets broadly to narrowly ovate (rarely elliptic), acute towards the apex and broadly acute to truncate at the base, the larger leaflets (3.5)4–8 cm long, (2.2)2.8–4 cm wide ... *G. major*

***Guilandina bonduc*** L.— {AFP} Peninsula, rare in panhandle. Coastal areas.

***Guilandina ciliata*** Bergius ex Wikstr — Known only from a Chapman collection; presumed extirpated.

***Guilandina major*** (Medik.)Small— {AFP} State Endangered. Miami-Dade & Monroe Keys.

Rockland hammocks. Possibly, the name *G. intermedia* may be more applicable and *G. major* might only apply to populations outside of the Neotropics.

### **Hylodesmum** {AFP}

1. Leaves alternate with well-spaced internodes 1.5-5 cm long; inflorescence often axillary and terminal; corolla white ... *H. pauciflorum*

1. Leaves subverticillate, tightly clustered in a 1-2 cm region; inflorescence appearing only terminal; corolla pink to purple, rarely white [2]

2. Leaflets long-acuminate at the tip; inflorescence terminal from the leafy stem ... *H. glutinosum*

2. Leaflets obtuse to shortly acuminate at the tip; inflorescence on a separate, usually leafless stem borne from the base of the leafy stem ... *H. nudiflorum*

***Hylodesmum glutinosum*** (Muhl. ex Willd.)H.Ohashi & R.R.Mill— {AFP}

***Hylodesmum nudiflorum*** (L.)H.Ohashi & R.R.Mill— {AFP}

***Hylodesmum pauciflorum*** (Nutt.)H.Ohashi & R.R.Mill— {AFP}

**Indigofera** {AFP} Indigo was briefly cultivated as a dye crop in Florida and nearby, primarily in the 1700s, utilizing the species *I. suffruticosa* and *I. tinctoria* (Holmes 1967; Rembert, Jr. 1979).

1. Leaves 3-foliolate ... *I. pilosa*
1. Leaves mostly 5- or more foliolate [2]
2. Leaflets mostly alternate on the rachis [3]
2. Leaflets mostly opposite on the rachis [4]
3. Stipules subulate; leaflets mostly <4 mm wide; inflorescence of 3-10 flowers, at least the lower internodes easily visible ... *I. miniata*
3. Stipules deltoid to lanceolate; larger leaflets >4 mm wide; inflorescence of 5-40 flowers, the internodes nearly concealed ... *I. spicata*
4. Plant with glandular trichomes; leaflets <4 mm wide, <7 mm long ... *I. colutea*
4. Plant lacking glandular trichomes; larger leaflets >5 mm wide or >8 mm long [5]
5. Plant hirsute to pilose ... *I. hirsuta*
5. Plant mostly strigose to glabrate [6]
6. Stems decumbent to prostrate; leaves mostly 5-foliolate ... *I. trita* subsp. *scabra*
6. Stems erect to spreading; at least some leaves more than 5-foliolate [7]
7. Inflorescence pedunculate, the peduncle (distance to first flower) 2.5-15 cm long; fruit indehiscent, <12 mm long, seeds 1-3 ... *I. caroliniana*
7. Inflorescence sessile or with a peduncle to 1 cm long; fruit dehiscent, >13 mm long, seeds >3 [8]
8. Shrubs 1-2.5 m tall, with ascending to erect stems; leaflets elliptic, broadly elliptic, to broadly obovate along fertile portions of the stem; upper petal rounded-mucronate at the tip; fruit <1.8 cm long, strongly curved ... *I. suffruticosa*
8. Shrubs to 1 m tall, with spreading to ascending stems; leaflets narrowly elliptic along fertile portions of the stem; upper petal acute at the tip; fruit >2 cm long, straight to curved ... *I. tinctoria*

***Indigofera caroliniana*** Mill.— {AFP}

\****Indigofera colutea*** (Burm.f.)Merr.— {AFP}

\****Indigofera hirsuta*** L.— {AFP}

***Indigofera miniata*** Ortega— {AFP}

***Indigofera oxycarpa*** Desv.— {AFP} State Endangered. Leivens (1992) used the name *I. oxycarpa* but also stated "I am, though, prepared to eventually accept Meikle's (1951) conclusions" to apply *I. subulata* var. *scabra*.

\****Indigofera pilosa*** Poir.— {AFP}

\****Indigofera spicata*** Forssk.— {AFP}

\****Indigofera suffruticosa*** Mill.— {AFP}

\****Indigofera tinctoria*** L.— {AFP}

**Kummerowia** {AFP}

\****Kummerowia striata*** (Thunb.)Schindl.— {AFP}

**Lablab** {AFP}

\****Lablab purpureus*** (L.)Sweet— {AFP}

## Lathyrus {AFP}

1. Stipules of upper nodes 1-2 mm wide; ovary and fruit pustulate-hirsute; corolla 10-14 mm long ... L. hirsutus

1. Stipules of upper nodes 2-5 mm wide; ovary and fruit glabrous; corolla 6-9 mm long ... L. pusillus

\**Lathyrus hirsutus* L.— {AFP}

*Lathyrus pusillus* Elliott— {AFP}

## Leptospron {AFP}

\**Leptospron adenanthum* (G.Mey.)A.Delgado— {AFP}

## Lespedeza {AFP}

1. Leaflets widest at or near the apex, cuneate from the tip to the base; axillary inflorescence of 1-3 flowers ... L. cuneata

1. Leaflets widest at or near the middle, generally elliptic to linear-elliptic; axillary inflorescence of 3-many flowers [2]

2. Stems prostrate, procumbent, decumbent, to spreading-ascending [3]

2. Stems erect [5]

3. Plant with spreading, curved trichomes ... L. procumbens

3. Plant with appressed hairs or glabrescent [4]

4. Stems sprawling to ascending; leaflets apiculate; keel petal usually longer than the lateral petals ... L. frutescens

4. Stems trailing or procumbent; leaflets scarcely to minutely apiculate; keel petal subequal to lateral petals ... L. repens

5. Leaflets linear to oblong-elliptic, 2-8(-10) mm wide, mostly 2.3-8 times longer than wide [5]

5. Leaflets elliptic-oblong, ovate, to obovate, larger ones 8-25 mm wide, mostly 1.6-2.6 times longer than wide [6]

6. Petioles  $> \frac{1}{2}$  as long as the lateral leaflets, to 28 mm long; calyx to  $\frac{1}{2}$  as long as the mature fruit; corolla pink to purple, rarely white ... L. virginica

6. Petioles  $< \frac{1}{4}(\frac{1}{2})$  as long as the lateral leaflets, to 3(10) mm long; calyx subequal to longer than the mature fruit; corolla white to cream with a purple throat [7]

7. Leaflets mostly 4-8(-10) times longer than wide; calyx 5-8 mm long; corolla 5-7 mm long; fruit 3-5 mm long ... L. angustifolia

7. Leaflets mostly 2.3-3.5 times longer than wide; calyx 8-12 mm long; corolla 7-10 mm long; fruit 4-7 mm long ... L. capitata

7. Plant 1-3 m tall, woody or suffrutescent; petioles to 4 cm long; corolla 8-15 mm long [8]

7. Plant to 1.5(-2) m tall, herbaceous; petioles to 2.5 cm long; corolla 5-10 mm long [9]

8. Racemes stiffly erect to erect-ascending; corolla 8-11 mm long; seeds purple and green mottled ... L. bicolor

8. Racemes laxly spreading to drooping; corolla 10-15 mm long; seeds purplish black ... L. thunbergii

9. Leaflets elliptic-oblong; racemes to 2 cm long, included or scarcely exerted beyond the leaves; calyx to  $\frac{1}{2}$  as long as the fruit ... L. stuevei

9. Leaflets ovate to obovate; racemes to 8 cm long, exerted beyond the leaves; calyx subequal to longer than the fruit [10]

10. Stems subappressed-puberulent to densely villosulous, hairs  $< 1$  mm long; petiole of medial leaves commonly  $< 1$  cm in length and subequal to rachis; leaflets 1-2 cm long, silvery, closely



strigose on both surfaces with hairs 0.2-0.5 mm long (the longer ones primarily along midrib of lower surface) ... *L. hirta* subsp. *curtissii*

10. Stems villous, some hairs >1 mm long; petiole of medial leaves 1-1.5(2) cm long, much exceeding the rachis; leaflets 1.5-4(5) cm long, green-cinereous or less commonly silvery, not closely strigose on both surfaces, upper surface glabrate or strigose, lower surface usually loosely strigose below (not closely appressed), and commonly with some hairs along veins >0.5 mm long ... *L. hirta* subsp. *hirta*

***Lespedeza angustifolia*** (Pursh)Elliott— {AFP}

\****Lespedeza bicolor*** Turcz.— {AFP}

***Lespedeza capitata*** Michx.— {AFP}

\****Lespedeza cuneata*** (Dum.Cours.)G.Don— {AFP}

***Lespedeza hirta*** (L.)Hornem. subsp. ***curtissii*** Clewell— Treated as a subspecies by [Clewel \(1964\)](#) and reassessed by [Isely \(1986\)](#).

***Lespedeza hirta*** (L.)Hornem. subsp. ***hirta***— {AFP}

***Lespedeza procumbens*** Michx.— {AFP}

***Lespedeza repens*** (L.)W.P.C.Barton— {AFP}

***Lespedeza stuevei*** Nutt.— {AFP}

\****Lespedeza thunbergii*** (DC.)Nakai— {AFP}

***Lespedeza frutescens*** (L.)Pers.— {AFP} Previously as the misapplied *L. violacea*.

***Lespedeza virginica*** (L.)Britton— {AFP}

***Lespedeza* × *oblongifolia*** (Britton)W.Stone— {AFP}

**Leucaena** {AFP}

\****Leucaena leucocephala*** (Lam.)de Wit— {AFP}

**Lonchocarpus** {AFP}

^ ***Lonchocarpus punctatus*** Kunth— {AFP}

**Lotononis** {AFP}

\****Lotononis bainesii*** Baker— {AFP}

**Lotus** {AFP}

\****Lotus pedunculatus*** Cav.— {AFP}

**Lupinus** {AFP}: Three species were recently described by [Bridges & Orzell \(2024\)](#) writing that “Even though their support may be weak, we feel that the four peninsular Florida entities within the *Lupinus cumulicola* subclade represent at least incipient speciation strongly correlated with the relatively recent geographic isolation of most populations. Alternatively, these could be considered as four varieties of *L. cumulicola*”. [Nevado et al. \(2024\)](#) wrote “evidence of inter-variant hybrids, limited phylogenetic support for some of these subclades and evidence of significant gene flow indicative of incomplete reproductive isolation argue for recognition of these entities at intra-specific rather than species rank”; however, no infraspecific combinations were made. Of 72 samples analyzed, 13 showed morphological intermediacy or genetic admixture ([Nevado et al. 2024](#)).

1. Leaves 5- to 11-foliolate [2]

1. Leaves 1-foliolate [5]

2. Corolla yellow ... *L. luteus*
2. Corolla lavender to blue-purple [3]
3. Leaflets mostly linear to oblong, 5-10 times long as wide ... *L. angustifolius*
3. Leaflets mostly elliptic to obovate, 3-5 times long as wide [4]
4. Rhizomatous perennial; leaves mostly 7- to 11-foliolate; corolla blue-violet to white or pink ... *L. perennis*
4. Taprooted annual; leaves mostly 5- to 7-foliolate; corolla dark blue ... *L. texensis*
5. Stipules 0-5 mm long [6]
5. Stipules mostly 5-35 mm long [7]
6. Robust plants averaging 45-60 cm tall; leaf blades mostly 5.0-6.5 cm long, 2.5-3.0 cm wide; corolla white to pink, the upper petal with a blackish maroon spot ... *L. aridorum*
6. robust plants averaging 60-85 cm tall; leaf blades mostly 7.5-9.0 cm long, 3.5-4.5 cm wide; corolla pale lavender to blue, the upper petal with a maroon to dark purplish blue spot ... *L. westianus*
7. Corolla primarily of white, pink, and light blue colors, the upper petal with dark spots along the middle; fruit with hairs to 5 mm long ... *L. villosus*
7. Corolla primarily of white and blue colors, the upper petal with light or white spots along the middle; fruit with hairs to 3 mm long [8]
8. Plant mat-forming, of small clumps, mostly 25-80 cm wide; petioles 6-8 cm long; leaf blades mostly 3-4(5) times longer than wide (*L. diffusus* s.str.) ... *L. diffusus*
8. Plant erect and branched above ground or mat-forming of large clumps, typically 90-130 cm wide; petioles mostly 3-6 cm long (rarely to 10 cm); leaf blades mostly 1.8-2.9(3.5) times longer than wide (*L. cumulicola* s.lat.) [9]
9. Plants (20)26-45(72) cm tall, 1.9-4.1 mat-forming, the main stems prostrate, branched at or near ground level, first branch 0-8(14) cm aboveground, branches mostly decumbent, ascending only at their leafy tips; free portion of stipules (13)17-25(39) mm long [10]
9. Plants (25)50-90(200) cm tall, erect, the main stem erect, branched above ground level, first branch (0)4-15(34) cm aboveground; free portion of stipules (0)8-14(23) mm long [11]
10. Plants with dense, short, appressed pubescence, the green surface of the leaves evident; petioles (40)50-65(100) mm long; mature fruit (17)20-27(35) mm long, (6)6.7-7.0(8) mm wide; central to north peninsula ... *L. ocalensis*
10. Plants with dense, spreading, whitish-villous pubescence, mostly obscuring the leaf surface; petioles (18)32-45(70) mm long; mature fruit (18)36-44(54) mm long, (8)10-12(17) mm wide; central-west and southwest peninsula ... *L. pilosior*
11. Leaf blades densely silvery-silky appressed pubescent, the hairs totally obscuring the leaf surface, (26)34-44(58) mm wide, mostly 1.8-2.1 times longer than wide; Lake Wales Ridge region ... *L. cumulicola*
11. Leaf blades moderately appressed pubescent, the hairs not obscuring the green leaf surface, (15)25-32(44) mm wide, mostly 2.4-2.9 times longer than wide; central-east and southeast peninsula ... *L. floridanus*

^*Lupinus angustifolius* L.— {AFP}

***Lupinus aridorum*** McFarlin ex Beckner— {AFP} Endemic. Federally Endangered. State Endangered.

***Lupinus cumulicola*** Small—

***Lupinus diffusus*** Nutt.— {AFP}

***Lupinus floridanus*** E.L. Bridges & Orzell— Endemic.

^*Lupinus luteus* L.— {AFP}

***Lupinus ocalensis*** E.L. Bridges & Orzell— Endemic.

***Lupinus perennis*** L.— {AFP}

***Lupinus pilosior*** E.L. Bridges & Orzell— Endemic.

\****Lupinus texensis*** Hook.— {AFP}

***Lupinus villosus*** Willd.— {AFP}

***Lupinus westianus*** Small var. *westianus*— {AFP} Endemic. State Threatened.

### **Lysiloma** {AFP}

1. Bark gray, smooth to platy; the pinnae each with 10-30 pairs of leaflets; leaflets oblong to oblong-lanceolate, 8-15 mm long; mature corolla usually red ... *L. latisiliquum*

1. Bark light brown and brownish gray, somewhat flaky with longitudinal plates; the pinnae each with 3-7 pairs of leaflets; leaflets ovate to obovate, 10-20 mm long; mature corolla green ... *L. sabicu*

***Lysiloma latisiliquum*** (L.)Benth.— {AFP}

^***Lysiloma sabicu*** Benth.— {AFP}

### **Macroptilium** {AFP}

1. Leaflets generally ovate, sometimes lobate, tomentose to sericeous on the lower surface, the secondary (and often tertiary) veins prominent and conspicuous on the lower surface, often impressed on the upper surface; seed ca. 4 mm long ... *M. atropurpureum*

1. Leaflets mostly linear-oblong to obovate, sometimes slightly lobate, glabrate to sparsely strigose on the lower surface, the secondary veins inconspicuous and not prominent or only partly so for the basal veins on the lower surface, obscure on the upper surface; seed ca. 3 mm long ... *M. lathyroides*

\****Macroptilium atropurpureum*** (Moç. & Sessé ex DC.)Urb.— {AFP}

\****Macroptilium lathyroides*** (L.)Urb.— {AFP}

### **Medicago** {AFP}

1. Corolla 2-3 mm long; fruit reniform, black, with 1 seed ... *M. lupulina*

1. Corolla 3-11 mm long; fruit spirally coiled, with multiple seeds [2]

2. Plant perennial with a stout taproot; corolla purplish (rarely yellow, green, or white), 6-11 mm long; fruit without prickles ... *M. sativa*

2. Plant annual with a slender taproot; corolla yellow; fruit with or without prickles [3]

3. Stems and leaves moderately to densely villous or villosulous [4]

3. Stems and leaves glabrous to sparsely pubescent [5]

4. Stipules entire to shallowly denticulate; fruit prickles 50-80, slender and grooved ... *M. minima*

4. Stipules strongly toothed or lobed or lacinate; fruit prickles 20-35, the prickles stout and subterete ... *M. littoralis*

5. Stipules deeply divided to nearly to the base; fruit without prickles, 10-15 mm wide, with papery edges; seed surface roughened or tuberculate ... *M. orbicularis*

5. Stipules strongly toothed or lobed or lacinate; fruit with prickles, the body 5-10 mm wide (excluding prickles), lacking papery edges; seed surface not roughened [5]

6. Leaflets sometimes with a central dark reddish spot; stipules toothed to shallowly lacinate, teeth or lobes triangular-acuminate and shorter than the body; fruit coil edge with central groove flanked by lateral grooves forming a pattern of 3 grooves separating 4 ridges ... *M. arabica*

6. Leaflets without a central spot; stipules deeply lacinate, the lobes filiform-acuminate, mostly subequal to longer than the body; fruit coil edge lacking a pattern of 3 grooves separating 4 ridges ... *M. polymorpha*

\**Medicago arabica* (L.)Huds.— {AFP}

\**Medicago littoralis* Rohde ex Loisel.— {AFP}

\**Medicago lupulina* L.— {AFP}

\**Medicago minima* (L.)Bartal.— {AFP}

\**Medicago orbicularis* (L.)Bartal.— {AFP}

\**Medicago polymorpha* L.— {AFP}

\**Medicago sativa* L.— {AFP}

### Melilotus {AFP}

1. Corolla white; fruit 3-5 mm long, veins tending to form irregular reticulation ... *M. albus*

1. Corolla yellow; fruit 2-5 mm long [2]

2. Corolla 1.5-3 mm long; fruit 2-3 mm long, reticulate-veined ... *M. indicus*

2. Corolla 4-7 mm long; fruit 3-5 mm long, transverse-rugose with elongate areolae ... *M. officinalis*

\**Melilotus albus* Medik.— {AFP}

\**Melilotus indicus* (L.)All.— {AFP}

\**Melilotus officinalis* Lam.— {AFP}

### Millettia {AFP}

\**Millettia pinnata* (L.)Panigrahi— {AFP}

### Mimosa {AFP}

1. Plant without prickles ... *M. strigillosa*

1. Plant with prickles on stems, petioles, or leaf rachis [2]

2. Pinnae (1)2 pairs, clustered at the apex of the rachis ... *M. pudica*

2. Pinnae 3-12 pairs, diffuse along the rachis [3]

3. Pinnae usually 8–12; fruit segmented (each segment containing one seed), hispid, 8-12 mm wide ... *M. pigra*

3. Pinnae usually 3–5; fruit unsegmented, prickly, 2-5 mm wide [4]

4. Secondary venation of the leaflets conspicuous ... *M. floridana*

4. Secondary venation of the leaflets obscure ... *M. microphylla*

*Mimosa floridana* (Chapm.)Weakley & Flores-Cruz— {AFP} Peninsula (SE Georgia). Nearly endemic.

*Mimosa microphylla* Dryand.— {AFP} Throughout (SE USA).

\**Mimosa pigra* L.— {AFP}

\**Mimosa pudica* L.— {AFP}

*Mimosa strigillosa* Torr. & A.Gray— {AFP}

### Mucuna {AFP}

1. Leaflets obtuse to acute at the apex, sometimes mucronate to cuspidate; inflorescence racemose; corolla purple (rarely white); fruit without transverse ridges, 5-9 cm long, 1-1.5 cm

wide; seed hilum protruding from the surface, much shorter than the length and width of the seed ... *M. pruriens*

1. Leaflets acuminate at the apex; inflorescence umbellate; corolla yellow; fruit with transverse ridges, 9-16 cm long, 4-6 cm wide; seed hilum nearly continuous and smooth with the surface, longer than the length and width of the seed ... *M. sloanei*

\**Mucuna pruriens* (L.)DC.— {AFP}

\*\**Mucuna sloanei* Fawc. & Rendle— {AFP} Seeds frequently washed ashore on beaches. Earliest alleged native record probably *Small & Mosier 5913* from "Goodburn Hammock" (unknown locality in Miami-Dade Co.), 17 March 1915. Otherwise known only from more recent collections in Broward (2001) and Miami-Dade (1997). Native status questionable.

**Neptunia** {AFP}

*Neptunia pubescens* Benth.— {AFP}

**Orbexilum** {AFP}

1. Leaves 1-foliolate ... *O. virgatum*

1. Leaves with 3-7 leaflets [2]

2. Leaves with (3-)5-7 leaflets; leaflets linear-filiform to linear-oblongate, to 2(4) mm wide ... *O. lupinellus*

2. Leaves 3-foliolate; leaflets elliptic to elliptic-lanceolate, 4-10 mm wide [3]

3. Bracts, calyces and fruits eglandular, or nearly so; bracts narrowly ovate, 5- 8 mm long, 1.0-2.5 mm wide ... *O. psoralioides*

3. Bracts, calyces and fruits markedly glandular; bracts broadly ovate, 6-10 mm long, 2-5 mm wide ... *O. pedunculatum*

*Orbexilum lupinellus* (Michx.)Isely— {AFP}

*Orbexilum pedunculatum* (Mill.)Rydb.— {AFP}

*Orbexilum virgatum* (Nutt.)Rydb.— {AFP} State Endangered.

**Pachyrhizus** {AFP}

^ *Pachyrhizus erosus* (L.)Urb.— {AFP}

**Parkinsonia** {AFP}

\**Parkinsonia aculeata* L.— {AFP}

**Pediomelum** {AFP}

*Pediomelum canescens* (Michx.)Rydb.— {AFP}

**Peltophorum** {AFP}

1. Leaflets 0.5-1 cm long, usually acute-mucronate at the tip; corolla 2-3.5 cm wide; style 1.5-4 mm long; fruit 1-2 cm wide ... *P. dubium*

1. Leaflets 1-2 cm long, usually obtuse to emarginate at the tip; corolla 3-4 cm wide; style 2.5-9.5 mm long; fruit 1.7-3.4 cm wide ... *P. pterocarpum*

\**Peltophorum dubium* (Spreng.)Taub.— {AFP}

\**Peltophorum pterocarpum* (DC.)Backer ex K.Heyne— {AFP}

## Phanera {AFP}

^ *Phanera yunnanensis* (Franch.) Wunderlin— {AFP}

## Phaseolus {AFP}

1. Leaflets to 12 cm long and 8 cm wide; raceme with a somewhat stiff, stout axis [2]

1. Leaflets to 10 cm long and 9 cm wide; raceme with a lax, slender axis [3]

2. Corolla usually white; fruit flattened ... *P. lunatus*

2. Corolla usually white to purple; fruit subterete ... *P. vulgaris*

3. Leaflets unlobed ... *P. polystachios*

3. Leaflets 2- or 3-lobed, sometimes shallowly so [4]

4. Leaflets to 4 cm long, 3.5 cm wide ... *P. sinuatus*

4. Leaflets to 9 cm long, 8 cm wide ... *P. smilacifolius*

\**Phaseolus lunatus* L.— {AFP}

*Phaseolus polystachios*— {AFP}

*Phaseolus sinuatus* Nutt. ex Torr. & A.Gray— {AFP}

*Phaseolus smilacifolius* Pollard— {AFP}

^ *Phaseolus vulgaris* L.— {AFP} Presumably cultivated in north Florida by indigenous peoples (Scarry & Scarry 2005; Moreno Palacios 2022; Park 2022).

## Piscidia {AFP}

*Piscidia piscipula* (L.) Sarg.— {AFP}

## Pisum {AFP}

^ *Pisum sativum* L.— {AFP}

## Pithecellobium {AFP}

1. Petiole (from the base to the first split) usually shorter than the rachis (from the split to the leaflet pair) [2]

1. Petiole usually longer than the rachis [3]

2. Stems with stipular spines; leaflet tip usually with a mucro ... *P. bahamense*

2. Stems without stipular spines; leaflet tip usually without a mucro ... *P. keyense*

3. Leaflets mostly 1.7-2.4 times as long as wide; inflorescence of axillary heads along a stem >10 cm long, the heads often fasciculate with 2 or more fertile heads, the peduncles villosulus and <1.3 cm long; perianth pubescent ... *P. dulce*

3. Leaflets mostly 1.2-1.6 times as long as wide; inflorescence of axillary heads along a stem usually <9 cm long, fertile heads usually solitary, the peduncles glabrous and the longer ones 1.5-7 cm long; perianth glabrous ... *P. unguiscati*

*Pithecellobium bahamense* Northrop— {AFP} State Endangered.

^ *Pithecellobium dulce* (Roxb.) Benth.— {AFP}

*Pithecellobium keyense* Britton ex Britton & Rose— {AFP} State Threatened.

*Pithecellobium unguis-cati* (L.) Benth.— {AFP}

## Psophocarpus {AFP}

^ *Psophocarpus tetragonolobus* (L.) DC.— {AFP}

## Pueraria {AFP}

\**Pueraria montana* (Lour.) Merr. var. ***lobata*** (Willd.) Maesen & S.M. Almeida ex Sanjappa & Predeep— {AFP}

### Rhynchosia {AFP}

1. Leaves with 1(3) leaflets [2]
1. Leaves 3-foliolate [3]
2. Plant prostrate or trailing, the leaves generally well-spaced and usually not overlapping; calyx 9-15 mm long; fruit scarcely exerted from the calyx ... *R. michauxii*
2. Plant erect to 40 cm tall, the leaves generally clustered together and overlapping; calyx 7-10 mm long; fruit much exerted from the calyx ... *R. reniformis*
3. Leaflets acuminate at the tip, sometimes only slightly; seeds black or red and black [4]
3. Leaflets acute to broadly rounded at the tip (very rarely slightly acuminate); seeds brown [5]
4. Stipules absent; leaflet stipels absent; seeds bicolored red and black ... *R. precatorea*
4. Stipules persistent; leaflet stipels persistent; seeds red ... *R. swartzii*
5. Terminal leaflets 0.8-1.3 times longer than wide [6]
5. Terminal leaflets 1.5-2.5 times longer than wide [8]
6. Most racemes exceeding the leaves, (1-)4-12 cm long; calyx 2.5-4 mm long ... *R. minima*
6. Racemes usually shorter than the leaves, 1-4(-8) cm long; calyx 8-14 mm long [8]
7. Plant hairs generally <0.4 mm long; petiole pubescent; fruit puberulent ... *R. cinerea*
7. Plant hairs commonly >0.7 mm long; petiole hirsute; fruit hirsute and puberulent ... *R. difformis*
8. Plant trailing, prostrate, or vine-like [9]
8. Plant erect [10]
9. Fresh leaflets bluish or grayish green; leaflets elliptic to elliptic-obovate ... *R. parvifolia*
9. Fresh leaflets green to olive-green; leaflets generally ovate ... *R. reticulata*
10. Leaflets to 2 cm long, 1 cm wide; flowers 1(-3) in the leaf axils; corolla clearly exceeding the calyx ... *R. cytisoides*
10. Leaflets 2-5(-7) cm long, 1-4 cm wide; flowers numerous in a raceme; corolla subequal to slightly exceeding the calyx [11]
11. Stipules caducous; inflorescence a solitary raceme 5-20 cm long ... *R. tomentosa* var. *mollissima*
11. Stipules persistent; inflorescence of several racemes 1-3 cm long ... *R. tomentosa* var. *tomentosa*

***Rhynchosia cinerea*** Nash— {AFP} Endemic.

***Rhynchosia cytisoides*** (Bertol.) Wilbur— {AFP}

***Rhynchosia difformis*** (Elliott) DC.— {AFP}

***Rhynchosia michauxii*** Vail— {AFP}

***Rhynchosia minima*** (L.) DC.— {AFP}

***Rhynchosia parvifolia*** DC.— {AFP} State Threatened.

\****Rhynchosia precatorea*** (Humb. & Bonpl. ex Willd.) DC.— {AFP}

***Rhynchosia reniformis*** DC.— {AFP}

\****Rhynchosia reticulata*** (Sw.) DC.— {AFP}

***Rhynchosia swartzii*** (Vail) Urb.— {AFP} State Endangered.

***Rhynchosia tomentosa*** (L.) Hook. & Arn. var. ***mollissima*** (Elliott) Torr. & A. Gray— {AFP}

***Rhynchosia tomentosa*** (L.) Hook. & Arn. var. ***tomentosa***— {AFP}

### Robinia {AFP}

1. Shrub or small tree to 3(10) m; bark generally smooth (or hispid) and lenticellate; stems, peduncles, pedicels, and calyces stiffly hispid (hairs to 7 mm long) or occasionally glabrate; fruit often hispid; calyx 8-14 mm long, the lobes subequal to longer than the tube; corolla pink to purple, rarely white, 20-25 mm long ... *R. hispida*

1. Trees, to 25 m; bark forming criss-crossed ridges; stems, peduncles, pedicels, and calyces puberulent to glabrate; fruit glabrous; calyx 6-10 mm long, the lobes much shorter than the tube; corolla white, rarely pinkish, 15-20 mm long ... *R. pseudoacacia*

\**Robinia hispida* L.— {AFP}

\**Robinia pseudoacacia* L.— {AFP}

### Senegalia {AFP}

^ *Senegalia pennata* (L.) Maslin subsp. *insuavis* (Lace) Maslin et al.— {AFP}

### Senna {AFP}

1. Leaf petiole and rachis without glands (extra floral nectaries sometimes present on stipules, bracts, or sepals) [2]

1. Leaf petiole or rachis with 1 or more spherical, cylindrical, conic, or stipitate glands [4]

2. Petiole 2-3 mm wide; fruit 4-winged ... *S. alata*

2. Petiole 0.5-1.5 mm wide; fruit flat [3]

3. Leaf with (1)2-6 pairs of leaflets ... *S. atomaria*

3. Leaf with (8)9-16(18) pairs of leaflets ... *S. didymobotrya*

4. Gland at the base of the petiole, before the first pair of leaflets [5]

4. Gland(s) on the rachis between the leaflet pair(s) [8]

5. Petiolar gland cylindrical to narrowly conic, ca. 2-3 mm tall; leaflets 8-11 mm wide ... *S. ligustrina*

5. Petiolar gland spherical, ca. 1 mm tall; leaflets 10-30 mm wide, at least the larger ones [6]

6. Leaf with 6-8 pairs of leaflets, strongly paler on the underside ... *S. marilandica*

6. Leaf with 4-5(6) pairs of leaflets, only slightly paler on the underside [7]

7. Leaflets obtuse to subacute-mucronate; fruit lacking the marginal band (only light colored on the marginal ridged edge) ... *S. chapmanii*

7. Leaflets acuminate at the apex; fruit with a conspicuous 1-3 mm wide marginal light band on the fruit body ... *S. occidentalis*

8. Glands between the lower 2 or more pairs of leaflets ... *S. surattensis*

8. Gland usually solitary between the lowermost pair of leaflets [9]

9. Rachis gland spheroidal to bluntly short-conic, sometimes with a short stipe [10]

9. Rachis gland short-cylindrical, stipe-like, or stipitate with the stipe nearly as long as the gland [11]

10. Leaflets not much paler below, usually with a conspicuous apical mucro; fruit flattened, dehiscent ... *S. mexicana* var. *chapmanii*

10. Leaflets much paler below, without an apical mucro or the mucro inconspicuous; fruit cylindrical, indehiscent and irregularly breaking apart ... *S. pendula* var. *glabrata*

11. Leaf with 6-10 pairs of leaflets ... *S. angustisiliqua*

11. Leaf with 2-3 pairs of leaflets [12]

12. Leaflets mostly acute at the apex, widest near the middle or base; fruit straight to slightly curved ... *S. corymbosa*

12. Leaflets very broadly rounded at the apex, usually widest near the apex; fruit usually strongly curved ... *S. obtusifolia*



\**Senna alata* (L.)Roxb.— {AFP}

\**Senna angustisiliqua* (Lam.)H.S.Irwin & Barneby— {AFP}

\**Senna atomaria* (L.)H.S.Irwin & Barneby— {AFP}

*Senna chapmanii* (Isely)A.Barreto & Yakovlev— {AFP} State Threatened. Miami-Dade & Monroe Keys (Bahamas, Cuba). Previously treated as a variety of *Senna mexicana* by Irwin & Barneby (1982: 415) who stated "We find them so closely related as to be best treated collectively as forming a megaspecies consisting of five geographical races, with contiguous but well differentiated ranges of dispersal."

\**Senna corymbosa* (Lam.)H.S.Irwin & Barneby— {AFP}

\**Senna didymobotrya* (Fresen.)H.S.Irwin & Barneby.— {AFP}

*Senna ligustrina* (L.)H.S.Irwin & Barneby— {AFP}

*Senna marilandica* (L.)Link— {AFP}

*Senna obtusifolia* (L.)H.S.Irwin & Barneby— {AFP}

\**Senna occidentalis* (L.)Link— {AFP}

\**Senna pendula* (Humb. & Bonpl. ex Willd.)H.S.Irwin & Barneby var. *glabrata* (Vogel)H.S.Irwin & Barneby— {AFP}

\**Senna polyphylla* (Jacq.)H.S.Irwin & Barneby— {AFP}

^ *Senna surattensis* (Burm.f.)H.S.Irwin & Barneby— {AFP}

## Sesbania {AFP}

1. Corolla 6-8(-10) cm long, white, pink, or red; fruit (15-)30-40 cm long ... *S. grandiflora*
1. Corolla 0.8-2.5 cm long, yellowish to reddish, externally mottled or not; fruit 3-20 cm long [2]
2. Fruit 10-20 cm long, 3-5 mm wide [3]
2. Fruit 3-8 cm long, 6-15 mm wide [4]
3. Stem and leaves glabrous; corolla 10-22 mm long ... *S. herbacea*
3. Stem and leaves sericeous to subappressed villous; corolla 8-11 mm long ... *S. sericea*
4. Corolla 8-9 mm long; fruit inflated with air, easily flattened when compressed, dehiscent, with 1-2 seeds ... *S. vesicaria*
4. Corolla 9-25 mm long; fruit 4-winged, quadrangular, or subterete, fairly rigid, not inflated and easily flattened, most fruits with 3-11 seeds [5]
5. Corolla 9-12 mm long; fruit quadrangular to subterete ... *S. virgata*
5. Corolla 13-25 mm long; fruit strongly 4-winged [6]
6. Corolla yellow, 13-17 mm long; stipe of fruit mostly 15-17 mm long; fruit margins often undulate-constricted between the seeds, the beak pyramidal-short acuminate ... *S. drummondii*
6. Corolla orange to red, 15-25 mm long; stipe of fruit mostly 11-14 mm long; fruit margins mostly roughened-entire or irregularly undulate, the beak pyramidal-long acuminate ... *S. punicea*

*Sesbania drummondii* (Rydb.)Cory— {AFP}

^ *Sesbania grandiflora* (L.)Poir.— {AFP}

*Sesbania herbacea* (Mill.)McVaugh— {AFP}

\**Sesbania punicea* (Cav.)Benth.— {AFP}

\**Sesbania sericea* (Willd.)Link— {AFP}

*Sesbania vesicaria* (Jacq.)Elliott— {AFP}

\**Sesbania virgata* (Cav.)Poir.— {AFP}

## Sigmoidotropis {AFP}

1. Calyx 5–6 mm long; corolla 2–3 cm long, the keel petal curved upward or slightly back towards the upper petal ... *S. antillana*

1. Calyx 8–10 mm long; corolla 3–4 cm long, the keel petal strongly curved pointing straight back towards the throat, pointing downwards, or nearly spirally coiled ... *S. speciosa*

\**Sigmoidotropis antillana* (Urb.)A.Delgado— {AFP}

\**Sigmoidotropis speciosa* (Kunth)A.Delgado— {AFP}

### **Sophora** {AFP}

1. Mature leaflet underside villous, the hairs erect to ascending, to 0.5 mm long ... *S. tomentosa* var. *occidentalis*

1. Mature leaflet underside sericeous, the hairs appressed to ascending, to 0.2 mm long ... *S. tomentosa* var. *truncata*

\**Sophora tomentosa* L. var. *occidentalis* (L.)Isely— {AFP}

*Sophora tomentosa* L. var. *truncata* Torr. & A.Gray— {AFP}

### **Strophostyles** {AFP}

1. Leaflets distinctly sericeous, lanceolate, never deeply lobed; inflorescence peduncle slender, herbaceous, 0.2–0.7 mm wide, 11.5–110(–123) mm long; flowers 3.6–7.0(–8.3) mm long; keel petal with a slightly curved beak that is largely enveloped by the wing petals (keel beak asymmetry is not detectable in pressed specimens); fruit distinctly sericeous, 12.2–40.7 mm long; seed glabrous ... *S. leiosperma*

1. Leaflets glabrate to sparsely strigose (rarely sericeous), linear-oblong to ovate, entire to deeply lobed; inflorescence peduncle stout, lignescent, 0.8–1.3 mm wide, (23.5–)50–300 mm long; flowers commonly 6.7–15 mm long; keel petal with a prominently curved beak that protrudes well above the wing petals (keel beak asymmetry is readily detectable in pressed specimens); fruit glabrate to sparsely strigose (rarely sericeous) (26) 30–96.1 mm long; seed pubescent [2]

2. Leaflets entire to shallowly lobed, rarely deeply lobed, the sinus 0.0–1.0 (6.0) mm deep, terminal leaflets (15.4) 20–40 (70) mm long, 2.0–21.8 (30.2) mm wide; bracteoles subtending the flower 0.8–2.4 mm long, generally shorter than the calyx tube; corolla keel beak erect, stout, slightly curved, measuring 1.5–2.0 mm in diameter at the base and remaining closely associated with the face of the standard petal; fruit subcylindrical, with a distinct lateral compression ... *S. umbellata*

2. Leaflets deeply lobed to entire, the sinus 0.0–18.2 mm deep, terminal leaflets 17.9–71.5 mm long, 8.5–46.2 mm wide; bracteoles subtending the flower 1.5–4.2 mm long, generally as long or longer than the calyx tube; corolla keel beak slender, curved, measuring about 1 mm in diameter at the base and projected outward from the face of the standard petal; fruit cylindrical ... *S. helvola*

*Strophostyles helvola* (L.)Elliott— {AFP}

*Strophostyles leiosperma* (Torr. & A.Gray)Piper— {AFP}

*Strophostyles umbellata* (Muhl. ex Willd.)Britton— {AFP}

### **Stylosanthes** {AFP}

1. Plant viscid, glandular ... *S. viscosa*

1. Plant eglandular ... [2]

- 2. Inflorescence bracts with stiff, spinescent pubescence; loment beak 0.5-1 mm long ... *S. biflora*
- 2. Inflorescence bracts with soft pubescence; loment beak 1-2.5 mm long [3]
- 3. Stems mostly <20 cm long, stems nearly all from the base of the plant and with almost no branching above; loment usually with 1 seed only, in the distal segment; loment beak straight or slightly curved ... *S. calcicola*
- 3. Stems usually >20 cm long, commonly branching; loment usually with 2 seeds, one in the proximal segment and one in the distal segment; loment beak incurved or hooked ... *S. hamata*

***Stylosanthes biflora*** (L.) Britton et al.— {AFP}

***Stylosanthes calcicola*** Small— {AFP} State Endangered.

***Stylosanthes hamata*** (L.) Taub.— {AFP}

***Stylosanthes viscosa*** (L.) Sw.—

**Tamarindus** {AFP}

\****Tamarindus indica*** L.— {AFP}

**Tara** {AFP}

\****Tara vesicaria*** (L.) Molinari et al.— {AFP}

**Tephrosia** {AFP}

- 1. Style glabrous; corolla 7-12 mm long [2]
- 1. Style barbellate or hispidulous; corolla 10–20 mm long [6]
- 2. Plants villous with spreading hairs; corolla mostly pale pink ... *T. angustissima* var. *corallicola*
- 2. Plants strigose to glabrate, hairs appressed (sometimes a few spreading); corolla pale pink to purple [3]
- 3. Width of largest terminal leaflets usually 7 mm or more; corolla 10-12 mm long; longest hairs of fruit 0.3-0.8 mm long; corolla mostly pale pink ... *T. cinerea*
- 3. Width of largest terminal leaflets usually 6 mm or less; corolla 7-11 mm long; longest hairs of fruits 0.1-0.4 mm long; corolla mostly purple, pink-purple, to reddish purple [4]
- 4. Leaflets 10-20 times longer than wide ... *T. angustissima* var. *angustissima*
- 4. Leaflets 2-8 times longer than wide [5]
- 5. Stipules 1-3 mm long; flowering Jun-Oct ... *T. angustissima* var. *curtissii*
- 5. Stipules 4-8 mm long; flowering Mar-Apr, Sep ... *T. seminole*
- 6. Leaflets 9-35; corolla 15–20 mm long, 2-colored, the standard yellow, the wings pink [7]
- 6. Leaflets 5-17; corolla less than 15 mm long, not 2-colored, usually white to pink, turning red to purple in age [8]
- 7. Plant 10-15(20) cm tall; inflorescence of 4-12 flowers ... *T. virginiana* var. *mohrii*
- 7. Plant 30-70 cm tall; inflorescence of 10-40 flowers ... *T. virginiana* var. *virginiana*
- 8. Petiole 2-4 times the length of the lowest leaflet; peduncle conspicuously flattened ... *T. florida*
- 8. Petiole subequal to shorter than the length of the lowest leaflet; peduncle terete or nearly so [9]
- 9. Stems monopodial, erect to ascendent; raceme foliose, with several reduced or undeveloped leaves that enlarge as the fruits mature, often with 2-3 flowers at a node; ... *T. rugelii*
- 9. Stems sympodial, prostrate, decumbent to weakly ascendent; raceme not foliose (rarely with a single leaf), flowers usually singular at a node [10]
- 10. Plant prostrate; trichomes of fruit less than 0.5 mm long [11]

10. Plant decumbent to weakly ascendent; trichomes of fruit 0.5-1.5 mm long [12]
11. Leaflets (1-)5-7, dorsal surface glabrous, semi-lustrous, bright green ... *T. chrysophylla*
11. Leaflets (1-)7-11(-13), dorsal surface microscopically tawny-hirsute, glabrate in age, dull (rarely glabrous or lustrous), olive-green or somewhat brownish olive-green ... *T. misteriosa*
12. Leaflets 3-7 mm wide; upper stem and leaf rachis with appressed trichomes; calyx 3-5 mm long ... *T. hispidula*
12. Leaflets 6-12 mm wide; upper stem and leaf rachis with spreading trichomes; calyx 6-7 mm long ... *T. spicata*

***Tephrosia angustissima*** Shuttlew. ex Chapm. var. ***angustissima***— {AFP} Endemic. State Endangered. Extinct.

***Tephrosia angustissima*** Shuttlew. ex Chapm. var. ***curtissii*** (Small ex Rydb.) Isely— {AFP} Endemic. State Endangered.

***Tephrosia angustissima*** Shuttlew. ex Chapm. var. ***corallicola*** (Small) Isely— {AFP} State Endangered.

***Tephrosia chrysophylla*** Pursh— {AFP}

\****Tephrosia cinerea*** (L.) Pers.— {AFP}

***Tephrosia florida*** (F. Dietr.) C.E. Wood— {AFP}

***Tephrosia hispidula*** (Michx.) Pers.— {AFP}

***Tephrosia* × *intermedia*** (Small) G.L. Nesom & Zarucchi— {AFP}

***Tephrosia misteriosa*** DeLaney— {AFP} Endemic.

***Tephrosia rugelii*** Shuttlew. ex B.L. Rob.— {AFP} Endemic.

***Tephrosia seminole*** Shinnars— Endemic. Its recognition supported by von Wettberg et al. (2023, unpublished).

***Tephrosia spicata*** (Walter) Torr. & A. Gray— {AFP}

***Tephrosia* × *varioforma*** DeLaney— {AFP} Endemic.

***Tephrosia virginiana*** (L.) Pers. var. ***mohrii*** (Rydb.) D.B. Ward— {AFP} Sometimes recognized as a species (“with some hesitation”, [Godfrey & Kral 1958](#)) but also said to “integrate” (Nesom in FNA, vol. 11).

***Tephrosia virginiana*** (L.) Pers. var. ***virginiana***— {AFP}

## Teramnus

\****Teramnus labialis*** Spreng.— Miami-Dade Co. Unvouchered observation on iNaturalist.

## Ticanto

\****Ticanto crista*** (L.) R. Clark & Gagnon— {AFP}

## Trifolium {AFP}

1. Corolla bright yellow [2]

1. Corolla white, pink, to red [3]

2. Stipules 5-8 mm long; leaflets rhombic to obovate; corolla 4-6 mm long, the upper petal striate or ribbed, plane or nearly so; inflorescence 8-13 mm wide, mostly with 20-60 flowers ... *T. campestre*

2. Stipules 3-5 mm long; leaflets obovate to elliptic-lanceolate; corolla 2.5-4 mm long, the upper petal scarcely striate or ribbed or not at all, longitudinally folded; inflorescence 5-8 mm wide, mostly with 3-20 flowers ... *T. dubium*

3. Pedicels 1-10 mm long [4]

3. Pedicels 0-1 mm long [8]

4. Plant stoloniferous; peduncles arising from the stolon ... *T. repens*
4. Plant not stoloniferous; peduncles arising from aboveground nodes of the stem [5]
5. Stipules lanceolate, subequal to the stem width, scarious, sometimes green only in the upper half; calyx glabrate (except for tufts at the base) [6]
5. Stipules ovate, often wider than the stem, most of the blade green when young, sometimes scarious at the base; calyx pilose (sometimes sparsely so) [7]
6. Leaflets 1-4 cm long; calyx lobes not scarious-margined ... *T. hybridum*
6. Leaflets 0.6-2.5 cm long; calyx lobes scarious-margined ... *T. nigrescens*
7. Calyx lobes lanceolate, foliaceous, 3-veined; inflorescence 1-1.5 cm wide; corolla 4-7 mm long ... *T. carolinianum*
7. Calyx lobes subulate, setaceous, 1-veined; inflorescence 2-4 cm wide; corolla 8-12 mm long ... *T. reflexum*
8. Inflorescence subsessile and involucrate, subtended by 2 broad stipules and 1-2 leaves [9]
8. Inflorescence pedunculate (occasionally subsessile, the peduncle mostly >2 mm long), without stipules and leaves directly under the head [10]
9. Stipules with an acuminate tip; calyx subappressed pubescent, the tube 20-nerved ... *T. hirtum*
9. Stipules with a filamentous, awned tip; calyx sparsely pilose, the tube 10-nerved ... *T. pratense*
10. Calyx bladder-like, becoming inflated in fruit [11]
10. Calyx not bladder-like, becoming inflated in fruit [13]
11. Calyx tube 4-6 mm long; corolla not resupinate; fruit with 4-6 mm long, (1-)3-4 seeds ... *T. spumosum*
11. Calyx tube 1-2 mm long; corolla resupinate; fruit 1.5-2 mm long, with 1 seed [12]
12. Peduncle 6-60 mm long; calyx short-hairy to glabrate, the apical teeth prolonged and conspicuous, especially in fruit, the calyx tube 7-9 mm long in fruit ... *T. resupinatum*
12. Peduncle to 15 mm long, often much shorter; calyx woolly, the apical teeth short and usually concealed, the calyx tube 4-5 mm long in fruit ... *T. tomentosum*
13. Corolla 3-8 mm long, subequal to shorter than the calyx [14]
13. Corolla 9-18 mm long, subequal to longer than the calyx [15]
14. Leaflets mostly oblong to narrowly obovate, <3 mm wide; inflorescence head elongate, cylindric; calyx tube pubescent, 10-nerved, the lobes 1-nerved ... *T. arvense*
14. Leaflets mostly obovate, >3 mm wide; inflorescence head globose; calyx tube glabrous, 20-nerved, the lobes with 2 or more nerves ... *T. lappaceum*
15. Inflorescence 1-2 cm wide, without floral bracts; calyx pilose, 10-nerved, not cross-reticulate; corolla red (rarely white); calyx not inflated in fruit ... *T. incarnatum*
15. Inflorescence 2.5-3 cm wide, with floral bracts; calyx glabrate to sparsely pilose at the tip, 20-nerved, cross-reticulate; corolla white; calyx inflated in fruit ... *T. vesiculosum*

\**Trifolium arvense* L.— {AFP}

\**Trifolium campestre* Schreb.— {AFP}

*Trifolium carolinianum* Michx.— {AFP}

\**Trifolium dubium* Sibth.— {AFP}

\**Trifolium hirtum* All.— {AFP}

\**Trifolium hybridum* L.— {AFP}

\**Trifolium incarnatum* L.— {AFP}

\**Trifolium lappaceum* L.— {AFP}

\**Trifolium nigrescens* Viv.— {AFP}

\**Trifolium pratense* L.— {AFP}

- Trifolium reflexum* L.— {AFP}  
 \**Trifolium repens* L.— {AFP}  
 \**Trifolium resupinatum* L.— {AFP}  
 \**Trifolium spumosum* L.— {AFP}  
 \**Trifolium tomentosum* L.— {AFP}  
 \**Trifolium vesiculosum* Savi— {AFP}

### Trigonella {AFP}

- ^ *Trigonella caerulea* (L.)Ser.— {AFP}

### Vachellia {AFP}

1. Pinnae 10-15(25) pairs along the rachis ... *V. macracantha*
1. Pinnae 1-8(10) pairs along the rachis [2]
2. Stipular spines hollow, on young branches with a stout thick base >4 mm wide (above the fused base), rather abruptly tapered at the tip to a sharp point (the tip sometimes worn off), the fused base >5 mm long from the stem; leaflet tip sometimes with a gland (Beltian body) [3]
2. Stipular spines lacking a hollow cavity, on young branches mostly <4 mm wide (above the fused base) and rather evenly tapered to the sharp tip, the fused based mostly <5 mm long from the stem, or branches unarmed; leaflet tip lacking a gland [4]
3. Secondary venation of leaflets conspicuous; inflorescence a cylindric head; fruit usually not striate ... *V. cornigera*
3. Secondary venation of leaflets obscure; inflorescence a subglobose head; fruit striate ... *V. sphaerocephala*
4. Leaflets 15-30 mm long ... *V. choriophylla*
4. Leaflets 2.5-6.5 mm long [5]
5. Petioles, rachises, and spines densely pubescent; petioles 3-7 mm long; leaflets strongly ciliate; calyx and corolla lobes densely puberulent; fruits 8-15 cm long, 5-9 mm wide, densely pubescent and constricted between the seeds ... *V. tortuosa*
5. Petioles, rachises, and spines glabrous to lightly pubescent; petioles to 3-17 mm long; leaflets glabrous or slightly ciliate; calyx and corolla lobes glabrate; fruits 3-9 cm long, 10-18 mm wide, glabrate and not constricted between the seeds [6]
6. Mature shrub or tree 2-8 m tall; petiole often >6 mm long and sometimes pubescent; larger leaflets often >3 mm long; secondary venation of mature leaflets conspicuous ... *V. farnesiana* var. *farnesiana*
6. Mature shrub to 0.7-2.5 m tall; petiole usually <7 mm long and glabrous; larger leaflets usually <3 mm long; secondary venation of mature leaflets obscure ... *V. farnesiana* var. *pinetorum*

***Vachellia choriophylla*** (Benth.)Seigler & Ebinger— {AFP} State Endangered.

\****Vachellia cornigera*** (L.)Seigler & Ebinger— {AFP}

***Vachellia farnesiana*** (L.)Wight & Arn. var. ***pinetorum*** (F.J.Herm.)Seigler & Ebinger— {AFP}  
 Endemic.

***Vachellia farnesiana*** (L.)Wight & Arn. var. ***farnesiana***— {AFP}

***Vachellia macracantha*** (Humb. & Bonpl. ex Willd.)Seigler & Ebinger— {AFP}

\****Vachellia sphaerocephala*** (Schltld. & Cham.)Seigler & Ebinger— {AFP}

***Vachellia tortuosa*** (L.)Seigler & Ebinger— {AFP} State Endangered.

### Vicia {AFP}

1. Inflorescence sessile to subsessile, of 1-4 flowers [2]

1. Inflorescence pedunculate, of 1-15 flowers [4]
2. Calyx lobes strongly unequal, the upper ones shorter than the tube, the lower ones subequal to longer than the tube and 2-4 mm longer than the upper ones; fruit hirsute, the trichomes often pustulate-based ... *V. lutea*
2. Calyx lobes subequal, shorter than to subequal to the tube, the lower ones 0-2 mm longer than the upper ones; fruit glabrous, puberulent, to strigulose [2]
3. Calyx lobes 2-5 mm shorter than the tube; corolla yellow, often with purple streaks, 2.3-3 cm long ... *V. grandiflora*
3. Calyx lobes (at least the lower ones) subequal to the tube, 0-2 mm shorter than the tube; corolla pinkish white to purple, 1-2.5(-3) cm long ... *V. sativa*
4. Leaflet 2-8(-10) per leaf [5]
4. Leaflets 8-16 per leaf [9]
5. Flowers 1-2(-3) per raceme [6]
5. Flowers 2-12 per raceme [7]
6. Fruit 1.5-3 cm long, tapered to the tip, with (4-)6-8(-12) seeds ... *V. minutiflora*
6. Fruit 1-1.5 cm long, rounded at the tip (except for the awn-like beak), typically with 4 seeds ... *V. tetrasperma*
7. Leaflets 10-15 mm long; fruit 8-15 mm long, with 1-3 seeds ... *V. floridana*
7. Leaflets 55 mm long; fruit 20-45 mm long, with 4-12 seeds [8]
8. Leaflets mostly 4, 15-30 mm long; fruits 2-3 cm long; seeds ca. 2 mm long ... *V. acutifolia*
8. Leaflets mostly 6, 23-50 mm long; fruits 4-4.5 cm long; seeds 3-4 mm long ... *V. ocalensis*
9. Inflorescence with 2-9(-12) flowers; corolla 3-8 mm long; fruit 6-25(-35) mm long [10]
9. Inflorescence with 8-25 flowers; corolla (7-)8-18 mm long; fruit 15-40 mm long [11]
10. Calyx 2-2.5 mm long; corolla 2.5-5 mm long; fruit hirsute to puberulent, 6-10 mm long, with 1-3 seeds ... *V. hirsuta*
10. Calyx 2.8-4 mm long; corolla 4.5-8 mm long; fruit glabrous, 15-25(-35) mm long, with 3-7 seeds ... *V. ludoviciana*
11. Calyx 2-3 mm long, the lower lobe deltate; corolla white or tinged with lavender, (7-)8-10(-12) mm long; fruit ... *V. caroliniana*
11. Calyx 5-6 mm long, the lower lobe lanceolate to acicular; corolla violet, violet and white, or rarely white, 10-18 mm long ... *V. villosa*

***Vicia acutifolia*** Elliott— {AFP}

***Vicia caroliniana*** Walter— {AFP}

***Vicia floridana*** S.Watson— {AFP}

\****Vicia grandiflora*** Scop.— {AFP}

\****Vicia hirsuta*** (L.)Gray— {AFP}

***Vicia ludoviciana*** Nutt. ex Torr. & A.Gray— {AFP}

\****Vicia lutea*** L.— {AFP}

***Vicia minutiflora*** D.Dietr.— {AFP}

***Vicia ocalensis*** R.K.Godfrey & Kral— {AFP} Endemic. State Endangered.

\****Vicia sativa*** L.— {AFP}

\****Vicia tetrasperma*** (L.)Schreb.— {AFP}

\****Vicia villosa*** Roth— {AFP}

***Vigna*** {AFP}

1. Stipules 5-15 mm long; larger leaflets 6-15 cm long; corolla white, pink, to purple; fruit 7-20 cm long ... *V. unguiculata*

1. Stipules 1-5 mm long; leaflets 2-7(-9) cm long; corolla yellow; fruit 1-7 cm long [2]
2. Corolla 8-11 mm long; fruit 1-2 cm long ... *V. hosei*
2. Corolla 15-17 mm long; fruit 4-7 cm long ... *V. luteola*

\**Vigna hosei* (Craib) Backer— {AFP}

*Vigna luteola* (Jacq.) Benth.— {AFP}

\**Vigna unguiculata* (L.) Walp.— {AFP}

### Wisteria {AFP}

1. Vine twining, from the basal lower left ascending distally to the upper right and turning away from the observer and wrapping behind; leaflet apex generally acuminate with an obtuse to subacute tip, margins usually mostly plane; inflorescence with tightly congested flowers; pedicels 5-10(-15) mm long; upper petal reflexed near the middle, the lateral (wing) petals together forming a rounded down-curving hood above the lower (keel) petal; ovary and fruit glabrous; seeds reniform ... *W. frutescens*

1. Vine twining in either direction; leaflet apex generally acuminate with an acute to aristate tip, the margin often undulate; inflorescence with somewhat congested to spaced flowers; pedicels 15-20 mm long; upper petal reflexed near the base, the lateral (wing) petals facing each other and shielding the sides of the lower (keel) petal; ovary and fruit pubescent; seeds orbicular [2]

2. Vine twining, from the basal lower left ascending distally to the upper right and turning away from the observer and wrapping behind; leaflets (7-)9-11(-13) per leaf; raceme to 35 cm long, the mostly non-fragrant flowers opening nearly simultaneously; corolla 2-2.7 cm long ... *W. sinensis*

2. Vine twining, from the basal lower right ascending distally to the upper left and turning away from the observer and wrapping behind; leaflets 7-19 per leaf; raceme to 160 cm long, the fragrant flowers opening nearly simultaneously or sequentially; corolla 1.5-2 cm long [3]

3. Leaflets (11-)13-19 per leaf; raceme to 80(160) cm long, the flowers opening sequentially from the base to the tip; auricles of the standard's callosity 0.7-0.8 mm long ... *W. floribunda*

3. Leaflets 7-15(-17) per leaf; racemes to 36 cm long, the flowers opening nearly simultaneously; auricles of the standard's callosity 0.7-0.8 mm long ... *W. ×formosa*

\**Wisteria floribunda* (Willd.) DC.— {AFP}

\**Wisteria ×formosa* Rehder— {AFP}

*Wisteria frutescens* (L.) Poir.— {AFP}

\**Wisteria sinensis* (Sims) Sweet— {AFP}

### Zornia {AFP}

1. Leaves with 4 leaflets; floral bracts ovate to elliptic, 3.5-7.1 mm wide; loment with retrorsely barbed bristles but otherwise glabrous; loment with 2-4 segments, the segments lunulate and 3.4-4.2 mm long ... *Z. bracteata*

1. Leaves with 2 leaflets; floral bracts lanceolate to narrowly elliptic, 1.3-1.7 mm wide; loment with retrorsely barbed bristles and hirtellous; loment with (3-)4-6(-7) segments, the segments mostly square-shaped and 1.9-2.1 mm long ... *Zornia latifolia*

*Zornia bracteata* J.F. Gmel.— {AFP}

\**Zornia latifolia* Sm.— {AFP}



## POLYGALACEAE {AFP}

1. Lower petal (keel) lacking a terminal crest ... *Asemeia*
1. Lower petal (keel) with a brush-like or multi-lobed crest ... *Polygala*

### *Asemeia* {AFP}

***Asemeia grandiflora*** (Walter) Small— {AFP} Following Mota (2023), restricted to the USA, West Indies, and Costa Rica; distinguished by larger flowers, presence of rudimentary petals, and a longer style (vs. flowers and style smaller, rudimentary petals absent in *A. violacea* of Mexico thru South America, and some Caribbean Islands).

***Polygala*** {AFP} The colorful, showy perianth parts of the *Polygala* flower are the two lateral sepals (reduced in *P. incarnata*), two upper petals, and a keeled lower petal exhibiting a multi-lobed or brush-like crest. All members of *Polygala* in Florida (except *Asemeia*) have been moved to the genus *Senega* (Pastore et al. 2023). The roots of many species have a wintergreen-like odor and taste, probably due to the presence of methyl salicylate (Wherry 1927).

1. Predominant, conspicuous perianth colors orange, yellow, to green [2]
1. Predominant, conspicuous perianth colors purple, pink, white, or greenish white (petals sometimes yellow to greenish yellow) [7]
2. Flowers in branched, compound cymes [3]
2. Flowers in solitary racemes [4]
3. Basal leaves 2-6 cm long, linear to linear-lanceolate, forming a persistent rosette during flowering; seeds glabrous ... *P. cymosa*
3. Basal leaves 2 cm long or less, elliptic to spatulate, often few to none remaining during flowering; seeds pubescent ... *P. ramosa*
4. Conspicuous lateral sepals (wings) long-acuminate [5]
4. Conspicuous lateral sepals (wings) cuspidate or mucronate [6]
5. Lateral sepals elliptic, involute at the apex; seed body (excluding the stipe) less than 1 mm long ... *P. nana*
5. Lateral sepals oblong-lanceolate, the tip flat and not involute; seed body (excluding the stipe) 1.1-1.2 mm long... *P. smallii*
6. Lateral sepals and petals orange, drying pale yellow; peduncle (from uppermost leaf to the base of the inflorescence) (0.5)1-4(5.5) cm long; racemes <1.8 cm wide ... *P. lutea*
6. Lateral sepals and petals yellow, drying greenish yellow; peduncle (from uppermost leaf to the base of the inflorescence) (3.5)4-16 cm long; racemes >1.5 cm wide ... *P. rugelii*
7. Flowers in branched, compound cymes [8]
7. Flowers in solitary racemes [9]
8. Inflorescence of dense racemes; wings definitely white; seed <0.6 mm long; aril on seed usually 0.2 mm long, infrequently smaller ... *P. baldunii* var. *baldunii*
8. Inflorescence of more or less elongated racemes; wings cream to greenish-white; seed >0.6 mm long; aril on seed a minute scale or absent ... *P. baldunii* var. *carteri*
9. Leaves whorled, at least those on the lower parts of the stem [10]
9. Leaves all alternate [15]
10. Bracts subtending flowers deciduous or inconspicuous; flowers sessile or the pedicel <1 mm long [11]

10. Bracts subtending flowers persistent and conspicuous, remaining after flowers and fruits have abscised; flowers distinctly pedicellate (the pedicel sometimes hidden by the crowded flowers), the pedicel >1 mm long [13]
11. Longest internodes between leaves 4 cm long or longer; seeds glabrous or nearly so, fusiform ... *P. leptostachys*
11. Longest internodes between leaves 3 cm long or less; seeds pubescent, ovoid to narrowly ovoid [12]
12. Leaves on the lower parts of the stem obovate, elliptic, to oblanceolate; lateral sepals 2-3 mm long ... *P. boykinii*
12. Leaves on the lower parts of the stem linear-lanceolate; lateral sepals 1-1.5 mm long ... *P. verticillata*
13. Racemes sparsely flowered, the pedicels readily visible ... *P. hookeri*
13. Racemes densely flowered, the pedicels obscured by the crowded flowers [14]
14. Racemes with a peduncle usually 2-8 cm long; lateral sepals ovate, 1.5-2.5 mm long, the apex obtuse or minutely apiculate ... *P. brevifolia*
14. Racemes sessile or the peduncle rarely exceeding 1 cm in length; lateral sepals deltoid, 3-4 mm long, the apex abruptly narrowed to a cuspidate tip ... *P. cruciata*
15. Petals with the brush-like crest exerted from the sepals, the lateral sepals less than half as long as the petals ... *P. incarnata*
15. Petals not conspicuously exerted, subequal to or shorter than the lateral sepals [16]
16. Racemes densely flowered, the middle and upper flowers crowded and overlapping [17]
16. Racemes sparsely flowered, the flowers mostly well separated from one another [20]
17. Leaves scale-like and inconspicuous, ca. 1 mm long or less ... *P. setacea*
17. Leaves conspicuous, most >3 mm long [18]
18. Bracts subtending the flowers deciduous; inflorescence broadly rounded at the apex, the growing tip only slightly exerted and nearly inconspicuous ... *P. mariana*
18. Bracts subtending the flowers persistent after the flowers and fruits abscised; inflorescence acute to tapered at the apex, the growing tip conspicuous [19]
19. Plants single-stemmed or few-branched above mid-stem; raceme 6-10 mm wide ... *P. chapmanii*
19. Plants much branched near mid-stem, rarely single-stemmed; raceme 5-6 mm wide ... *P. nuttallii*
20. Plant without subterranean inflorescences; flower (excluding the pedicel) ca. 1.5 mm long ... *P. appendiculata*
20. Plant with subterranean inflorescences of cleistogamous flowers; aerial flowers 3-5 mm long [21]
21. Leaves of the mid-stem narrowly obovate; capsule margins crenately winged ... *P. crenata*
21. Leaves of the mid-stem linear, elliptic, to narrowly oblanceolate; capsules margins entire [22]
22. Stems often appearing densely leafy; capsule oblong, 2-3 times longer than wide; seeds cylindrical, the upper part of the arils bony like the caruncle ... *P. lewtonii*
22. Stems with leaves visibly separated from one another; capsule ovoid, less than 2 times longer than wide; seeds ovoid to cylindrical, the aril membranaceous ... *P. polygama*

***Polygala appendiculata*** Vell.— {AFP}

***Polygala balduini*** Nutt.— {AFP}

***Polygala boykinii*** Nutt.— {AFP}

***Polygala brevifolia*** Nutt.— {AFP}

***Polygala chapmanii*** Torr. & A.Gray— {AFP}

*Polygala crenata* C.W.James— {AFP}  
*Polygala cruciata* L.— {AFP}  
*Polygala cymosa* Walter— {AFP}  
*Polygala hookeri* Torr. & A.Gray— {AFP}  
*Polygala incarnata* L.— {AFP}  
*Polygala leptostachys* Shuttlew. ex A.Gray— {AFP}  
*Polygala lewtonii* Small— {AFP} Endemic. Federally Endangered. State Endangered.  
*Polygala lutea* L.— {AFP}  
*Polygala mariana* Mill.— {AFP}  
*Polygala nana* (Michx.)DC.— {AFP}  
*Polygala nuttallii* Torr. & A.Gray— {AFP}  
*Polygala polygama* Walter— {AFP}  
*Polygala ramosa* Elliott— {AFP}  
*Polygala rugelii* Shuttlew. ex Chapm.— {AFP} Endemic.  
*Polygala setacea* Michx.— {AFP}  
*Polygala smallii* R.R.Sm. & D.B.Ward— {AFP} Endemic. Federally Endangered. State Endangered.  
*Polygala verticillata* L.— {AFP}

## SURIANACEAE {AFP}

Suriana {AFP}

*Suriana maritima* L.— {AFP}

## FAGALES

### FAGACEAE {AFP}

1. Branches terminating in clustered or crowded buds; male inflorescence a pendent ament; fruit an acorn, circular in cross-section, subtended by a scaly or tuberculate cup ... *Quercus*

1. Branches with a solitary terminal bud, adjacent buds not crowded; male inflorescence a pedunculate heads or a spike of glomerulate clusters; fruit one or few angular to rounded-angular nuts enclosed in a prickly or scaly-bristly cupule [2]

2. Buds ovoid, rounded to bluntly acute at the tip; leaf blade teeth awned to acuminate; male inflorescence a spike of glomerulate clusters; cupule spines 5-20 mm long; nut rounded-angular ... *Castanea*

2. Buds elongate-fusiform, narrowly acute at the tip; leaf blade teeth acute; male inflorescence a pedunculate head; cupule scaly bristles curved, 1-5 mm long; nut triangular ... *Fagus grandifolia*

**Castanea** {AFP} *Castanea pumila* s.lat. (Johnson 1988) appears to form a well supported clade (Spriggs & Fertakos 2020; Perkins et al. 2021) that encompasses a wide range of growth forms that may integrate. Kurz & Godfrey (1962) felt the two arborescent taxa were "reasonably clear-cut" and the stoloniferous taxon was definitely "not associated" with *C. floridana*. Further, *C. pumila* s.str. is possibly absent from Florida (Ashe 1922; Ward 2000), and Camus (1929) mapped it only as far south as northern Alabama and northern Georgia. Jaynes (1964) made successful crosses between *C. pumila* s.str. and both *C. alnifolia* and *C. ashei* (not attempted with *C. floridana*). Various hybrids were named by Camus (1929), such as *C. × fleetii* (*crenata* × *pumila*), *C. × endicottii* (*crenata* × *dentata*), *C. × neglecta* (*dentata* × *pumila*), *C. × burbankii* (*mollissima* × *pumila*), and *C. × morrisii*, nom. nud. (*alnifolia* × *mollissima*).

1. Leaf blade undersides glabrous or sparsely puberulent along the veins, and with 4-celled sessile glands ... *C. dentata*
1. Leaf blade undersides with simple and stellate hairs, and the glands either sessile and 9-celled, or stipitate [2]
2. Leaf blade undersides with 9-celled, sessile glands ... *C. crenata*
2. Leaf blade undersides with stipitate glands [3]
3. Leaf blade undersides with stipitate glands only along the midrib or veins; cupule with (1-)3 nuts ... *C. mollissima*
3. Leaf blade undersides with stipitate glands throughout; cupule with 1(-3) nuts [4]
4. Stoloniferous shrub, to 1 m tall; leaf blade underside with few secretory hairs; infructescence with 1-2 cupules (rarely more); of scrub and sandhills ... *C. alnifolia*
4. Solitary shrub or small tree, 2-15 m tall; leaf blade underside usually without secretory hairs; infructescence with 2-10 cupules; primarily of open woodlands [5]
5. Leaf blade lower surface usually grayish white and densely tomentose, rarely glabrate, hairs with numerous arms 0.15-0.3 mm long; staminate inflorescence 7-10 mm wide, flowers densely crowded ... *C. ashei*
5. Leaf blade lower surface pale green, finely tomentose, or glabrate (esp. shade leaves), hairs with 8-16 arms 0.6-0.12 mm long; staminate inflorescence 3-6 mm wide, flower clusters interrupted ... *C. floridana*

***Castanea alnifolia*** Nutt.— {AFP}

***Castanea ashei*** (Sudw.)Sudw. ex Ashe— {AFP} Camus (1929) distinguished *C. ashei* by its cupules with few, spaced prickles, the leaf blades with 16-22 veins per dm, leaf underside hairs with many arms 0.15-0.3 mm long, and shade leaves obovate-obtuse (vs. *C. pumila* of cupules with numerous, dense prickles, the leaf blades with veins 9-12 per dm, the leaf underside hairs with 4-6 arms 0.2-0.5 mm long, and all leaves acute-tipped). However, Camus (1929) mapped the entity only to southeastern Georgia, without including Florida.

^ *Castanea crenata* Siebold & Zucc.— {AFP}

***Castanea dentata*** (Marshall)Borkh.— {AFP} In Florida it was known from only one putative native population, collected by Harbison in 1917 from Crestview, Okaloosa Co. (GH). It was reported for Escambia Co. by Little, Jr. (1978), but no specimens are known. After detection of the Asian ascomycete *Cryphonectria parasitica* (chestnut blight) in the Bronx Zoo in 1904, in the following decades *C. dentata* was virtually lost from forests of eastern USA. Attempts to confer resistance to the fungus have utilized hybrids with *C. mollissima* backcrossed to *C. dentata* or inserting genes directly into *C. dentata* (esp. oxalate oxidase). Another pathogen, the oomycete *Phytophthora cinnamomi*, is also problematic for *C. dentata* (Steiner et al. 2016).

***Castanea floridana*** (Sarg.)Ashe— {AFP} Camus (1929) distinguished *C. floridana* by its leaf blade undersides pubescent or glabrous in the shade and the cupule with pubescent prickles (vs. *C. alabamensis* of leaf blade undersides all glabrous and the cupule with glabrescent prickles). Three varieties were recognized by Camus (1929), two occurring in Florida: var. *floridana* with young stems glabrous and rarely 2 mm wide, petioles rarely 2 mm long, shade leaf blade base slightly attenuate, and var. *margaretta* with young stems slightly pubescent and 1.5-2.1 mm wide, shade leaf blade base attenuate and rounded, petioles 3-6 mm long.

^ *Castanea mollissima* Blume— {AFP}

## Fagus {AFP}

*Fagus grandifolia* Ehrh.— {AFP}

**Quercus** {AFP} Hughes & Annis (in [Weakley et al. 2024](#)) reported *Q. similis* for Leon Co., which would be a surprising disjunct from its native range along the Mississippi River.

1. Mature buds somewhat conic and acute towards the tip; trichomes absent, simple, fasciculate (arms generally spreading or ascending from a central base, the base sometimes stipe-like), or stellate (arms generally horizontal and fused at a central point); leaf blades sometimes with a bristle or awn at the leaf tip or lobe tips; acorn cup scales flattened; acorns usually more bitter or astringent, maturing in the second year; bark of larger trees often with smoothish ridges only shallowly fissured, some species having blocky bark; section Lobatae (red oaks) ... Key A

1. Mature buds somewhat globose-ellipsoid and rounded at the tip, or if conic and acute towards the tip then the leaf blades with numerous nearly straight and parallel secondary veins; trichomes absent, simple, fasciculate (arms generally spreading or ascending from a central base, the base sometimes stipe-like), or multi-radiate (arms generally spreading or ascending, arising from 2 or more points or bases, sometimes rosulate); leaf blades without bristles or awns, sometimes with a short mucro; acorn cup scales thickened, tuberculate; acorns usually sweeter, maturing in one year; bark of larger trees often platy, blocky, strongly ridged, or strongly fissured; sections Quercus and Virentes (white oaks) ... Key B

Key A: red oaks

1. Leaf blades mostly deeply lobed, the sinuses  $\frac{1}{3}$  or more as long as the distance from the midrib to the leaf blade margin [2]

1. Leaf blades mostly entire to shallowly lobed, the sinuses  $\frac{1}{3}$  or less as long as the distance from the midrib to the leaf blade margin [6]

2. Lower surface of the mature leaf blade tomentose with yellowish gray trichomes [3]

2. Lower surface of the mature leaf blade glabrous to glabrate except for tufts of trichomes in the vein axils [4]

3. Bark with rough ridges; base of leaf blade typically U-shaped; leaf blade lobes 3-7 ... *Q. falcata*

3. Bark with somewhat lustrous and platy or smooth ridges; base of leaf blade typically angular; leaf blade lobes typically 5-11 ... *Q. pagoda*

4. Petiole 0-13 mm long; leaf blade base acute at a narrow V-shaped angle; young leaf blade often orange scurfy ... *Q. laevis*

4. Petiole 13-70 mm long; leaf blade base truncate to broadly angular; young leaf blade pubescent or glabrous [5]

5. Buds glabrous or pubescent only at the tip; acorn cup covering  $\frac{1}{3}$  or less of the nut ... *Q. shumardii*

5. Buds pubescent in distal half; acorn cup covering  $\frac{1}{2}$  or more of the nut ... *Q. velutina*

6. Leaf blades broader towards the apex and much narrower towards the base, often somewhat lobed with the margins not evenly rounded nor straight on some parts [7]

6. Leaf blades mostly elliptic to obovate (at least in outline), not much broader towards the apex and not much narrower towards the base or only slightly so, generally without lobes, the margin mostly evenly rounded to straight [9]

7. Leaf blades usually pubescent on the lower surface ... *Q. marilandica*

7. Leaf blades glabrous to glabrate on the lower surface, or only pubescent in the vein axils [8]

8. Leaf blade about as wide as long, or slightly longer than wide ... *Q. arkansana*
8. Leaf blades 1.5-2.5 times longer than wide ... *Q. nigra*
9. Mature leaf blades finely and densely tomentose on the lower surface [10]
9. Mature leaf blades glabrous to pubescent with scattered, spaced hairs, only densely pubescent in the vein axils on the lower surface or only densely pubescent with reddish hairs on young blades [11]
10. Trees, usually more than 2 m tall when mature; rays of stellate hairs to 0.3 mm long on stems; leaf blade apex rounded ... *Q. incana*
10. Shrubs, usually less than 2 m tall when mature; rays of stellate hairs to 0.7 mm long on stems; leaf blade apex acute ... *Q. pumila*
11. Leaf blades about 1-2 times as long as wide, revolute at least on the margins [12]
11. Leaf blades about 2-7 times as long as wide, not conspicuously revolute [13]
12. Leaf blades strongly revolute, often with yellow to reddish scurfy pubescence, elliptic to broadly elliptic, ca. 2 times longer than broad ... *Q. inopina*
12. Leaf blades finely revolute only on the margins, usually without yellow to reddish pubescence, obovate to broadly elliptic, often less than 2 times longer than broad ... *Q. myrtifolia*
13. Leaf blades 3.5-7 times as long as wide ... *Q. phellos*
13. Leaf blades 2-4 times as long as wide [14]
14. Twigs often grayish; leaves essentially evergreen, blades 3.5-5.5 cm long, 0.7-1.6 cm wide, the base obtuse to rounded with the basal angle 94-244 degrees, the apex acute to acuminate with the apical angle 49-153 degrees, coriaceous, lustrous, often dentate, slightly revolute, opaque, essentially glabrous, venation more prominent on the upper surface, petiole 0.7-1.8 mm, twigs grayish; mostly of drier sites ... *Q. hemisphaerica*
14. Twigs often reddish; leaves tardily deciduous, blades 6.5-8.8 cm long, 1.8-2.6 cm wide, the base attenuate to cuneate with the basal angle 20-130 degrees, the apex obtuse to rounded with the apical angle 144-213 degrees, moderately coriaceous, moderately lustrous, never dentate, not revolute, translucent, venation more prominent on the lower surface, twigs reddish tinted; mostly of wetter site ... *Q. laurifolia*

Key B: white oaks

1. Leaf blades mostly deeply lobed, the sinuses  $\frac{1}{3}$  or more as long as the distance from the midrib to the leaf blade margin [2]
1. Leaf blades mostly entire to shallowly lobed, the sinuses  $\frac{1}{3}$  or less as long as the distance from the midrib to the leaf blade margin [6]
2. Leaf blades glabrous and whitish on the lower surface ... *Q. alba*
2. Leaf blades pubescent on the lower surface (at least in the veins axils) and not whitish [3]
3. Lobes of leaf blades mostly acute and mucronate ... *Q. lyrata*
3. Lobes of leaf blades mostly rounded, scarcely or not mucronate [4]
4. Mature leaf blades glabrous to glabrate on the lower surface ... *Q. austrina*
4. Mature leaf blades densely to sparsely pubescent on the lower surface [5]
5. Young twigs glabrous to sparsely pubescent; larger leaf blades mostly 9 cm long or less, the stellate hairs of the lower surface with 2-6 rays ... *Q. margarettae*
5. Young twigs densely pubescent; larger leaf blades mostly 10 cm long or more, the stellate hairs of the lower surface with 6-10 rays ... *Q. stellata*
6. Leaf blades with 10 or more teeth or shallow lobes at the terminus of nearly straight secondary veins along each side [7]
6. Leaf blades entire or with few lobes, the secondary veins irregular and branching [9]

7. Shrubs, usually less than 5 m tall when mature; leaf blades mostly with 3-8 secondary veins on each side of the midrib ... *Q. prinoides*
7. Trees, taller than 5 m when mature; leaf blades with 8-20 secondary veins on each side of the midrib [8]
8. Larger leaf blades 12-28 cm long, the teeth usually rounded, secondary veins 15-20 on each side, with 1-4-rayed stellate hairs on the lower surface; nut 2.5-3.5 cm long ... *Q. michauxii*
8. Larger leaf blades 10-18 cm long, the teeth mostly acute, secondary veins 9-15 on each side, with 6-10-rayed stellate hairs on the lower surface; nut 1.5-2.3 cm long ... *Q. muehlenbergii*
9. Mature leaf blades pubescent on the lower surface with yellow to reddish hairs and only sparsely stellate, the blade shape somewhat obovate, broader towards the apex to faintly 3-lobed at the apex ... *Q. chapmanii*
9. Mature leaf blades densely tomentose with stellate hairs on the lower surface, the blade shape mostly elliptic, sometimes slightly broader towards the apex, sometimes shallowly lobed along the margin (section *Virentes*) [10]
10. Shrubs, usually 1.5 m tall or less when mature ... *Q. minima*
10. Trees, usually 3 m tall or more when mature [11]
11. Leaf blade margins strongly revolute; secondary veins impressed on the upper leaf blade surface; many rays of the stellate hairs spreading to ascending above the surface and not appressed, only some stellate hairs appressed ... *Q. geminata*
11. Leaf blade margins flat to slightly revolute; secondary veins flat to inconspicuously impressed on the upper leaf blade surface; all rays of the stellate hairs closely appressed to the lower leaf blade surface ... *Q. virginiana*

^ *Quercus acutissima* Carruth—

***Quercus alba*** L.— {AFP}

***Quercus arkansana*** Sarg.— {AFP} State Threatened.

***Quercus austrina*** Small— {AFP}

***Quercus chapmanii*** Sarg.— {AFP}

***Quercus falcata*** Michx.— {AFP}

***Quercus geminata*** Small— {AFP}

^ *Quercus glauca* Thunb.—

***Quercus hemisphaerica*** W.Bartram ex Willd.—Perhaps not as easily separable from *Q. laurifolia* as often made out to be. Numerous specimens appear intermediate and morphotypes of *Q. hemisphaerica* can be found in unequivocal swamp habitat. Hunt (1991:200) felt that it was the "most difficult pair of taxa to assess" and that "It is possible that widespread introgression occurs".

***Quercus incana*** W.Bartram— {AFP}

***Quercus inopina*** Ashe— {AFP} Endemic.

***Quercus laevis*** Walter— {AFP}

***Quercus laurifolia*** Michx.— {AFP}

***Quercus lyrata*** Walter— {AFP}

***Quercus margarettae*** Ashe ex Small— {AFP}

***Quercus marilandica*** Münchh.— {AFP}

***Quercus michauxii*** Nutt.— {AFP}

***Quercus minima*** (Sarg.)Small— {AFP}

***Quercus muehlenbergii*** Engelm.— {AFP}

***Quercus myrtifolia*** Willd.— {AFP}

***Quercus nigra*** L.— {AFP}

***Quercus pagoda*** Raf.— {AFP}

*Quercus phellos* L.— {AFP}  
*Quercus prinoides* Willd.— {AFP}  
*Quercus pumila* Walter— {AFP}  
*Quercus shumardii* Buckley— {AFP}  
*Quercus stellata* Wangenh.— {AFP}  
*Quercus velutina* Lam.— {AFP}  
*Quercus virginiana* Mill.— {AFP}

Named oak hybrids

*Quercus* × *ashei* Little— {AFP}  
*Quercus* × *atlantica* Ashe— {AFP}  
*Quercus* × *beadleii* Trel. ex E.J.Palmer— {AFP}  
*Quercus* × *caduca* Trel.— {AFP}  
*Quercus* × *comptoniae* Sarg.— {AFP}  
*Quercus* × *harbisonii* Sarg.— {AFP}  
*Quercus* × *mellichampii* Trel. ex Sarg.— {AFP}  
*Quercus* × *neopalmeri* Sudw. ex E.J.Palmer— {AFP}  
*Quercus* × *oviedoensis* Sarg.— {AFP}  
*Quercus* × *rolfsii* Small— {AFP}  
*Quercus* × *rudkinii* Britton— {AFP}  
*Quercus* × *subintegra* (Engelm.)Trel.— {AFP}  
*Quercus* × *succulenta* Small— {AFP}  
*Quercus* × *venulosa* Ashe— {AFP}  
*Quercus* × *walteriana* Ashe— {AFP}

## BETULACEAE {AFP}

1. Winter buds stalked; leaf blade broadly elliptic to obovate; female inflorescence persistent, woody and cone-like ... *Alnus serrulata*
1. Winter buds sessile; leaf blade narrowly elliptic, narrowly ovate, lanceolate, to rhombic-ovate; female inflorescence deciduous, not woody nor cone-like [2]
2. Bark of trunk becoming platy and cracking, often exfoliating and peeling away from the sides in large plates, becoming adherent and platy on old trunks; winter buds of few scales; petioles tomentose; leaf blades deltoid-ovate to elliptic-ovate ... *Betula nigra*
2. Bark not as above; winter buds of several imbricate scales; petioles glabrate; leaf blades elliptic to lanceolate [3]
3. Trunk angular or fluted; bark smooth; leaf blade underside with tufts of trichomes in the vein axils; fruit subtended by a 3-lobed foliaceous bract ... *Carpinus caroliniana*
3. Trunk terete; bark of platy longitudinal strips, sometimes peeling away; leaf blade underside puberulent; fruit enclosed in an inflated papery bract ... *Ostrya virginiana*

## *Alnus* {AFP}

*Alnus serrulata* (Aiton)Willd.— {AFP}

## *Betula* {AFP}

*Betula nigra* L.— {AFP}

## *Carpinus* {AFP}

*Carpinus caroliniana* Walter— {AFP}



## **Ostrya** {AFP}

***Ostrya virginiana*** (Mill.)K.Koch— {AFP}

## **CASUARINACEAE** {AFP}

### **Casuarina** {AFP}

1. Plant with both female and male inflorescences; scale-like leaves 6-8 per node, without a brown transverse band ... *C. equisetifolia*

1. Plant dioecious; scale-like leaves 7-14(-17) per node, with a brown transverse band [2]

2. Green leafy branchlets 0.4-0.7 mm wide; scale-like leaves (7-)8-10 per node, the brown transverse band above the leaf base; lateral staminate bracteoles subequal to the dehiscent inner ones, visible at anthesis ... *C. cunninghamiana*

2. Green leafy branchlets 0.8-1 mm wide; scale-like leaves 10-17 per node, the brown transverse band at the leaf base; lateral staminate bracteoles shorter than the dehiscent ones, not apparent at anthesis ... *C. glauca*

\****Casuarina cunninghamiana*** Miq.— {AFP}

\****Casuarina equisetifolia*** L.— {AFP}

\****Casuarina glauca*** Sieb. ex Spreng.— {AFP}

## **JUGLANDACEAE** {AFP}

1. Twigs with solid and homogeneous pith; terminal leaflet largest; staminate catkins in fasciculate; stamens 3-10(-15) per flower; fruit husk dehiscent into 4 valves; nuts smooth, verrucose, or rugulose ... *Carya*

1. Twigs with chambered pith; terminal leaflet small or absent; staminate catkins solitary; stamens 7-50 per flower; fruit husk indehiscent; nuts grooved, ridged, furrowed, or smooth ...  
*Juglans*

### **Carya** {AFP}

1. Bud scales valvate; leaflets 5-13(17) (sect. *Apocarya*) [2]

1. Bud scales imbricate; leaflets 3-9; (sect. *Carya*) [4]

2. Lateral buds with paired lateral prophylls; leaflets 5-9(11), the underside with peltate scales, concentrated near margins of base and apex on fall specimens; fruit husks dehiscent to middle or slightly below; nuts rugulose ... *C. cordiformis*

2. Lateral buds with saclike prophyll; leaflets (5)9-13(17), the underside with peltate scales mainly lost by fall or at least not concentrated near margins of base and apex; fruit husks dehiscent to base; nuts smooth or verrucose [3]

3. Bark exfoliating in long strips or platelike scales; lateral petiolules 0-2 mm; leaflets (5)9-11(13), margins serrate to entire, the midrib villous near base above; nuts compressed, angled, verrucose; seeds bitter ... *C. aquatica*

3. Bark ridged or with appressed scales or exfoliating with small platelike scales; lateral petiolules 0-7 mm; leaflets (7)9-13(17), margins serrate, the midrib mostly glabrous above, rarely hirsute near base; nuts not compressed, not angled, smooth; seeds sweet ... *C.*

*illinoensis*

4. Leaflets (5)7-9(11), the underside hirsute, with abundant unicellular, fasciculate, and multiradiate hairs; husks 4-13 mm thick; nuts strongly angled toward the apex ... *C. tomentosa*

4. Leaflets 3–7(9), the underside glabrous except near midrib, occasionally hirsute with unicellular and fasciculate hairs; husks 2–5 mm thick; nuts not strongly angled toward the apex [5]

5. Leaflets (5–)7(9), the underside glabrate, with a dense covering of small 4-lobed, irregular, and round peltate scales in spring and the midrib hirsute near the base ... *C. pallida*

5. Leaflets 3–7(9), the underside with hairs in the vein axils, with a sparse to dense covering of small irregular and round peltate scales in spring, 4-lobed scales uncommon, and the midrib glabrate [6]

6. Young tissues densely golden to rusty brown lepidote ... *C. floridana*

6. Young tissues sparsely tan, reddish, to dark brown lepidote ... *C. glabra*

***Carya aquatica*** (F.Michx.)Nutt.— {AFP}

***Carya cordiformis*** (Wangenh.)K.Koch— {AFP}

***Carya floridana*** Sarg.— {AFP} Endemic.

***Carya glabra*** (Mill.)Sweet— {AFP}

^ ***Carya illinoensis*** (Wangenh.)K.Koch— {AFP}

***Carya pallida*** (Ashe)Engl. & Graebn.— {AFP}

***Carya tomentosa*** Nutt.— {AFP}

**Juglans** {AFP}

***Juglans nigra*** L.— {AFP}

**MYRICACEAE** {AFP}

**Morella** {AFP}

1. Leaf blade entire (very rarely toothed), glabrous to glabrate, glands clear to white, lacking odor when crushed; stamens (3-)6-10; fruit 4-8 mm long, densely pubescent ... *M. inodora*

1. Leaf blade entire to toothed, pilose, glands yellow to orange, aromatic when crushed; stamens 3–5(–7); fruit 2-4.5 mm long, glabrous [2]

2. Leaf blade gland-dotted only on the underside, larger blades often >2 cm wide, mostly 2-4 times longer than wide; inflorescence bracts eglandular to sparsely glandular, at the least the basal ones, sometimes the distal bracts densely glandular ... *M. caroliniensis*

2. Leaf blade gland-dotted on both surfaces, usually <2(3.3) cm wide, mostly 3-6 times longer than wide; inflorescence bracts densely glandular [3]

3. Not colonial or sparingly colonial, fertile at (1.5)2-7 m tall; basal part of main stem 1.2-50 cm wide; leaves of fertile part of stem (1.5)2.5-10.5(13), 0.4-3.3 cm wide, the teeth and tips often acute, surfaces densely glandular and often green to dark green (browning when dry); of mesic to hydric sites ... *M. cerifera*

3. Colonial, <1 m tall; basal part of main stem 0.5-1.0 cm wide; leaves of fertile part of stem 1.5-3.5(5) cm long, 0.3-1.0(1.3) cm wide, the teeth and tips often bluntly acute to rounded-obtuse, surfaces very densely glandular and often yellowish to green (browning when dry); of xeric to xeric-mesic sites ... *M. pusilla*

***Morella caroliniensis*** (Mill.)Small— {AFP}

***Morella cerifera*** (L.)Small— {AFP}

***Morella inodora*** (W. Bartram)Small— {AFP}

***Morella pusilla*** (Raf.)Weakley & D.B. Poind.— {AFP}

**CUCURBITALES**

## BEGONIACEAE {AFP}

### Begonia {AFP}

1. Plant glabrous to sparsely hairy ... *B. cucullata*
1. Plant brownish villous ... *B. hirtella*

^ *Begonia coccinea* Hook.—

\* ***Begonia cucullata*** Willd.— {AFP}

^ *Begonia heracleifolia* Schltld. & Cham.—

^ *Begonia hirtella* Link— {AFP}

^ *Begonia maculata* Raddi—

^ *Begonia nelumbiifolia* Schltld. & Cham.—

^ *Begonia obliqua* L.—

^ *Begonia rex* Putz.—

^ *Begonia semperflorens* Hook.—

## CUCURBITACEAE {AFP}

1. Fruit 1-2.5 cm long [2]

1. Fruit 2.5-50 cm long [3]

2. Tendrils unbranched or branched; leaf blades mostly 5-15 cm long, the central lobe with 5-15 minute teeth per side; corolla white to green; staminate flowers solitary; fruit brown, orange, to red; seeds dark brown to black, 1-12 per fruit ... *Cayaponia*

2. Tendrils unbranched; leaf blades mostly 2-6 cm long, the central with 2-6 minute or shallow teeth per side; corolla yellow; staminate flowers 2-6 in a corymboid cluster or raceme; fruit green to black; seeds white, 30-60 per fruit ... *Melothria pendula*

3. Tendrils unbranched (rarely branched) [4]

3. Tendrils branched (rarely unbranched) [6]

4. Plant hispid to setose ... *Cucumis*

4. Plant glabrous to sparsely pubescent [5]

5. Plant dioecious; leaf blades with 3-8 glands along each side of the midrib near the base of the underside, shallowly lobed, the sinuses  $< \frac{1}{2}$  the blade length; corolla white; fruit red, smooth, indehiscent ... *Coccinia grandis*

5. Plant monoecious; leaf blades eglandular, deeply lobed, the sinuses  $> \frac{1}{2}$  the blade length; corolla yellow; fruit yellow-orange to orange-red, muricate or tuberculate, dehiscent ... *Momordica*

6. Leaf blade with the central lobe pinnately lobed ... *Citrullus lanatus*

6. Leaf blade only palmately lobed [7]

7. Stems stipitate-glandular ... *Sicyos angulatus*

7. Stems eglandular or with sessile glands [8]

8. Corolla margin fimbriate ... *Trichosanthes cucumerina*

8. Corolla margin entire to toothed [9]

9. Staminate flowers solitary [10]

9. Staminate flowers several in a raceme [11]

10. Tendrils 2- to 7-fid; petiole eglandular or with numerous stipitate glands; corolla yellow to white and yellowish towards the base, lobed to only about the middle or less ... *Cucurbita*

10. Tendrils 2-fid; petiole with a pair of prominent glands at the apex; corolla white (greenish at the very base), deeply lobed with only the very base connate ... *Lagenaria siceraria*

11. Corolla yellow (rarely pale yellow), the lobes  $< 1$  cm long; fruit cylindrical, with 100-300 seeds ... *Luffa aegyptiaca*

11. Corolla white to pale yellow, the lobes 1.5-5 cm long; fruit globose to pyriform, with 1 seed ...  
*Sicyos edule*

### **Cayaponia {AFP}**

1. Petiole glabrous; fruiting peduncles 8–15(–30) mm ... *C. americana*

1. Petiole villous and glandular; fruiting peduncles 1–4 mm ... *C. quinqueloba*

***Cayaponia americana*** (Lam.)Cogn.— {AFP}

***Cayaponia quinqueloba*** (Raf.)Shinners— {AFP}

### **Citrullus {AFP}**

^ *Citrullus lanatus* (Thunb.)Matsum. & Nakai— {AFP}

### **Coccinia {AFP}**

\****Coccinia grandis*** (L.)Voigt— {AFP}

### **Cucumis {AFP}**

1. Fruit smooth [2]

1. Fruit prickly to hispid [3]

2. Leaf lobes elliptic or oblong to ovate; staminate flowers: corolla tube 0.8–2 mm; pistillate flowers: corolla tube 1–1.6(–3) mm ... *C. melo*

2. Leaf lobes triangular; staminate flowers: corolla tube 3.5–5(–6) mm; pistillate flowers: corolla tube 3.5–6.5 mm ... *C. sativus*

3. Plants dioecious; leaf blade often deeply lobed; pedicels of pistillate flowers distally dilated; staminate flowers 3–10 in racemes ... *C. anguria*

3. Plants monoecious; leaf blade shallowly lobed; pedicels of pistillate flowers not distally dilated; staminate flowers 1–7, usually in fascicles or panicles, rarely racemes [4]

4. Fruit with prickles 0.5-1.5 cm long ... *C. metulifer*

4. Fruit hispid or minutely prickly, sometimes smooth ... *C. sativus*

\****Cucumis anguria*** L.— {AFP}

\****Cucumis melo*** L.— {AFP}

^ *Cucumis metulifer* E.Meyer ex Naudin— {AFP}

^ *Cucumis sativus* L.— {AFP}

### **Cucurbita {AFP}**

1. Petiole stipitate-glandular; leaf blade deltoid, longer than wide ... *C. foetidissima*

1. Petiole eglandular; leaf blade suborbicular to ovate, about as wide as long [2]

2. Corolla cream; calyx lobes 0.5-0.8 cm long ... *C. okeechobeensis*

2. Corolla bright yellow to orange; calyx lobes 0.8-4 cm long [3]

3. Stems villous-hirsute with a mixture of longer, thick, vitreous hairs with conspicuous cross-walls and puberulent understory of much shorter hairs, without pustulate-based hairs... *C. moschata*

3. Stems puberulent, hirsutulous, to hispid, with or without pustulate-based hairs [4]

4. Stems densely puberulent to hirsutulous, scattered longer hairs with strongly to weakly pustulate bases absent or present ... *C. melopepo*

4. Stems hispid with persistent, strongly pustulate-based hairs and hispidulous-hirsutulous understory ... *C. pepo*

^ *Cucurbita foetidissima* Kunth— {AFP}

^ *Cucurbita moschata* Duchesne— {AFP} Cultivated by indigenous groups (Andres 2004).

^ *Cucurbita melopepo* L.—Cultivated by indigenous groups (Newsom et al. 1993, as *C. pepo* subsp. *ovifera* and subsp. *texana*).

***Cucurbita okeechobeensis*** (Small) L.H.Bailey— {AFP} Federally Endangered. State Endangered. Nearly endemic. St. Johns River and Lake Okeechobee (also vouchered in Dominican Republic, K, NY).

^ *Cucurbita pepo* L. —

## Lagenaria {AFP}

^ *Lagenaria siceraria* (Molina) Standl.— {AFP} This plant was identified in archaeological remains in Florida indicating indigenous cultivation and use (Hutchinson et al. 2016). American cultivars are apparently derived from African lineages, and perhaps were first introduced to the Americas from Africa by oceanic currents (Kistler et al. 2014; Domic et al. 2024).

## Luffa {AFP}

1. Fruit 15-30 cm long, smooth ... *L. aegyptiaca*

1. Fruit 4-8 cm long, prickly ... *L. quinquefida*

\* *Luffa aegyptiaca* Mill.— {AFP}

\* *Luffa quinquefida* (Hook. & Arn.) Seem.— {AFP}

## Melothria {AFP}

***Melothria pendula*** L.— {AFP}

## Momordica {AFP}

1. Primary lobes of the leaf blade each often with large teeth or lobes that create a discernible sinus (apart from the sinus between the primary blade lobes); bract of staminate flower near the peduncle apex, <8 mm from the flower, usually denticulate ... *M. balsamina*

1. Primary lobes of the leaf blade each with shallow teeth or broad lobes that do not create a discernible sinus; bract of the staminate flower near the middle of the peduncle, >8 mm from the flower, entire [2]

2. Fruit 2-7 cm long, 1.4-2 cm wide; seeds 5-9 mm long, 2.5-6 mm wide (wild form) ... *M. charantia* var. *abbreviata*

2. Fruit 10-35 cm long, 4-8 cm wide; seeds 10-16 mm long, 7-10 mm wide (domesticated form) ... *M. charantia* var. *charantia*

\* *Momordica balsamina* L.— {AFP}

\* *Momordica charantia* L.— {AFP}

## Sicyos {AFP}

1. Stems stipite-glandular; fruit prickly ... *S. angulatus*

1. Stems eglandular; fruit smooth ... *S. edulis*

***Sicyos angulatus*** L.— {AFP}

^ *Sicyos edulis* Jacq.— {AFP}

## Trichosanthes {AFP}

\**Trichosanthes cucumerina* L.— {AFP}

## ROSALES

### ROSACEAE {AFP}

1. Herb [2]
1. Vine, shrub, or tree [6]
2. Leaves simple, the blade palmately lobed ... Aphanes
2. Leaves compound with 3 or more leaflets [3]
3. Leaves 3-foliolate; fruit succulent and red, with several attached achenes [4]
3. Leaves usually with more than 3 leaflets; fruit dry, of several achenes [5]
4. Stolons not leafy; flowers arising from leaf rosette; petals white ... Fragaria
4. Stolons leafy; flowers arising from the stolons; petals yellow ... *Potentilla indica*
5. Leaves pinnately compound; achenes 2 per fruit, surrounded by a hypanthium with hooked bristles ... *Agrimonia*
5. Leaves palmately compound; achenes several per fruit, inserted on an enlarged receptacle ... *Potentilla*
6. Stems usually armed with prickles; leaves compound [7]
6. Stems without prickles, sometimes with thorns; leaves simple [8]
7. Lateral veins of leaflet underside usually obscure or scarcely pronounced; fruit with a smooth, continuous surface formed from the hypanthium, fleshy, encasing the achenes ... *Rosa*
7. Lateral veins of leaflet underside pronounced and obvious; fruit an aggregate of individual succulent drupes, all attached to the central receptacle ... *Rubus*
8. Glandular, reddish to dark trichomes present along the midrib of the leaf blade upper surface ... *Aronia*
8. Without glandular trichomes along the midrib of the leaf blade upper surface [9]
9. Young tissues with stellate hairs; leaf blade palmately 3(-5)-veined at the base, the veins generally arising at the blade and petiole junction ... *Physocarpus*
9. Stellate hairs lacking; leaf blade not palmately veined at the base, principal lateral veins usually borne on the blade above the petiole [10]
10. Leaf blades mostly 12-30 cm long; seeds 13-18 mm long ... *Eriobotrya*
10. Leaf blades mostly 1.5-13 cm long; seeds <10 mm long [11]
11. Leaf blade ovate, deltoid, spatulate, to obovate, sometimes lobed, coarsely toothed (sometimes only in the upper half) [12]
11. Leaf blade oblong, spatulate, broadly ovate, to lanceolate, unlobed, finely toothed to entire or coarsely prickly (if coarsely toothed, then the blade ovate to lanceolate) [13]
12. Plant sometimes with branched thorns; stems mostly not glaucous; endocarp hard and bony, separating with difficulty from the seed ... *Crataegus*
12. Plant without thorns or with unbranched thorns; stems glaucous; endocarp cartilaginous to membranaceous, easily separated from the seed ... *Malus angustifolia*
13. Leaf blade oblong, narrowly elliptic, to spatulate ... *Pyracantha*
13. Leaf blade broadly ovate to narrowly lanceolate [14]
14. Leaf blade generally broadly ovate, 0.8-1.6 times longer than wide ... *Pyrus*
14. Leaf blade ovate, narrowly lanceolate, to lanceolate, 1.5-3 times longer than wide [15]
15. Leaf blade entire to coarsely toothed or lobate [16]
15. Leaf blade finely toothed [17]
16. Larger leaf blades to 5.2 cm long, to 2.6 cm wide, entire to coarsely toothed ... *Malus angustifolia*

- 16. Larger leaf blades 5-10 cm long, 2-4 cm wide, entire to coarsely prickly ... Prunus
- 17. Leaf blade base mostly broadly rounded, truncate, to cordate ... Amelanchier arborea
- 17. Leaf blade base mostly acute [18]
- 18. Leaf blade entire, prickly, serrate-dentate, to finely sharply serrate; style 1 per flower; ovary superior; fruit a drupe ... Prunus
- 18. Leaf blade crenate-dentate; styles 5 per flower; ovary inferior; fruit a pome ... Photinia ×fraseri

### Agrimonia {AFP}

- 1. Terminal leaflet of larger leaves with 6-7 teeth per side, 2-3.5 cm long; lower leaf surface and hypanthium with sessile, amber glands ... A. incisa
- 1. Terminal leaflet of larger leaves with 8-12 teeth per side, 3-7.5 cm long; lower leaf surface and hypanthium eglandular ... A. microcarpa

**Agrimonia incisa** Torr. & A.Gray— {AFP} State Threatened.

**Agrimonia microcarpa** Wallr.— {AFP}

### Amelanchier {AFP}

**Amelanchier arborea** (F.Michx.)Fernald— {AFP}

### Aphanes {AFP}

\***Aphanes australis** Rydb.— {AFP}

### Aronia {AFP}

**Aronia arbutifolia** (L.)Pers.— {AFP}

**Crataegus** {AFP} This treatment mostly follows Ward (2009). The FNA treatment recognized 169 species in the USA and Canada, and 41 species in Florida. *Quercus* (with ca. 27 native species) would seem more speciose than *Crataegus* in Florida.

- 1. Proximal vein axils of leaf blade undersides cavernous, forming pubescent (rarely glabrate) pockets (domatia) [2]
- 1. Proximal vein axils of leaf blades undersides flush with the rest of the blade, glabrous (midrib and secondary veins sometimes sparsely pilose) [8]
- 2. Leaf blades mostly dentate to serrate, the teeth generally triangular, the blades mostly (3)4-7 cm long [3]
- 2. Leaf blades mostly subentire to crenate, the teeth generally rounded, the blades mostly 1-5 cm long [5]
- 3. Leaf blade underside glabrescent except for pubescence around domatia; pedicels 5-15 mm long; fruits 5-8 mm wide ... C. viridis
- 3. Leaf blade underside midribs and veins densely rufous-pubescent; pedicels 0-3 mm long; fruits (8)12-15 mm wide [4]
- 4. Leaf blade elliptic to broadly elliptic, lateral veins 5-9 per side; pedicels glabrate; fruits 12-15 mm wide ... C. opaca
- 4. Leaf blade broadly elliptic to obovate; lateral veins 3-5 per side; pedicels rufous-pubescent; fruits 10-12 mm wide ... C. rufula
- 5. Leaf blade upperside glabrous to scabridulous, underside midribs and veins sparsely strigose, sparsely pubescent, to glabrous except for pale pubescence around domatia; leaf blade and

- bracteole marginal glands obscure; fruits 8-20 mm wide; of hydric to mesic-hydric areas ... *C. aestivalis*
5. Leaf blade upperside and underside sparsely strigose to densely pubescent; fruits (5)6-12(15) mm wide; of xeric to mesic-xeric areas [6]
6. Leaf blade margins without glands or these obscure ... *C. uniflora*
6. Leaf blade and bracteole marginal glands usually prominent [7]
7. Branches weeping or pendent; leaf blade narrowly spatulate (sometimes broader on young shoots) ... *C. michauxii* var. *lacrimata*
7. Branches spreading, not pendent; leaf blade broadly spatulate to obovate ... *C. michauxii* var. *michauxii*
8. Leaf blades broadest near the base [9]
8. Leaf blades broadest above the middle [11]
9. Leaf blades pinnately dissected-lobed, sinuses nearly reaching midrib ... *C. marshallii*
9. Leaf blades shallowly lobed, sinus less than halfway to midrib [10]
10. Leaf blades with 2 lateral lobes, the lobe tips acuminate; ovary 4-5 mm wide, fruits 8-10 mm wide ... *C. phaenopyrum*
10. Leaf blades weakly lobed, the lobe tips acute; ovary 2-3 mm wide, fruits 4-5 mm wide ... *C. flava*
11. Pedicels 1-3 mm long; sepals often coarsely dentate with teeth >0.5 mm long ... *C. uniflora*
11. Pedicels (4)8-25 mm long; sepals entire to weakly dentate with teeth <0.5 mm long [12]
12. Pedicel pubescent; sepals narrowly acute, 3-4 mm long; fruit >4 mm wide ... *C. crusgalli*
12. Pedicel glabrous; sepals deltoid, 1-2 mm long; fruit 3-4 mm wide ... *C. spathulata*

***Crataegus aestivalis*** (Walter)Torr. & A.Gray— {AFP}

***Crataegus crus-galli*** L.— {AFP}

***Crataegus flava*** Aiton— {AFP}

***Crataegus marshallii*** Ettl.— {AFP}

***Crataegus michauxii*** Pers.— {AFP}

***Crataegus opaca*** Hook. & Arn.— {AFP}

***Crataegus phaenopyrum*** (L.f.)Medik.— {AFP} State Endangered.

***Crataegus rufula*** Sarg.—

***Crataegus spathulata*** Michx.— {AFP}

***Crataegus uniflora*** Münchh.— {AFP}

***Crataegus viridis*** L.— {AFP}

**Eriobotrya** {AFP}

\****Eriobotrya japonica*** (Thunb.)Lindl.— {AFP}

**Fragaria** {AFP}

1. Leaflets dark green to bluish green, slightly glaucous, sometimes dull; achenes in shallow pits or embedded, dark reddish brown to dark brown, 1.4–2 mm ... *F. ×ananassa*

1. Leaflets usually dark green to slightly bluish green, sometimes bright green, not glaucous; achenes usually deeply embedded, rarely in pits or superficial, yellowish green to reddish brown, 1.2–1.8 mm ... *F. virginiana* subsp. *virginiana*

^ *Fragaria ×ananassa* (Duchesne ex Weston)Duchesne ex Rozier—

***Fragaria virginiana*** Duchesne subsp. *virginiana*— {AFP}



## Malus {AFP}

**Malus angustifolia** (Aiton)Michx.— {AFP} State Threatened.

## Photinia

^ *Photinia × fraseri* Dress— {AFP}

## Physocarpus {AFP}

**Physocarpus opulifolius** (L.)Maxim.— {AFP} State Endangered.

## Potentilla {AFP}

1. Leaves mostly 3-foliolate; mature fruit red and succulent ... *P. indica*
1. Leaves mostly 5-7-foliolate; mature fruit green to brown, mostly dry [2]
2. Stem erect; leaflets linear-oblongate, toothed nearly throughout ... *P. recta*
2. Stem prostrate to erect; leaflets obovate, toothed in the upper two-thirds [3]
3. Plant primarily stoloniferous; larger leaflets 1-2 cm long ... *P. reptans*
3. Plant primarily rhizomatous; larger leaflets 2-5 cm long ... *P. simplex*

\***Potentilla indica** (Andrews)T.Wolf— {AFP}

\***Potentilla recta** L.— {AFP}

\***Potentilla reptans** L.— {AFP}

**Potentilla simplex** Michx.— {AFP}

## Prunus {AFP}

1. Petiole lacking conspicuous glands; leaves evergreen, the blades entire, undulate, to prickly [2]
1. Petiole eglandular or with conspicuous glands near the apex; leaves deciduous, the blades serrate [3]
2. Petiole mostly 3-8 mm long, often reddish; leaf blades entire to prickly, with apparent cherry odor when crushed; fruit ovoid ... *P. caroliniana*
2. Petiole mostly 6-13 mm long, usually green; leaf blades entire, cherry odor not evident when crushed; fruit globose ... *P. myrtifolia*
3. Stem zigzagged; leaf blades 0.5-2.5 cm long ... *P. geniculata*
3. Stems not zigzagged or only scarcely so; leaf blades mostly 3-12 cm long [4]
4. Leaf blade underside glabrous to densely reddish tomentose along the midrib; flowers typically 10-40 in a raceme ... *P. serotina*
4. Leaf blade underside glabrous to pale pubescent along the veins; flowers 1-6 in umbellate fascicles [5]
5. Pedicel 0-3 mm long; ovary and fruit densely pubescent ... *P. persica*
5. Pedicel (3-)5-50 mm long; ovary and fruit glabrous [6]
6. Flowers 8-20 mm wide [7]
6. Flowers 20-30 mm wide [8]
7. Leaf blade teeth with a deciduous gland leaving a callus thickening; ripe fruit yellow to red ... *P. angustifolia*
7. Leaf blade teeth eglandular; fruit yellow to red to darker blue ... *P. umbellata*
8. Pedicels glabrous; sepals green to brownish; fruit yellow to red; stone with evident circumferential edge ... *P. americana*
8. Pedicels pubescent; sepals pink to purplish; fruit red to blackish; stone lacking an evident edge ... *P. subhirtella*

***Prunus americana*** Marshall— {AFP}

***Prunus angustifolia*** Marshall— {AFP}

***Prunus caroliniana*** (Mill.)Aiton— {AFP}

***Prunus geniculata*** R.M.Harper— {AFP} Endemic. Federally Endangered. State Endangered.

***Prunus myrtifolia*** (L.)Urb.— {AFP} State Threatened.

^ ***Prunus persica*** (L.)Batsch— {AFP}

***Prunus serotina*** Ehrh.— {AFP}

\****Prunus subhirtella*** Miq.— {AFP}

***Prunus umbellata*** Elliott— {AFP}

## **Pyracantha** {AFP}

1. Leaf blade margins on most or all leaves conspicuously toothed along most of the margin (below the middle to the distal end), apices mostly acute or obtuse to rounded or truncate, rarely retuse ... *P. fortuneana*

1. Leaf blade margins mostly entire, sometimes with a few teeth near the distal end, apices rounded to truncate, usually retuse ... *P. koidzumii*

\****Pyracantha fortuneana*** (Maxim.)H.L.Li— {AFP}

\****Pyracantha koidzumii*** (Hayata)Rehder— {AFP}

## **Pyrus** {AFP}

1. Calyx lobes densely woolly-pubescent on the inner surface, deciduous in fruit; styles (2)3; fruit globular, brownish with white speckles, 1-1.5 cm long ... *P. calleryana*

1. Calyx lobes sparsely woolly-pubescent on the inner surface towards the base, persistent in fruit; styles 5; fruit pyriform, green to yellow to red, sometimes brownish, usually with darker speckles, 3-16 cm long ... *P. communis*

\****Pyrus calleryana*** Decne.— {AFP}

^ ***Pyrus communis*** L.— {AFP}

## **Rosa** {AFP}

1. Leaflets 3(5) per leaf [2]

1. Leaflets (3)5-9 per leaf [3]

2. Stipules adnate to the petiole for ½ or less of its length; petiole eglandular; leaflet margins with shallow teeth <0.7 mm long; petals white (sect. *Laevigatae*) ... *R. laevigata*

2. Stipules adnate to the petiole for most of its length; petiole glandular-hispid; leaflet margins with pronounced teeth, some >0.7 mm long; petals pink (sect. *Systylae*) ... *R. setigera*

3. Stipules pectinate, lacerate, or strongly toothed, persistent [4]

3. Stipules entire or shallowly toothed, sometimes caducous [6]

4. Stems tomentose, stipitate-glandular; stipules adnate to the petiole for ½ or less of its length; leaflets with shallow teeth, the terminal leaflet with a rounded apex ... *R. bracteata*

4. Stems glabrate to pubescent; stipules adnate to the petiole for most of its length; leaflets with conspicuous exserted teeth, the terminal leaflet usually with an acute or strongly toothed apex (sect. *Systylae*) [5]

5. Leaflets glabrous on the lower surface; style pubescent ... *R. luciaeae*

5. Leaflets pubescent to glabrate on the lower surface; style glabrous ... *R. multiflora*

- 6. Stipules adnate to the petiole for ½ or less of its length, sometimes caducous; petals white or yellow (sect. *Banksiae*) ... *R. banksiae*
- 6. Stipules adnate to the petiole for most of its length, persistent; petals variously colored, including white or yellow [7]
- 7. Native, wild species (sect. *Rosa*) [8]
- 7. Cultivated taxa (sect. *Chinensis*) [9]
- 8. Mature shrub often <1 m tall; stem with the major prickles straight and nearly perpendicular to the stem, often with smaller straight prickles also; stipule auricles flared; margins of larger leaflets with 8-14(18) teeth per side; of upland sites ... *R. carolina*
- 8. Mature shrub usually >1 m tall; stem with the major prickles recurved, lacking smaller straight prickles; stipule auricles erect, rarely flared; margins of larger leaflets with 16-30 teeth per side; of wetland areas ... *R. palustris*
- 9. Petals more than 5 (flowers double or more); complex cultivated hybrids ... *R. sect. Chinensis* complex
- 9. Petals 5 (flowers single); wild-type [10]
- 10. Shrub; stipules glandular-pubescent along margin; leaflets (3)5; flowers (1)4-5, slightly fragrant or not; sepals often pinnately lobed ... *R. chinensis* var. *spontanea*
- 10. Liana; stipules eglandular or only glandular at margin of free part; leaflets (3)5-9; flower 1-3, 5-10 cm wide, fragrant; sepals entire to slightly incised ... *R. odorata* var. *gigantea*

\**Rosa bracteata* J.C.Wendl.— {AFP}

*Rosa carolina* L.— {AFP}

^ *Rosa* sect. *Chinensis* complex—Widely cultivated with an intractable taxonomy at present.

\**Rosa laevigata* Michx.— {AFP}

\**Rosa lucieae* Franch. & Rochebr. ex Crép.— {AFP}

\**Rosa multiflora* Thunb.— {AFP}

*Rosa palustris* Marshall— {AFP}

*Rosa setigera* Michx.— {AFP}

## Rubus {AFP}

- 1. Leaves pinnately compound, the leaflets usually 5-7; petals pink ... *R. niveus*
- 1. Leaves palmately compound, the leaflets 3-5; petals white to pink [2]
- 2. Stem prostrate or trailing; leaflet surface usually glabrate or sometimes moderately pubescent below, the veins pubescent [3]
- 2. Stem erect, ascending, to arching; leaflet surface usually moderately to densely pubescent below, the veins pubescent [4]
- 3. Stem with prickles, without hispid-glandular trichomes; leaflets dull above; inflorescence with 1-3(-8) flowers; petals white ... *R. flagellaris*
- 3. Stem with prickles and usually with hispid glandular trichomes; leaflets lustrous above; inflorescence with 1(-3) flowers; petals white to pink ... *R. trivialis*
- 4. Leaflets pale green underneath, sericeous-pilose to sericeous-villous, the apex acute, the terminal leaflets ovate to lanceolate, 5–15 cm long, 3–13 cm wide ... *R. argutus*
- 4. Leaflets gray-white underneath, densely white-gray tomentose, the apex obtuse to rounded, the terminal leaflets cuneate to obovate, 2–6 cm long, 3–4 cm wide ... *R. cuneifolius*

*Rubus cuneifolius* Pursh— {AFP}

*Rubus flagellaris* Willd.— {AFP}

\**Rubus niveus* Thunb.— {AFP}

***Rubus pensilvanicus*** Poir.— {AFP}

***Rubus trivialis*** Michx.— {AFP}

## ELAEAGNACEAE {AFP}

### **Elaeagnus** {AFP}

1. Young stems with brown scales; leaves evergreen, the blade coriaceous, the underside with grayish white and brown scales; calyx with silvery and reddish brown scales; flowering usually fall-winter, fruiting usually spring-summer ... *E. pungens*

1. Young stems with silvery scales; leaves deciduous, the blade chartaceous, the underside with silvery (sometimes yellow) scales; calyx with silvery scales; flowering spring-summer, fruiting summer-fall ... *E. umbellata*

\****Elaeagnus pungens*** Thunb.— {AFP}

\****Elaeagnus umbellata*** Thunb.— {AFP}

## RHAMNACEAE {AFP}

1. Leaves mostly opposite to subopposite, sometimes some alternate [2]

1. Leaves all alternate [4]

2. Stems mostly lax to scandent and often thorny; leaf blades toothed along the margins; inconspicuous petals present and shorter than the sepals ... *Sageretia minutiflora*

2. Stems generally erect and without thorns; leaf blades entire (often notched at the apex); sepals present but petals lacking [3]

3. Bark becoming fissured and cracking; leaf blades chartaceous to subcoriaceous, with the lateral veins ascending-arcuate, the midrib light green and only lightly contrasting with the blade surface; sepals keeled ... *Krugiodendron ferreum*

3. Bark nearly smooth, only lightly fissured; leaf blades coriaceous, with the lateral veins nearly straight and ascending-perpendicular, the midrib white to pale yellow and strongly contrasting with the blade surface; sepals not keeled ... *Reynosia septentrionalis*

4. Vines, twining or with tendrils [5]

4. Shrubs (sometimes scandent) to trees [6]

5. Twining vine; leaf margins entire to undulate-crenate; fruit a drupe ... *Berchemia scandens*

5. Vine with tendrils; leaf margins with distinctly notched or protruding teeth; fruit a winged schizocarp ... *Gouania lupuloides*

6. Stems armed with thorns or stipular spines [7]

6. Stems unarmed [8]

7. Stems with axillary, often leafy thorns; leaf blades not trinerved, only with a midrib ... *Pseudoziziphus celata*

7. Stems often with stipular spines; leaf blades trinerved from the base ... *Ziziphus*

8. Leaf blades trinerved from the base, the veins reaching beyond mid-blade, the blade 0.1-6 cm long ... *Ceanothus*

8. Leaf blades pinnately veined or if appearing trinerved, the veins merging with the margin or evanescent by mid-blade, the blade mostly 4-16 cm long [9]

9. Leaf blade margin entire, obscurely crenulate to serrulate, to strongly serrate, sometimes glandular, glabrous to densely pubescent on the lower surface; inflorescence a thyrse; ovary semi-inferior; fruit leathery to dry, dehiscent ... *Colubrina*

9. Leaf blade margin obscurely crenulate to serrulate, eglandular, sparsely pubescent along the veins of the lower surface; inflorescence a corymbiform fascicle; ovary superior; fruit fleshy, indehiscent ... *Frangula caroliniana*

## Berchemia {AFP}

**Berchemia scandens** (Hill)K.Koch— {AFP}

## Ceanothus {AFP}

1. Leaf blades serrate to serrulate, mostly 20-100 mm long ... C. americanus

1. Leaf blades entire, mostly 1-5 mm long ... C. microphyllus

**Ceanothus americanus** L.— {AFP}

**Ceanothus microphyllus** Michx.— {AFP}

## Colubrina {AFP}

1. Leaf blade crenate-serrate, the secondary veins mostly 3-5 on each side of the midrib; seeds relatively dull, brown to brownish black ... C. asiatica

1. Leaf blade entire, the secondary veins mostly 5-12 on each side of the midrib; seeds lustrous, black [2]

2. Leaf blade secondary veins 6–12 on each side of the midrib, relatively straight to slightly curving, strongly impressed on the upper surface (the reticulate veins also often impressed); inflorescences 20–50(–70)-flowered; peduncles 8–15 mm long ... C. cubensis var. floridana

2. Leaf blade secondary veins 5–9 on each side of the midrib, moderately to strongly curving, generally flat with the blade surface or slightly impressed or slightly raised; inflorescences 8–30-flowered; peduncles 1–10 mm long [3]

3. Young stems reddish tomentose; petiole 1-2 mm wide; leaf blade generally ovate-oblong, 4-17 cm long, 2-9 cm wide, the base rounded to subcordate, with glands on the lower blade surface, sometimes near the margin and rarely one or few marginal (the glands as a light discoloration when fresh, darkened and conspicuous when dry); pedicels and peduncles reddish pubescent ... C. arborescens

3. Young stems strigose to glabrate (in Florida); petiole 0.5-1 mm wide; leaf blade generally ovate-elliptic, 2.5-9 cm long, 1.5-5 cm wide, the base rounded to broadly cuneate, with marginal glands, some at least 1-10 mm from the petiole (the glands as a light discoloration when fresh, darkened and more conspicuous when dry); pedicels and peduncles glabrate (in Florida) ... C. elliptica

**Colubrina arborescens** (Mill.)Sarg.— {AFP} State Endangered.

\***Colubrina asiatica** (L.)Brongn.— {AFP}

**Colubrina cubensis** (Jacq.)Brongn. var. **floridana** M.C.Johnst.— {AFP} State Endangered.

**Colubrina elliptica** (Sw.)Brizicky & W.L.Stern— {AFP} State Endangered.

## Frangula {AFP}

**Frangula caroliniana** (Walter) A. Gray— {AFP}

## Gouania {AFP}

**Gouania lupuloides** (L.)Urb.— {AFP}

## Krugiodendron {AFP}

**Krugiodendron ferreum** (Vahl)Urb.— {AFP}

### **Pseudoziziphus** {AFP}

***Pseudoziziphus celata*** (Judd & D.W.Hall)Hauenschild— {AFP} Endemic. Federally Endangered. State Endangered.

### **Reynosia** {AFP}

***Reynosia septentrionalis*** Urb.— {AFP} State Threatened.

### **Sageretia** {AFP}

***Sageretia minutiflora*** (Michx.)C.Mohr— {AFP}

### **Ziziphus** {AFP}

1. Stems, leaf blade lower surfaces, and inflorescence glabrate ... *Z. jujuba*

1. Stems, leaf blade lower surfaces, and inflorescence densely tomentose ... *Z. mauritiana*

^ *Ziziphus jujuba* Mill.— {AFP}

^ *Ziziphus mauritiana* Lam.— {AFP}

### **CANNABACEAE** {AFP}

1. Annual herbs; leaves palmately compound; fruit an achene ... *Cannabis sativa*

1. Shrubs to trees; leaves simple; fruit a drupe [2]

2. Leaf blade glabrous or nearly so on the lower surface, the margin entire to coarsely serrate; flowers and fruits solitary or few in unbranched cymes ... *Celtis*

2. Leaf blade pubescent on the lower surface, the margin finely serrate; flowers and fruits 12-20 in branching cymes ... *Trema*

***Cannabis*** {AFP} The genus *Cannabis* is here treated as containing one extant polymorphic species (Small & Cronquist 1976; Small 2015).

^ *Cannabis sativa* L.— {AFP}

### **Celtis** {AFP}

1. Stems often with supranodal thorns; leaf blades mostly ovate-oblong to elliptic [2]

1. Stems lacking thorns; leaf blades mostly broadly ovate to ovate-lanceolate [3]

2. Leaf blade tip mostly acute to acute-mucronate, the upper surface strongly scabrous, the lower surface with domatia mostly in the distal veins axils, to 13 cm long ... *C. iguanaea*

2. Leaf blade tip mostly rounded-mucronate to retuse, the upper surface usually smooth (in Florida), the lower surface with domatia mostly confined to the basal vein axils, to 7 cm long ...

*C. pallida*

3. Leaf blades mostly elliptic-lanceolate to ovate-lanceolate, the surfaces often yellowish green, the margin entire or with up to 15 irregular teeth per side, with the base slightly oblique, the apex acute to gradually acuminate ... *C. laevigata*

3. Leaf blades mostly ovate, the surfaces often grayish green and often darker above, the margin with (6)9-39 teeth per side, the base mostly strongly oblique, the apex abruptly acuminate ... *C. occidentalis*

***Celtis iguanaea*** (Jacq.) Sarg.— {AFP} State Endangered.

***Celtis laevigata*** Willd.— {AFP}

***Celtis occidentalis*** L.— {AFP}

***Celtis pallida*** Torr.— {AFP} State Endangered.

## Humulus

^ *Humulus lupulus* L.— {AFP}

## Trema {AFP}

1. Mature fruits purple to black ... *T. orientale*

1. Mature fruits pink to orange-red [2]

2. Larger leaf blades 1-2.3 cm wide, <6.5 cm long, the margins sometimes revolute, the basal pair of veins generally without pronounced lateral veins extending to the margin or these few and short, the greatest distance between the basal vein and the blade margin to 4 mm, the area between the basal veins and the leaf margin conspicuously smaller than the area between the basal vein and midrib, the blade base symmetric to subtly asymmetric and usually rounded to truncate, the blade tip obtuse to acute ... *T. lamarckianum*

2. Larger leaf blades 2.5-6 cm wide, usually >5 cm long, the margins not revolute, the basal pair of veins with pronounced lateral veins extending to the margin, the greatest distance between the basal veins and the blade margin usually >4 mm, the area between the basal veins and the leaf margin generally subequal to larger than (or not much smaller than) the area between the basal vein and midrib, the blade base usually asymmetric, sometimes cordate, the blade tip usually acuminate [3]

3. Leaf blades 1.4-2.4 times longer than wide, the apex shortly acuminate with the portion of the blade tip <4 mm wide 3-8 mm long, the marginal teeth pronounced with the sinus mostly 0.5-1.5 mm deep, the reticulate venation conspicuous and apparent throughout on the blade underside ... *T. floridanum*

3. Leaf blades 2.4-3.5 times longer than wide, the apex long-acuminate with the portion of the blade tip <4 mm wide 10-25 mm long, the marginal teeth shallow and the sinus mostly <0.5 mm deep, the reticulate venation inconspicuous or moderately apparent on part of the blade underside ... *T. micranthum*

***Trema floridanum*** Britton ex Small— {AFP} South Florida (Central America).

***Trema lamarckianum*** (Schant.) Blume— {AFP} State Endangered.

\****Trema micranthum*** (L.) Blume— {AFP}

^ *Trema orientale* (L.) Blume— {AFP}

## MORACEAE {AFP}

1. Herbs [2]

1. Woody vines, shrubs, to trees [3]

2. Acaulescent; inflorescence subequal to exceeding the petioles ... *Dorstenia contrajerva*

2. Caulescent; inflorescence shorter than the petioles ... *Fatoua villosa*

3. Leaf blades dentate to serrate [4]

3. Leaf blades entire, or sometimes coarsely undulate to coarsely dentate [5]

4. Bark often with horizontal bicolored banding or spotting; pistillate inflorescence globose; style unbranched ... *Broussonetia papyrifera*

4. Bark usually uniform in color, without distinct horizontal banding; pistillate inflorescence cylindrical; style 2-branched ... *Morus*

5. Inflorescence a synconium, with the flowers hidden inside the inner surface of an urceolate receptacle with a small opening at the apex ... *Ficus*

5. Inflorescence with the flowers visible and exposed on the outer surface of the receptacle [6]

- 6. Leaf blade secondary veins nearly straight, spreading to nearly perpendicular, with a conspicuous undulate marginal vein ... *Brosimum alicastrum*
- 6. Leaf blade secondary veins ascending or arcuate, the marginal vein inconspicuous or coarse and irregularly undulate [7]
- 7. Stems without spines; leaf blades mostly broadly elliptic, sometimes lobed ... *Artocarpus heterophyllus*
- 7. Stems often with axillary spines; leaf blades mostly ovate ... *Maclura pomifera*

### Artocarpus {AFP}

- 1. Leaf blades lobed ... *A. altilis*
- 1. Leaf blades with entire margins ... *A. heterophyllus*

^ *Artocarpus altilis* (Parkinson) Fosberg—

^ *Artocarpus heterophyllus* Lam.— {AFP}

### Brosimum {AFP}

^ *Brosimum alicastrum* Sw.— {AFP}

### Broussonetia {AFP}

\* *Broussonetia papyrifera* (L.) Vent.— {AFP}

### Dorstenia {AFP}

^ *Dorstenia contrajerva* L.— {AFP}

### Fatoua {AFP}

\* *Fatoua villosa* (Thunb.) Nakai— {AFP}

### Ficus {AFP}

- 1. Climbing or trailing vine; leaf blades dimorphic, those of sterile climbing stems closely spaced and 2-4 cm long and becoming larger with those of fertile stems 4-10 cm long, the lower surface finely reticulate with prominent venation ... *F. pumila*
- 1. Erect shrub or tree, sometimes starting out epiphytic; leaves monomorphic, the reticulate veins not prominent or only scarcely so [2]
- 2. Leaf blades palmately 3- to 5-lobed, the surfaces scabrous-pubescent, often with some margins coarsely undulate to coarsely dentate ... *F. carica*
- 2. Leaf blades unlobed (occasionally lobate or compound in *F. benghalensis* var. *krishnae*), entire and glabrous to finely pubescent [3]
- 3. Leaf blade apex long caudate or long acuminate, the tip 1/2 or more as long as the blade body ... *F. religiosa*
- 3. Leaf blade apex rounded, obtuse, to acute or if acuminate or caudate the tip less than a 1/4 as long as the blade body [4]
- 4. Leaf blade obdeltoid to obovate, the midrib abruptly terminating and/or branching near the distal 1/4th of the blade ... *F. natalensis* subsp. *leprieurii*
- 4. Leaf blade ovate to elliptic, the midrib extending to the apex or terminating past the distal 1/4th of the blade [5]
- 5. Leaf blades usually 8-30 cm long and 5-20 cm wide, appearing strongly 3-5-(7-)nerved at the base or just above the base, the dominant basal lateral veins nearly as pronounced as the



midrib and prominent on the lower leaf surface (leaf blade also with an outer pair of less conspicuous lateral veins that border the blade margin) [6]

5. Leaf blades usually 3-18 cm long and 1.5-8 cm wide, not appearing strongly 3-nerved at the base, the basal lateral veins weak and not prominent, or if the blade appearing strongly trinerved with prominent basal lateral veins then the blades mostly <8 cm long and <5 cm wide [7]

6. Leaf blades usually with 1 pair of pronounced and prominent basal lateral veins, the apex with a small blunt acumen ... *F. altissima*

6. Leaf blade usually with 2 pronounced and prominent basal lateral veins, the apex usually obtuse or rarely with an acumen ... *F. benghalensis*

7. Petiole usually >1/4 the length of the blade on mature leaves; leaf blade base usually broadly rounded, truncate, to cordate, or sometimes acute; peduncle 5-15 mm long ... *F. citrifolia*

7. Petiole usually <1/4 the length of the blade; leaf blade base usually cuneate to broadly acute; synconium sessile or the peduncle to 5 mm long [8]

8. Lateral veins scarcely pronounced or apparent, even when dry (except for the basal pair which is sometimes apparent) ... *F. benjamina*

8. Lateral veins pronounced or apparent, especially on the lower surface when dry [9]

9. Petiole usually 1.5-6 cm long; larger leaf blades usually 7.5-18 cm long, 3.5-10 cm wide ... *F. aurea*

9. Petiole 0.3-1.5 cm long; larger leaf blades usually 2-9.5 cm long, 1-4.5 cm wide [10]

10. Leaf blade usually without pronounced basal lateral veins; synconium pedunculate, the peduncle 2-5 mm long ... *F. americana*

10. Leaf blade usually with a somewhat pronounced pair of basal lateral veins that extend as the marginal vein; synconium sessile ... *F. microcarpa*

\****Ficus altissima*** Blume— {AFP}

^ *Ficus americana* Aubl.— {AFP}

***Ficus aurea*** Nutt.— {AFP}

^ *Ficus benghalensis* L.— {AFP}

^ *Ficus benjamina* L.— {AFP}

^ *Ficus carica* L.— {AFP}

***Ficus citrifolia*** Mill.— {AFP}

^ *Ficus elastica* Roxb. ex Hornem.—

^ *Ficus krishnae* C.DC.— {AFP}

^ *Ficus lyrata* Warb.—

\****Ficus microcarpa*** L.f.— {AFP}

^ *Ficus natalensis* Hochst. subsp. *leprieurii* (Miq.)C.C.Berg— {AFP}

\****Ficus pumila*** L.— {AFP}

^ *Ficus racemosa* Willd. —

\****Ficus religiosa*** L.— {AFP}

**Maclura** {AFP}

\****Maclura pomifera*** (Raf.)C.K.Schneid.— {AFP}

**Morus** {AFP}

1. Leaf blade upper surface glabrous to sparsely pubescent, relatively smooth, the lower surface glabrous or pubescent along the veins and vein axils ... *M. alba*

1. Leaf blade upper surface strigose, scabrid, the lower surface pubescent to puberulent ... *M. rubra*

\**Morus alba* L.— {AFP}

*Morus rubra* L.— {AFP}

## ULMACEAE {AFP}

1. Leaf blade ovate to ovate-oblong, usually widest below the middle; inflorescence with mostly unisexual flowers, a few bisexual; fruit nut-like ... *Planera aquatica*

1. Leaf blade narrowly ovate to rhombic-elliptic, usually widest near the middle; inflorescence with bisexual flowers; fruit a samara ... *Ulmus*

### *Planera* {AFP}

*Planera aquatica* J.F.Gmel.— {AFP}

### *Ulmus* {AFP}

1. Leaf blade mostly simply serrate; flowering late summer-fall ... *U. parvifolia*

1. Leaf blade mostly doubly serrate (the larger teeth with small teeth along the margin); flowering late summer-fall or winter-spring [2]

2. Stems sometimes corky-winged; petiole 0-3 mm long; leaf blades obtuse to acute, subtly acuminate at the tip; flowering late summer-fall or winter-spring [3]

2. Stems not corky-winged; petiole 3-10 mm long; leaf blades cuspidate-acuminate at the tip; flowering winter-spring [4]

3. Leaf blades usually smooth on the upper surface, mostly acute to acute-acuminate at the tip; samaras long-ciliate, 6-8 mm long; pedicel 2-7 mm long; calyx lobes 5; flowering Jan-Apr, before leafing out ... *U. alata*

3. Leaf blades scabrous on the upper surface, mostly bluntly acute to obtuse at the tip; samaras ciliate, 8-10 mm long; pedicel 7-10 mm long; calyx lobes 6-9; flowering Jul-Oct, among fully developed leaves ... *U. crassifolia*

4. Young stems glabrous to pubescent; buds glabrous to shortly pubescent; leaf blades smooth to lightly scabrous on the upper surface; pedicel 10-20 mm long; samaras ovate, 10-13 mm long, ciliate on the margin ... *U. americana*

4. Young stems often densely pubescent; buds long-pubescent; leaf blades strongly scabrous on the upper surface; pedicel 1-2 mm long; samaras orbicular, 14-17 mm long, the margin not ciliate ... *U. rubra*

*Ulmus alata* Michx.— {AFP}

*Ulmus americana* L.— {AFP}

*Ulmus crassifolia* Nutt.— {AFP}

\**Ulmus parvifolia* Jacq.— {AFP}

*Ulmus rubra* Muhl.— {AFP}

## URTICACEAE {AFP}

1. Trees; leaf blades palmately lobed ... *Cecropia palmata*

1. Herbs to shrubs; leaf blades unlobed [2]

2. Leaves mostly opposite, sometimes solitary at a fertile node [3]

2. Leaves alternate [7]

3. Plant with stinging trichomes with a distinct bulbous base and translucent apex ... *Urtica*

- 3. Plant without stinging trichomes [4]
- 4. Leaf blades entire [5]
- 4. Leaf blades toothed [6]
- 5. Leaf blades <1 cm long ... *Pilea*
- 5. Leaf blades 1-6 cm long ... *Pouzolzia zeylanica*
- 6. Petiole 0.1-0.5 times as long as the leaf blade; inflorescence spiciform with separated dense glomerules ... *Boehmeria cylindrica*
- 6. Petiole 0.3-1.2 times as long as the leaf blade; inflorescence short and dense or paniculate ... *Pilea*
- 7. Leaf blades dentate to serrate [8]
- 7. Leaf blades entire [9]
- 8. Plant without stinging trichomes and without glandular trichomes; leaf blade lower surface densely white tomentose; inflorescence spiciform with separated dense glomerules ... *Boehmeria nivea*
- 8. Plant often with stinging trichomes or stipitate-glandular trichomes; leaf blade lower surface sparsely to densely pubescent, not white tomentose; inflorescence paniculate with ... *Laportea*
- 9. Root tuberous; petiole 0.1-0.3 as long as the leaf blade; sepals connate, appressed and enclosing the achene ... *Pouzolzia zeylanica*
- 9. Rhizomatous, stoloniferous, or fibrous-rooted; petiole 0.3-1.2 times as long as the leaf blade; sepals free or basally connate, loosely enclosing the achene [10]
- 10. Leaf blades mostly 8-60 mm long; stigma short, penicillate ... *Parietaria*
- 10. Leaf blades <8 mm long; stigma long, filiform ... *Rousselia humilis*

### **Boehmeria** {AFP}

- 1. Leaves opposite or mostly so, the blade lanceolate to narrowly ovate, rounded to cordate at the base, the lower surface glabrate to pubescent ... *B. cylindrica*
- 1. Leaves alternate, the blade broadly ovate, abruptly acute at the base, the lower surface densely white tomentose when young ... *B. nivea*

***Boehmeria cylindrica*** (L.)Sw.— {AFP}

\****Boehmeria nivea*** (L.)Gaudich.— {AFP}

***Cecropia*** {AFP} Apparently *C. palmata* is restricted to eastern South America and scarcely (if at all) cultivated.

- 1. Upper leaf surface scabrous, hispidulous; leaf lobe apex short-acuminate to rounded, lateral vein pairs of unfused portion usually 10-15; stipules 3-12 cm long ... *C. peltata*
- 1. Upper leaf surface smooth (rarely scabridulous); leaf lobe apex obtuse, lateral vein pairs of unfused portion 15-25; stipules 20-35 cm long ... *C. polystachya*

^ *Cecropia peltata* L.— {AFP}

^ *Cecropia polystachya* Trécul—

### **Laportea** {AFP}

- 1. Annual with fibrous, weak roots; plant stipitate-glandular, stinging trichomes sometimes wanting; fruiting pedicel not winged; of disturbed sites ... *L. aestuans*
- 1. Perennial with thickened main roots; plant not stipitate-glandular, stinging trichomes palpable; fruiting pedicel distinctly winged; of rich woods ... *L. canadensis*

\**Laportea aestuans* (L.)Chew— {AFP}  
*Laportea canadensis* (L.)Wedd.— {AFP}

### **Parietaria** {AFP}

1. Leaf blades mostly ovate-orbicular, broadly ovate, ovate-deltate, to lance-ovate, the basal pair of lateral veins arising at the base of the blade near the petiole [2]
1. Leaf blades mostly lance-ovate to lance-rhombic, the lower pair of lateral veins mostly arising above the blade base with conspicuous midrib below the lower pair of veins [3]
2. Leaf blades ovate-orbicular to broadly ovate; achene stipe flared and widest at base, achene apex with a near-central mucro ... *P. floridana*
2. Leaf blades ovate-deltate to lance-ovate; achene stipe cylindric, not noticeably wider at base, achene apex with an off-centered mucro ... *P. praetermissa*
3. Perennial; achene dark brown to nearly black, apex acute, mucro absent or minute ... *P. judaica*
3. Annual; achene light to dark brown, apex obtuse with an apical to subapical distinct mucro ... *P. pensylvanica*

*Parietaria floridana* Nutt.— {AFP}

\**Parietaria judaica* L.— {AFP}

*Parietaria pensylvanica* Muhl. ex Willd.— {AFP}

*Parietaria praetermissa* Hinton— {AFP}

### **Pilea** {AFP}

1. Leaf blades <1 cm long, the margins entire [2]
1. Leaf blades 1-10 cm long, the margins toothed [3]
2. Pair of leaves at a node subequal in size; petiole filamentous and weak, often as long as the leaf blade; leaf blade about as long as wide ... *P. herniarioides*
2. Pair of leaves at a node usually strongly unequal in size; petiole relatively stiff, much shorter than the blade; leaf blade mostly longer than wide ... *P. microphylla*
3. Leaf blade orbicular to broadly ovate with a rounded apex ... *P. nummulariifolia*
3. Leaf blade lanceolate to ovate with an acute apex [4]
4. Achene dark brown to black with paler margins, slightly roughened without lines or mottling, about as long as wide ... *P. fontana*
4. Achene light brown, often with slightly raised darker lines or mottling, longer than wide ... *P. pumila*

^ *Pilea cadierei* Gagnep. & Guillaumin—

*Pilea fontana* (Lunell) Rydb.— {AFP}

*Pilea herniarioides* (Sw.) Lindl.— {AFP}

*Pilea microphylla* (L.) Liebm.— {AFP}

^ *Pilea nummulariifolia* (Sw.) Wedd.— {AFP}

^ *Pilea peperomioides* Diels—

*Pilea pumila* (L.) A. Gray— {AFP}

### **Pouzolzia** {AFP}

\**Pouzolzia zeylanica* (L.) Benn.— {AFP}

**Rousselia** {AFP}

\**Rousselia humilis* (Sw.) Urb.— {AFP}

**Urtica** {AFP}

1. Perennial, rhizomatous; leaf blades mostly lanceolate to lanceolate-ovate, the teeth usually angular or deltate, to 15 cm long; inflorescence unisexual, 1.5-7 cm long ... *U. dioica*

1. Annual; leaf blades mostly ovate to suborbicular, the teeth mostly rounded or curvaceous or ovate, to 6 cm long; inflorescence bisexual, to 2 cm long [2]

2. Flower clusters sub-globose to short-spicate; mature achenes ovate, 1-1.5 mm long, less than 1 mm ... *U. chamaedryoides*

2. Flower clusters lax and elongate; mature achenes triangular, 1.5-2.5 mm long, 1-1.5 mm ... *U. urens*

***Urtica chamaedryoides*** Pursh— {AFP}

\**Urtica dioica* L.— {AFP} Alachua Co. (waif). Plants with leaf blade upper surfaces essentially without stinging hairs are referred to as *U. gracilis* and could occur in Florida (Boufford, FNA vol. 3).

***Urtica urens*** L.— {AFP}

## MALVIDS

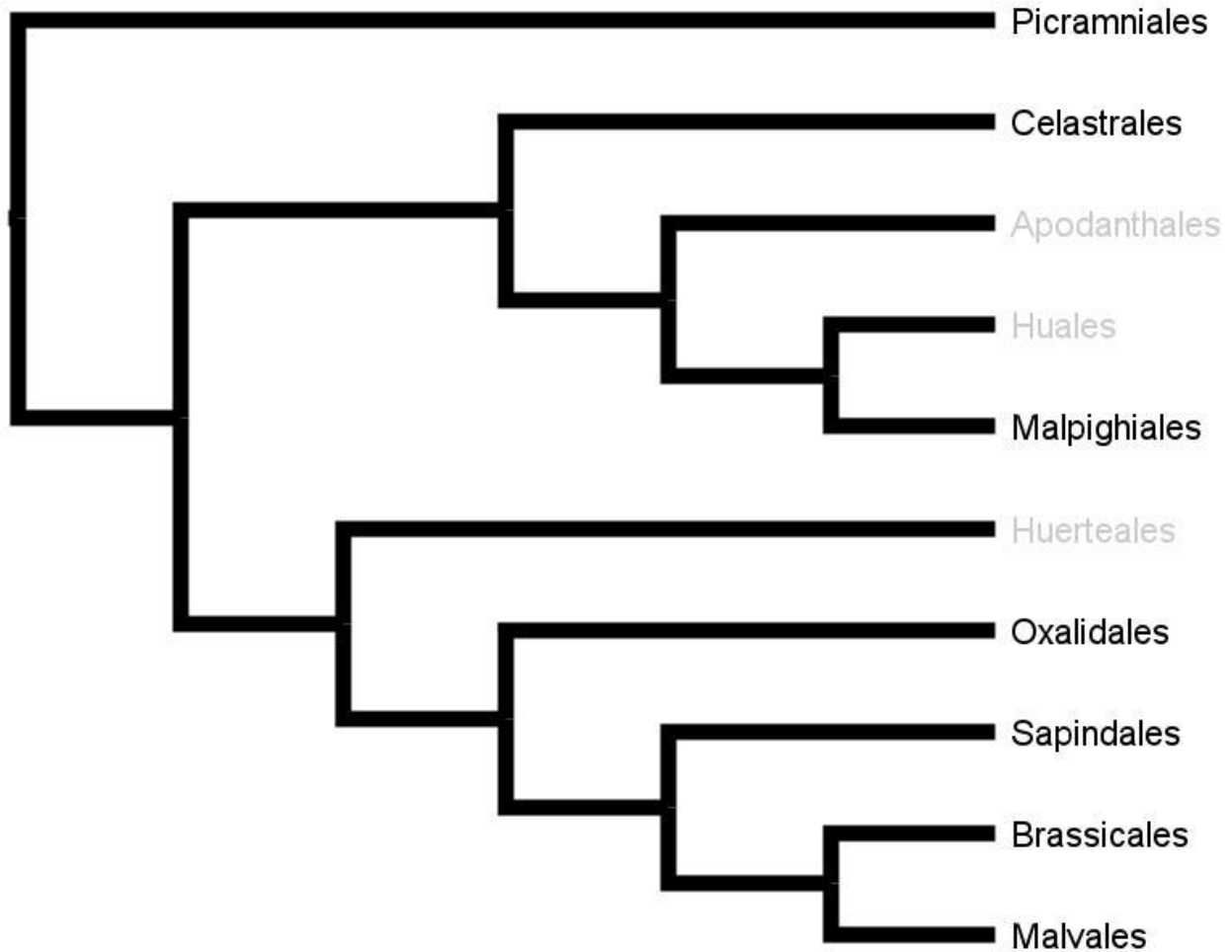


Figure: Estimated phylogeny of extant malvids. Black font=contains taxa native to Florida; Gray font=not native, not included.

## PICRAMNIALES

### PICRAMNIACEAE {AFP}

1. Leaflets 11-31 per leaf, the leaflets 1-2.5 cm long, 0.5-1.5 cm wide; fruit a samara ... *Alvaradoa amorphoides*

1. Leaflets 3-9 per leaf, the leaflets 3-12 cm long, 1-5 cm wide; fruit a berry ... *Picramnia pentandra*

### *Alvaradoa* {AFP}

*Alvaradoa amorphoides* Liebm.— {AFP} State Endangered.

### *Picramnia* {AFP}

*Picramnia pentandra* Sw.— {AFP} State Endangered.

## CELASTRALES

### CELASTRACEAE {AFP}

1. Leaves alternate [2]

1. Leaves opposite or whorled [4]

2. Scandent shrub to vine; leaf blade margin crenate to dentate; flowers in racemose thyrses ...  
Celastrus paniculatus
2. Erect shrub or tree; leaf blade entire to obscurely crenate; flowers solitary or in fascicles [3]
3. Leaf blade venation evident on the upper surface; flowers 4-merous; fruit a 2-stoned drupe  
... Schaefferia frutescens
3. Leaf blade venation obscure on the upper surface; flowers 5-merous; fruit a 3-valvate  
leathery capsule ... Tricerna phyllanthoides
4. Vines; flowers in corymbiform-paniculiform cymes; seeds winged ... Hippocratea volubilis
4. Shrubs or small trees; flowers in simple or branches cymes; seeds not winged [5]
5. Leaves deciduous, usually at least some >4.5 cm long, the blade acute to acuminate at the  
apex; seeds with a yellow to red aril ... Euonymus
5. Leaves persistent, <4.5 cm long, the blade rounded, emarginate, or prickly at the apex; aril  
absent [6]
6. Young stems terete; pedicel 1-3 mm long; flowers bisexual; ovaries 4-locular; stigmas 4;  
fruits red drupes ... Crossopetalum
6. Young stems 4-angled; pedicel 0-1 mm long; flowers unisexual; ovaries 2-locular; stigmas 2;  
fruits bluish black drupes ... Gyminda latifolia

### Celastrus {AFP}

\**Celastrus paniculatus* Willd.— {AFP}

### Crossopetalum {AFP}

1. Shrub to 30 cm tall; leaf blade margins prickly ... *C. ilicifolium*
1. Shrub to tree 1-8 m tall; leaf blade margins entire to crenulate ... *C. rhacoma*

*Crossopetalum ilicifolium* (Poir.)Kuntze— {AFP} State Threatened.

*Crossopetalum rhacoma* Crantz— {AFP} State Threatened.

### Euonymus {AFP}

1. Young stems terete; petioles 10-20 mm long; petals maroon to greenish and maroon ... *E.*  
*atropurpureus*
1. Young stems 4-angled or winged; petioles 0-25 mm long; petals yellowish white to yellowish  
green [2]
2. Petioles 0-3 mm long; flowers 5-merous; fruit surface muricate-wart ... *E. americanus*
2. Petioles 10-25 mm long; flowers 4-merous; fruit surface smooth ... *E. maackii*

*Euonymus americanus* L.— {AFP}

*Euonymus atropurpureus* Jacq.— {AFP} State Endangered.

\**Euonymus maackii* Rupr.— {AFP}

### Gyminda {AFP}

*Gyminda latifolia* (Sw.)Urb.— {AFP} State Endangered.

### Hippocratea {AFP}

*Hippocratea volubilis* L.— {AFP}

### Schaefferia {AFP}

*Schaefferia frutescens* Jacq.— {AFP} State Endangered.

### Tricerma {AFP}

*Tricerma phyllanthoides* (Benth.)Lundell— {AFP} State Threatened.

### PARNASSIACEAE {AFP}

1. Annual herb, 0.5-3 cm tall; leaf blades 2-6 mm long; petals 0–0.4 mm long, much shorter than the sepals; stigmas 3; capsules 3-valved ... Lepuropetalon spathulatum

1. Perennial herb, 20-60 cm tall; leaf blades 20-100 mm long; petals 3–22 mm, usually longer than the sepals; stigmas 4; capsules 4-valved ... Parnassia

### Lepuropetalon {AFP}

*Lepuropetalon spathulatum* Elliott— {AFP} State Endangered.

1. Plants with creeping rhizomes; leaves 1–2 per node on rhizomes; staminode glands lanceolate, 1–1.7 mm long; stamens yellow; ovaries white ... P. caroliniana

1. Plants without rhizomes; leaves 4-20 in basal rosettes; staminode glands elliptic to subglobose, 0.4–0.6 mm long; stamens reddish; ovaries green, sometimes whitish at base ... P. grandifolia

### Parnassia {AFP}

*Parnassia caroliniana* Michx.— {AFP} State Endangered.

*Parnassia grandifolia* DC.— {AFP} State Endangered.

## MALPIGHIALES

### CALOPHYLLACEAE

#### Calophyllum {AFP}

1. Young stems quadrangular; terminal bud puberulent; flowers <1 cm wide; stamens 5-50 per flower; fruit 2-2.5 cm wide ... C. antillanum

1. Young stems terete; terminal bud papillate; flowers mostly >1 cm wide; stamens 150-300 per flower; fruit 2.5-4 cm wide ... C. inophyllum

\**Calophyllum antillanum* Britton— {AFP}

\**Calophyllum inophyllum* L.— {AFP}

### CLUSIACEAE {AFP}

#### Clusia {AFP}

1. Leaf blade lanceolate to oblanceolate, mostly widest near the middle, the apex bluntly acute (cultivated) ... C. lanceolata

1. Leaf blade spatulate, widest near the apex, the apex rounded [2]

2. Bracteoles subtending flower 6-14(30); petals 4; ovary and fruit 10-14(16)-locular (cultivated) ... C. flava

2. Bracteoles subtending flower 2-4; petals 5-8; ovary and fruit 5-9-locular [3]

3. Petals 5; ovary and fruit 5-locular (cultivated) ... C. fluminensis

3. Petals 6-8; ovary and fruit 6-9-locular ... C. rosea

^ *Clusia flava* Jacq. —

^ *Clusia fluminensis* Planch. & Triana—



^ *Clusia lanceolata* Cambess.—

***Clusia rosea*** Jacq.— {AFP} Native only to the lower keys (Blodgett collections from Key West & Big Pine Key, NY). Native stock extirpated; now extensively cultivated and naturalized.

## HYPERICACEAE {AFP}

### **Hypericum** {AFP}

1. Corolla pink, sometimes greenish; stamens 9, in 3 fascicles alternating with staminode fascicles [2]
1. Corolla yellow; stamens >9, in 3-5 fascicles or in an continuous or interrupted ring without staminode fascicles [4]
2. Petioles conspicuous, 2-15 mm long ... *H. walteri*
2. Petioles absent or inconspicuous, <2 mm long [3]
3. Leaf blade with intramarginal gland-dots only ... *H. tubulosum*
3. Leaf blade with gland-dots on the surface and intramarginally ... *H. virginicum*
4. Sepals and petals 4, rarely 5 [5]
4. Sepals and petals 5, rarely 4 [10]
5. Styles 2 [6]
5. Styles 3-4 [7]
6. Larger leaves >1 cm long, with gland-like auricles at the base; bracteoles near the calyx base; pedicels short, erect at anthesis ... *H. hypericoides*
6. Larger leaves <1 cm long, without gland-like auricles; bracteoles near the pedicel base; pedicels elongated, reflexed at anthesis ... *H. suffruticosum*
7. Sepals not enclosing the capsule, subequal with the outer ones only slightly larger than the inner ones ... *H. microsepalum*
7. Sepals enclosing the capsule, unequal with the outer ones much larger than the inner ones [8]
8. Outer sepals 9-18 mm wide, conspicuously 5-9-veined ... *H. crux-andreae*
8. Outer sepals 5-10 mm wide, obscurely 3-5-veined [9]
9. Leaves subcordate to cordate-clasping ... *H. tetrapetalum*
9. Leaves cuneate to truncate at the base ... *H. edisonianum*
10. Leaves 1-4 mm long [11]
10. Larger leaves >5 mm long [12]
11. Plant with several, short non-flowering leafy branches ... *H. cumulicola*
11. Plant lacking short, non-flowering leafy branches ... *H. gentianoides*
12. Leaves acicular (needle-like), 0.5-1.5 mm wide [13]
12. Leaves with an expanded, flat blade, sometimes linear but not acicular, 0.5-25 mm wide [19]
13. Largest leaves <12 mm long [14]
13. Largest leaves >13 mm long [15]
14. Stem internodes sometimes 4-lined at first, soon 2-winged, not terete; leaf surface glossy; capsules 3.5-5.5 mm long; of hydric to mesic habitats ... *H. brachyphyllum*
14. Stem internodes 6-lined at first, becoming 4-lined, then terete; leaf surface dull; capsules 6-10 mm long; of xeric habitats ... *H. tenuifolium*
15. Plant <1 m tall, with few branches and a narrow crown ... *H. exile*
15. Plant >1 m tall with many branches [16]
16. Bark smooth and metallic-silvery, exfoliating in thin, curled plates; young stems, leaves, and sepals glaucous ... *H. lissophloeus*
16. Bark not smooth, not metallic-silvery; plant not glaucous [17]
17. Bark tight, adherent, not exfoliating or only few narrow strips peeling away ... *H. nitidum*

17. Bark flaking in papery sheets or plates or wide strips, corky to spongy [18]
18. Plants 2-4 m tall, stems and trunk 2.5-15 cm wide at the base of the plant; stem internodes 4-lined at first, soon 4-angled, then terete; terminal inflorescence 1-3-flowered ... *H. chapmanii*
18. Plants 1-2 m tall, stems and trunk 0.4-2 cm wide at the base of the plant; stem internodes 6-lined at first, soon 2-winged, then terete; terminal inflorescence (3-)7-32-flowered ... *H. fasciculatum*
19. Stems becoming woody, especially towards the base of the plant [20]
19. Stems herbaceous, not woody [26]
20. Mid-stem leaves ovate-deltoid, subcordate to cordate, somewhat clasping ... *H. myrtifolium*
20. Mid-stem leaves generally elliptic to linear [21]
21. Leaves lacking a definite articulation zone at the base [22]
21. Leaves with a definite articulation zone, as a minute, narrow, horizontal line or groove between the leaf base and stem [24]
22. Leaves stiff, subcoriaceous, not glaucous, usually with fascicles of leaves in the axils ... *H. cistifolium*
22. Leaves chartaceous, often glaucous below, lacking leaf fascicles in the axils [23]
23. Inflorescences terminal, (1-)3-5(-8)-flowered; sepals tardily deciduous, 1.5-2.3 mm wide; capsules 6-15 × 4.5-8 mm ... *H. apocynifolium*
23. Inflorescences from 1-3 nodes, the terminal 7-45-flowered; sepals deciduous, 1-1.5 mm wide; capsules 3.5-7 × 3-5 mm ... *H. nudiflorum*
24. Inflorescence usually with 1-3 flowers; petals 12-25 mm long ... *H. frondosum*
24. Inflorescence usually with 3-25 flowers; petals 5-15 mm long [25]
25. Leaf blades 15-32(-37) mm long; flowers 9-14 mm wide; capsules 4.5-6 mm long; seeds 0.7-0.8 mm long ... *H. galioides*
25. Leaf blades 30-70 mm long; flowers 15-30 mm wide; capsules 7-13 mm long; seeds 1.5-2 mm long ... *H. prolificum*
26. Leaves linear-subulate; inflorescence racemose ... *H. drummondii*
26. Leaves linear to obovate; inflorescence cymose [27]
27. Stem and leaves scabrous-tomentose to pilose; sepal margin setulose-ciliate ... *H. setosum*
27. Stems and leaves glabrate; sepal margin not ciliate [28]
28. Leaves, sepals, and/or petals with black punctae [29]
28. Leaves, sepals, and petals without black punctae [30]
29. Petals 6-14 mm long; anther glands amber or pellucid; styles 5-8 mm long ... *H. pseudomaculatum*
29. Petals 3-6 mm long; anther glands black; styles 1-4 mm long ... *H. punctatum*
30. Leaf blades leathery; petals golden yellow or orange-yellow; stamens (35-)50-80 [31]
30. Leaf blades papery to membranous; petals usually bright, golden, or pale yellow, rarely salmon-orange; stamens 5-25 [32]
31. Plant with numerous branches at the middle and upper nodes; seeds 0.5-0.6 mm long; of seasonally inundated sites ... *H. harperi*
31. Plant unbranched or sparingly branched in the upper nodes; seeds 0.6-0.8 mm long; of dry upland sites ... *H. virgatum*
32. Leaves linear to linear-oblongate, 1(3)-nerved ... *H. canadense*
32. Leaves ovate, deltoid-ovate, to elliptic, (3)5-7-nerved [33]
33. Upper and mid-stem leaves deltoid-ovate, the apex usually acute ... *H. gymnanthum*
33. Upper and mid-stem leaves ovate-oblong to elliptic, the apex rounded to obtuse ... *H. mutilum*

***Hypericum apocynifolium*** Small— {AFP}

*Hypericum brachyphyllum* (Spach) Steud.— {AFP}  
*Hypericum canadense* L.— {AFP}  
*Hypericum chapmanii* W.P.Adams— {AFP} Endemic.  
*Hypericum cistifolium* Lam.— {AFP}  
*Hypericum crux-andreae* (L.) Crantz— {AFP}  
*Hypericum cumulicola* (Small) W.P.Adams— {AFP} Endemic. Federally Endangered. State Endangered.  
*Hypericum drummondii* (Grev. & Hook.) Torr. & A.Gray— {AFP}  
*Hypericum edisonianum* (Small) W.P.Adams & N.Robson— {AFP} Endemic. State Endangered.  
*Hypericum exile* W.P.Adams— {AFP} Endemic.  
*Hypericum fasciculatum* Lam.— {AFP}  
*Hypericum frondosum* Michx.— {AFP}  
*Hypericum galioides* Lam.— {AFP}  
*Hypericum gentianoides* (L.) Britton et al.— {AFP}  
*Hypericum gymnanthum* Engelm. & A.Gray— {AFP}  
*Hypericum harperi* R.Keller— {AFP}  
*Hypericum hypericoides* (L.) Crantz— {AFP}  
*Hypericum lissophloeus* W.P.Adams— {AFP} Endemic. State Endangered.  
*Hypericum microsepalum* (Torr. & A.Gray) A.Gray ex S.Watson— {AFP}  
*Hypericum mutilum* L.— {AFP}  
*Hypericum myrtifolium* Lam.— {AFP}  
*Hypericum nitidum* Lam.— {AFP}  
*Hypericum nudiflorum* Michx. ex Willd.— {AFP}  
*Hypericum prolificum* L.— {AFP}  
*Hypericum pseudomaculatum* Bush— {AFP}  
*Hypericum punctatum* Lam.— {AFP}  
*Hypericum setosum* L.— {AFP}  
*Hypericum suffruticosum* W.P.Adams & N.Robson— {AFP}  
*Hypericum tenuifolium* Pursh— {AFP}  
*Hypericum tetrapetalum* Lam.— {AFP}  
*Hypericum tubulosum* Walter— {AFP}  
*Hypericum virgatum* Lam.— {AFP} Sometimes subsumed under *H. denticulatum*.  
*Hypericum virginicum* L.— {AFP}  
*Hypericum walteri* J.F.Gmel.— {AFP}

## OCHNACEAE {AFP}

### Ochna {AFP}

1. Leaf blades mostly 1-2.5 cm wide, 16-40 major lateral veins on each side of the midrib ... O. serrulata

1. Leaf blades mostly 2.5-5 cm wide, 7-20 major lateral veins on each side of the midrib [2]

2. Young stem strongly lenticellate; leaf blade base subcordate, the margin setose, some setae ca. 1 mm long ... O. thomasiana

2. Young stem lacking conspicuous lenticels; leaf blade base cuneate to truncate, the margin entire or toothed, teeth <0.6 mm long ... O. atropurpurea

\**Ochna atropurpurea* DC.— {AFP}

\**Ochna serrulata* (Hochst.) Walp.— {AFP}

\**Ochna thomasiana* Engl. & Gilg— {AFP}

## EUPHORBIACEAE {AFP}

1. Inflorescence a cyathium (a female flower, often pedicellate, surrounded by individual stamens, often pedicellate, subtended by an involucre often bearing glands and petaloid appendages) ... *Euphorbia*
1. Flowers solitary, in spiciform or paniculiform inflorescences, or in a pseudanthium with 3 female flowers [2]
2. Leaf blades lobed, sometimes obscurely, usually at least some blades lobed on the plant, or if unlobed then the larger blades broadly ovate (>4 cm wide) and entire or irregularly toothed [3]
2. Leaf blades unlobed, if broadly ovate (>4 cm wide) then regularly undulate, crenate, to serrate, rarely entire [11]
3. Leaves peltate ... *Ricinus communis*
3. Leaves not peltate [4]
4. Vines; inflorescence subtended by 2 foliaceous bracts 2-3 cm long ... *Dalechampia scandens*
4. Herbs, shrubs, to trees; inflorescence bracts not foliaceous, 0.1-1 cm long [5]
5. Leaf blade margins regularly, finely crenate to serrate ... *Astraea lobata*
5. Leaf blade margins entire or with coarse lobate teeth-like projections [6]
6. Plant with stellate hairs [7]
6. Plant without stellate hairs [8]
7. Leaf blade secondary and tertiary veins curving, branching, or reticulate, not straight ... *Aleurites moluccanus*
7. Leaf blade secondary and cross-veins straight or nearly so ... *Mallotus japonicus*
8. Tree to 20 m; petals 2-3 cm long; seeds 2-2.5 cm long ... *Vernicia fordii*
8. Herb, shrub, or small tree to 6 m; petals 0.3-1.5 cm long or absent with petaloid sepals; seeds 0.5-2 cm long [9]
9. Calyx green; petals pale green, red, to purple ... *Jatropha*
9. Calyx petaloid, white to reddish white; petals absent [10]
10. Herb or regularly branched shrub to tree; stinging trichomes present or absent; stamens connate ... *Cnidioscolus*
10. Sparingly branched shrub; stinging trichomes absent; stamens free ... *Manihot*
11. Plant with stinging trichomes ... *Tragia*
11. Plant without stinging trichomes [12]
12. Staminate (and sometimes pistillate) flowers with conspicuous petals, rarely absent (if absent then plant with stellate trichomes or scales) [13]
12. Flowers without petals (sepals usually present but not petaloid; plant without stellate trichomes or scales) [15]
13. Leaf blades with 8-25 straight secondary veins ... *Caperonia*
13. Leaf blades with arcuate, irregular, or branching secondary veins or few straight secondary veins [14]
14. Plant with malpighiaceae trichomes ... *Argythamnia argoathamnoides*
14. Plant with stellate trichomes or scales ... *Croton*
15. Petiole apex with 2 glands [16]
15. Petiole apex without glands or glands inconspicuous (blade sometimes with glands) [19]
16. Petioles 0-0.9 cm long; leaf blades linear-lanceolate, <2.5 cm wide ... *Sapium haematospermum*
16. Petioles mostly 1-6 cm long; leaf blades ovate, ovate-elliptic, to rhomboid, mostly >3 cm wide [17]
17. Petiole apex with a single gland; fruit a drupe ... *Hippomane mancinella*
17. Petiole apex with 2 glands; fruit a dehiscent capsule [18]

18. Leaf blade crenate-serrulate; fruit a woody capsule, with 5-20 carpels; seeds flattened discs ... *Hura crepitans*
18. Leaf blade entire; fruit a brittle capsule, with 2-3 carpels; seeds ovoid-angular ... *Triadica sebifera*
19. Two glands subtending each inflorescence bract [20]
19. Without glands subtending the inflorescence bracts [22]
20. Plants without hairs; larger leaf blades mostly >4 cm long, linear, linear-lanceolate, elliptic, oblanceolate, to obovate, crenulate to serrulate; staminate sepals 2; stamens 2; capsule base persisting as a 3-lobed gynobase ... *Stillingia*
20. Plants with hairs; leaf blades mostly <6 cm long, lanceolate, ovate, to elliptic, entire to finely serrulate; staminate sepals 3; stamens 3; capsule base not persisting [21]
21. Shrub to 3 m; latex not evident; stem and leaves puberulent to glabrous; leaf blade entire ... *Ditrysinia fruticosa*
21. Annual herb to 0.5 m; latex milky; stem and sometimes leaves hirsute; leaf blade minutely crenulate-serrulate ... *Microstachys corniculata*
22. Leaf blade entire, often variegated ... *Codiaeum variegatum*
22. Leaf blade toothed (usually at least some blades on the plant), sometimes the teeth few and obscure near the apex [23]
23. Leaf blade usually toothed throughout, usually widest at or below the middle; sepals 3-6; styles usually multifid or laciniate, rarely 2-fid or unbranched; stamens 4-8 ... *Acalypha*
23. Leaf blade obscurely toothed at the distal end, usually widest at or above the middle; sepals absent; styles unbranched; stamens (2-)4(-5) ... *Gymnanthes lucida*

### **Acalypha** {AFP}

1. Shrubs, 2-5 m tall; leaf blades 9-20 cm long, often variegated ... *A. wilkesiana*
1. Herbs, to 1 m tall; leaf blades 1-10 cm long, green [2]
2. Plant to 25 cm tall; petioles 1-5 mm long; leaf blades 0.3-2.1 cm long, 0.3-1.4 cm wide ... *A. chamaedrifolia*
2. Plant 15-100 cm tall; petioles 4-70 mm long; leaf blades 2-12 cm long, 1.2-6.5 cm wide [3]
3. Repent, stoloniferous herb; axillary pistillate inflorescence without bracts, the terminal inflorescence staminate, pistillate with bracts, or bright red of densely congested styles lacking ovaries and lacking bracts ... *A. herzogiana*
3. Erect to ascending annual herb; pistillate flowers axillary or terminal, with bracts, staminate ones distal to the pistillate flowers in the same inflorescence or in a separate axillary inflorescence [4]
4. Pistillate bracts densely crowded, unlobed with linear tips, with hairs to 2 mm long, the inflorescence having a bottlebrush appearance [5]
4. Pistillate bracts distant to crowded, each with several lobes or teeth, with non-glandular hairs to 0.3 mm long, the inflorescence unlike a bottlebrush in appearance [6]
5. Petiole 0.6-1.8 times as long as the leaf blade; stems, petioles, peduncles, and pistillate bracts stipitate-glandular; staminate inflorescence axillary, pistillate inflorescence terminal; styles unbranched or rarely 2-fid ... *A. alopecuroidea*
5. Petiole 0.1-0.4 times as long as the leaf blade; stems, petioles, and peduncles not stipitate-glandular (pistillate bracts stipitate-glandular); inflorescences axillary, pistillate and bisexual; styles multifid or laciniate ... *A. arvensis*
6. Inflorescence bisexual, axillary, pistillate portion basal typically with 1-3 pistillate bracts with deltate to lanceolate lobes, staminate portion distal [7]
6. Inflorescence unisexual, staminate one axillary, pistillate one terminal with up to 60 pistillate bracts with linear lobes [8]

7. Petiole 0.2-1.2(-1.8) cm long; leaf blade oblong-lanceolate to linear-lanceolate; pistillate bracts sessile-glandular, sometimes with some stipitate glands ... *A. gracilens*
7. Petiole 0.4-7 cm long; leaf blade ovate to broadly rhombic; pistillate bracts stipitate-glandular ... *A. rhomboidea*
8. Leaf blade bases cordate; pistillate bracts 13- to 17-lobed, pubescent and stipitate-glandular, subequal to the fruit; fruit tuberculate; seeds tuberculate ... *A. ostryifolia*
8. Leaf blade bases obtuse, rounded, to truncate; pistillate bracts 6- to 9-(13-)lobed, glabrous, exceeding the fruit; fruit smooth; seeds minutely pitted ... *A. setosa*

\**Acalypha alopecuroidea* Jacq.— {AFP}

\**Acalypha arvensis* Poepp.— {AFP}

*Acalypha chamaedrifolia* (Lam.)Müll.Arg.— {AFP}

*Acalypha gracilens* A.Gray— {AFP}

^ *Acalypha herzogiana* Pax & K.Hoffm.— {AFP}

*Acalypha ostryifolia* Riddell ex J.M.Coult.— {AFP}

*Acalypha rhomboidea* Raf.— {AFP}

^ *Acalypha setosa* A.Rich.— {AFP}

^ *Acalypha wilkesiana* Müll.Arg.— {AFP}

### Aleurites {AFP}

^ *Aleurites moluccanus* (L.)Willd.— {AFP}

### Argythamnia {AFP}

*Argythamnia blodgettii* Torr. ex Chapm.— {AFP} Federally Threatened. State Endangered.  
Endemic.

### Astraea {AFP}

*Astraea lobata* (L.)Klotzsch— {AFP}

### Caperonia {AFP}

1. Stems glabrescent to sparsely strigose; staminate flower petals 2-2.3 mm long, well exerted from calyx ... *C. castaneifolia*

1. Stems moderately to densely hirsute with erect gland-tipped hairs, also strigose; staminate flower petals ca. 1.4 mm long, not exerted or only slightly from calyx ... *C. palustris*

*Caperonia castaneifolia* (L.)A.St.-Hil.— {AFP}

\**Caperonia palustris* (L.)A.St.-Hil.— {AFP}

### Cnidoscolus {AFP}

1. Shrubs or trees with shallow roots, stems succulent and easily rerooting, with or without stinging hairs ... *C. aconitifolius*

1. Herbs with a tuberous root and the finer roots deeply buried, stems not succulent, with stinging hairs ... *C. stimulosus*

^ *Cnidoscolus aconitifolius* (Mill.)I.M.Johnst.— {AFP}

*Cnidoscolus stimulosus* (Michx.)Engelm. & A.Gray— {AFP}

### Codiaeum {AFP}

^ *Codiaeum variegatum* (L.) A. Juss.— {AFP}

### **Croton** {AFP}

1. Leaf blade coarsely serrate to crenate [2]
1. Leaf blade entire, undulate, rarely with teeth [4]
2. Leaf blade deltate-lanceolate ... *C. trinitatis*
2. Leaf blade ovate to elliptic [3]
3. Leaf blades 0.5-2 cm long, glabrate; fruit glabrate ... *C. glandulosus* var. *floridanus*
3. Larger leaf blades 1.8-7 cm long, stellate-pubescent; fruit stellate-pubescent ... *C. glandulosus* var. *septentrionalis*
4. Leaf blade underside densely silvery lepidote, the scales ciliate, silvery and often brownish centrally, the underside appearing brown-speckled silvery [5]
4. Leaf blade underside stellate-pubescent, lacking scales, not appearing brown-speckled silvery [8]
5. Leaf blade 2-7 mm wide, linear to linear-lanceolate; fruit 1-seeded [6]
5. Leaf blade 7-45 mm wide, elliptic to ovate; fruit 3-seeded [7]
6. Leaf blade upper surface trichomes not overlapping; inflorescence 1-3 cm long; fruit scales with a minute central disc with long radial arms ... *C. michauxii*
6. Leaf blade upper surface trichomes overlapping; inflorescence 0.2-1 cm long; fruit scales with a broad central disc with very short radial arms ... *C. willdenowii*
7. Herbs to subshrubs to 60 cm tall; petioles < ½ length of the blade; leaf blades primarily elliptic; staminate petals 5, pistillate petals absent ... *C. argyranthemus*
7. Shrubs to 1 m tall; petioles mostly > ½ length of the blade; leaf blades primarily ovate; staminate and pistillate petals absent ... *C. punctatus*
8. Leaf blades primarily ovate to lanceolate with deltoid-acute apices, the lateral veins usually conspicuous on the blade underside [9]
8. Leaf blades primarily linear, elliptic, to oblong, infrequently ovate-lanceolate, with rounded, obtuse, to rounded-acute apices, the lateral veins obscured to inconspicuous, rarely a few conspicuous on the blade underside [10]
9. Shrub with generally sparse pubescence, not densely woolly, sometimes glandular; leaf blade with only 1 pair of basal lateral veins, the midrib scarcely prominent to flat on the underside ... *C. humilis*
9. Annual herb with densely woolly pubescence especially on young tissue, eglandular; leaf blade usually with 2-3 pairs of basal lateral veins, the midrib stout and prominent on the underside ... *C. lindheimeri*
10. Shrubs; petiole with 2 glands at the apex [11]
10. Annual herbs; petiole lacking glands [12]
11. Leaf blade elliptic to oblong, with a somewhat stout cuspidate (sometimes involute) apex ... *C. discolor*
11. Leaf blade linear to oblong with a minute mucro at the flat apex ... *C. linearis*
12. Plant monoecious; inflorescence bisexual; staminate petals 5, 0.8-1 mm long; pistillate petals absent; fruit smooth; seeds 4-4.5 mm long, 3-4 mm wide ... *C. elliottii*
12. Plant dioecious; inflorescence unisexual; staminate and pistillate petals absent; fruit verrucose; seeds 3.5-4 mm long, 2.5-3 mm wide ... *C. texensis*

***Croton argyranthemus*** Michx.— {AFP}

\****Croton discolor*** Willd.— {AFP}

***Croton elliottii*** Chapm.— {AFP}

***Croton glandulosus*** L. var. ***floridanus*** (A.M.Ferguson) R.W.Long— {AFP} Endemic.

***Croton glandulosus*** L. var. ***septentrionalis*** Müll.Arg.— {AFP}

***Croton humilis*** L.— {AFP} State Endangered.

***Croton lindheimeri*** (Engelm. & A.Gray)Engelm. & A.Gray ex A.W.Wood— {AFP}

***Croton linearis*** Jacq.— {AFP}

***Croton michauxii*** G.L.Webster— {AFP}

***Croton punctatus*** Jacq.— {AFP}

\****Croton texensis*** (Klotzsch)Müll.Arg.— {AFP}

\****Croton trinitatis*** Millsp.— {AFP}

***Croton willdenowii*** G.L.Webster— {AFP}

**Dalechampia** {AFP}

\****Dalechampia scandens*** L.— {AFP}

**Ditrysinia** {AFP}

***Ditrysinia fruticosa*** (W.Bartram)Govaerts & Frodin— {AFP}

**Euphorbia** {AFP}

1. Stems spiny (sect. *Goniostema*, subg. *Euphorbia*) ... *E. milii*

1. Stems without spines [2]

2. Trees; stems succulent, with few or no leaves (sect. *Tirucalli*, subg. *Euphorbia*) ... *E. tirucalli*

2. Herbs to shrubs; stems succulent or not, generally leafy (if not leafy, then stem ziz-zag) [3]

3. Stems zig-zag and succulent; involucre strongly zygomorphic, spurred and forming tube that encloses glands (sect. *Crepidaria*, subg. *Euphorbia*, formerly of genus *Pedilanthus*) ... *E. tithymaloides* subsp. *smallii*

3. Stems succulent or not, not zig-zag; involucre mostly actinomorphic, not spurred [4]

4. Leaves alternate to opposite, mostly symmetric at the base, the larger blades usually >2 cm long (if smaller, then some leaves alternate); stipules at base of petiole or absent [5]

4. Leaves all opposite, usually conspicuously asymmetric especially near the base, the blades <3.5 cm long, <1.5 cm wide; stipules interpetiolar (sect. *Anisophyllum*, subg. *Chamaesyce*, formerly of genus *Chamaesyce*) ... Key A

5. Leaf blades subtending inflorescence often pale green, white, pink, or red at the base or throughout the blade (sect. *Poinsettia*, subg. *Chamaesyce*, formerly of genus *Poinsettia*) ... Key B

5. Leaf blades subtending inflorescence uniform in color (or with white margins in *E. marginata*) [6]

6. Stems often relatively thin, gracile, 0.5-3 mm thick, often with relatively long internodes exceeding the leaves; stipules mostly minute and glanduliform, rarely subulate-filiform; (2-)5(-10) glands per cyathium, the glands usually with petaloid appendages (sect. *Alectorctonum*, subg. *Chamaesyce*) ... Key C

6. Stems relatively thick, stout, 2-5 mm thick, often with relatively short internodes shorter than the leaves; 4-5(-7) glands per cyathium, the glands without petaloid appendages or with horn-like appendages [7]

7. Larger leaf blades >2 cm long; stipules minute to elongate, glandular; seeds ecarunculate (sect. *Nummulariopsis*, subg. *Euphorbia*) ... Key D

7. Larger leaf blades <4 cm long; stipules usually absent; seeds usually carunculate [8]

8. Leaf blade serrulate, venation conspicuous (sect. *Helioscopia*, subg. *Esula*) ... *E. spathulata*

8. Leaf blade entire, venation obscure (sect. *Paralias*, subg. *Esula*) ... *E. trichotoma*



Key A: sect. *Anisophyllum*, subg. *Chamaesyce*

1. Leaves mostly ascending and imbricate, the blade often involute; usually restricted to shoreline habitats ... *E. mesembrianthemifolia*

1. Leaves mostly spreading and not imbricate, the blade flat, revolute, to involute; habitats various, from inland to shoreline habitats [2]

2. Larger leaf blades usually 10–45 mm long, 4–15 mm wide, generally elliptic to rhombic, typically with evident lateral basal veins [3]

2. Larger leaf blades 2–10 mm long, 2–5 mm wide, generally elliptic to ovate, lateral basal veins usually obscure or absent [9]

3. Ovary and fruit pubescent [4]

3. Ovary and fruit glabrous [7]

4. Leaf blades mostly entire to roughened, teeth inconspicuous; cyathia solitary or in small, cymose clusters at distal nodes, on congested, axillary branches, or at branch tips ... *E. humistrata*

4. Leaf blades mostly conspicuously serrate to dentate; cyathia in capitate glomerules (with reduced, bractlike leaves subtending cyathia) [5]

5. Stems pilose to tomentose; stipules distinct when young, connate into deltate scales when older, often with dark glands along margins or at base; styles 0.6–0.9 mm; seeds plumply ovoid, 0.7–0.8 mm wide, dark reddish brown to almost black ... *E. lasiocarpa*

5. Stems usually both strigillose and hirsute; stipules distinct or connate only at base, deltate, subulate, or linear- or filiform-subulate, without dark glands along margins or at base; styles 0.1–0.6 mm; seeds narrowly ovoid or ovoid-oblong, 0.5–0.7 mm wide, not dark reddish brown to almost black [6]

6. Glomerules of cyathia terminal or axillary, axillary glomerules sessile or at tips of elongated, leafless stalks; petaloid gland appendages white to pink, flabellate, subcircular, or transversely oblong, rarely absent, (0–)0.1–0.6 × (0–)0.1–0.7 mm ... *E. hirta*

6. Glomerules of cyathia terminal on main stems or on short, leafy, axillary branches with reduced, bractlike leaves; petaloid gland appendages absent or white to pink, forming thin rim around edge of gland or oblong, 0.1–0.2 × 0.1–0.3 mm ... *E. ophthalmica*

7. Stems sparsely to moderately pilose to villous or with short, incurved hairs, pubescence often concentrated at nodes and distally (hairs occasionally in 2 bands along opposite sides of stem); leaf blades usually sparsely to moderately pilose, especially toward base, sometimes glabrous; seeds finely and irregularly wrinkled or with indistinct shallow, rounded cross ridges ... *E. nutans*

7. Stems glabrous, sparsely to densely pilose, or pilose-crinkled proximally, usually glabrous distally; leaf blades glabrous or sparsely pilose toward base; seeds with prominent transverse ridges, coarsely and inconspicuously pitted-reticulate, or with shallow irregular depressions alternating with low, smooth ridges [8]

8. Stipules 1.5–2.2 mm long, longer than wide; capsules 1–1.5 mm long or wide; seeds 0.9–1.1 mm long, ca. 0.5 mm wide ... *E. hypericifolia*

8. Stipules 0.5–1 mm long, usually wider than long; capsules 1.5–1.8 mm long or wide; seeds 1–1.4 mm long, 0.7–1.1 mm wide ... *E. hyssopifolia*

9. Leaf blades mostly deltate to ovate, rarely elliptic, often cordate at the base, often revolute, usually 1–1.5 times longer than wide; restricted to pine rocklands [10]

9. Leaf blades mostly oblong, elliptic, narrowly ovate, to obovate-orbicular, mostly rounded, cuneate, to truncate at the base, flat to revolute, usually 1.5–5.5 times longer than wide (or 1–2 times longer than wide and occasionally cordate at the base in *E. serpens*); habitats various including sandy soils, disturbed areas, and pine rocklands [13]

10. Leaves and stems villous-hirsute, hairs straight and spreading, to 0.7 mm long; leaf blades silver-green ... *E. deltoidea* subsp. *pinetorum*
10. Leaves and stems villous, canescent, to glabrate, hairs appressed, uncinata, or irregularly twisted, to 0.5 mm long; leaf blades green to silver-green [11]
11. Leaves and stems glabrous or very sparsely hairy, hairs 0.1–0.2 mm, appressed, uncinata; leaf blades adaxially bright green ... *E. deltoidea* subsp. *deltoidea*
11. Leaves and stems canescent or villous, hairs either less than 0.1 mm or 0.2–0.5 mm, uncinata or irregularly twisted; leaf blades green or silver-green [12]
12. Leaves and stems villous, hairs uncinata or irregularly twisted, 0.2–0.5 mm; leaf blades green ... *E. deltoidea* subsp. *adhaerens*
12. Leaves and stems canescent, hairs less than 0.1 mm; leaf blades silver-green ... *E. deltoidea* subsp. *serpyllum*
13. Ovary and fruit pubescent [14]
13. Ovary and fruit glabrous to slightly pubescent on the angles [22]
14. Petaloid gland appendages of a cyathium strongly unequal, often one pair >2 times as large as the other pair [15]
14. Petaloid gland appendages of a cyathium subequal or scarcely unequal, appendages inconspicuous or absent [17]
15. Stem hairs mostly spreading and exserted, pilose to hirsute; petaloid appendages pink to reddish ... *E. conferta*
15. Stem hairs mostly appressed, ascending, curled, or short, strigose, sericeous, to tomentulose; petaloid appendages white to pink [16]
16. Leaf blade surface puberulent, strigose, to sericeous; cyathial gland oblong to reniform; petaloid appendages 0.3–1 mm long, 0.8–1.6 mm wide; capsules well exserted from involucre at maturity; seeds with 3 or 4 transverse sulci alternating with low transverse ridges ... *E. pergamena*
16. Leaf blade surface glabrous to sparsely tomentulose; cyathial gland elliptic to oval; petaloid appendages to 0.4 mm long or wide; capsules scarcely exserted from involucre, base often remaining inside the involucre and splitting one side of it during maturity; seeds with 4 low transverse ridges, but not sulcate ... *E. thymifolia*
17. Root rather thick, to 5 mm wide; stems ascending to ascending-erect, becoming woody towards the base, younger stems usually pubescent on all sides ... *E. garberi*
17. Root slender to 3 mm wide, stems prostrate, decumbent, to ascending, herbaceous to somewhat woody towards the base, younger stems pubescent on the upper side and glabrate below [18]
18. Stems often rooting at the nodes ... *E. humistrata*
18. Stems usually without adventitious roots [19]
19. Capsules usually with pubescence concentrated along keels or toward base, often glabrous between keels [20]
19. Capsules mostly evenly hairy or pubescence at least not concentrated only along keels and base, not glabrous between keels [21]
20. Plant hairs to 0.6 mm long; petioles, leaf blade abaxial surfaces, ovaries, and capsules glabrous or sparsely sericeous, pilose, or villous; seeds reddish brown to orange or gray-pink, almost smooth or with faint transverse ridges ... *E. mendezii*
20. Plant hairs to 0.3 mm long; petioles, leaf blade abaxial surfaces, ovaries, and capsules crisped-villous to glabrate; seeds white but with barely concealed brown surface beneath, with sharp transverse ridges; ... *E. prostrata*
21. Leaf blades usually entire or the teeth obscure; styles clavate, bifid at the apex, 0.3–0.4 mm long; capsules well exserted from involucre at maturity; seeds 1–1.2 mm long ... *E. maculata*

21. Leaf blades typically conspicuously toothed; styles slender, bifid half the length, 0.4-0.6 mm long; capsules scarcely exerted from involucre, base often remaining inside involucre and splitting one side of it during maturity; seeds 0.7-0.9 mm long ... *E. thymifolia*
22. Stipules (at least those of upper side of stem) connate, forming deltate, ligulate, or ovate scales [23]
22. Stipules usually distinct, occasionally connate basally, not forming conspicuous, deltate, ligulate, or ovate scales [25]
23. Stems erect to ascending [24]
23. Stems prostrate to decumbent [26]
24. Leaf blades (2.2)3.0-6.0(-8.3) times longer than wide, narrowly lanceolate to linear elliptic, 1-veined, glands of the cyathia narrower than or equal to the gland appendages in radial dimension; cyathia, glands, gland appendages, capsules, and stems light to deep red to purple; mainland southern Florida ... *E. hammeri*
24. Leaf blades 0.01-3.0(3.5) times longer than wide, ovate to lanceolate, 1- to 3-veined, glands of the cyathia radially wider than the gland appendages; cyathia, glands, gland appendages, capsules, and stems light green to light red; mainland southern Florida, or Florida Keys [25]
25. Leaf blades (1.0)1.8-2.5(3.5) times longer than wide, 1-veined to weakly 3-veined, the apex acute; glands of the cyathia 0.4-0.6 mm wide; Florida Keys ... *E. ogdenii*
25. Leaves ovate-elliptic, 1.0-1.7(2) times longer than wide, 3-veined, the apex obtuse to rounded; glands of the cyathia 0.6-1.0 mm wide; mainland southern Florida ... *E. porteriana*
26. Stems prostrate to decumbent; petaloid gland appendages unequal (pair near sinus lunate to oblong, 0.1-0.2 × 0.1-0.3 mm, distal margins entire, crenulate, or irregularly sinuate, other pair rudimentary, 0-0.1 × 0.1-0.3 mm, distal margins crenulate or entire) ... *E. blodgettii*
26. Stems prostrate; petaloid gland appendages equal, forming narrow rim at edge of gland, 0.1-0.2 × 0.2-0.3 mm, distal margins entire or crenulate ... *E. serpens*
27. Leaf blades toothed ... *E. serpillifolia*
27. Leaf blades mostly entire or the teeth obscure [28]
28. Seeds (2-)2.2-2.8 mm, weakly dorsiventrally compressed in cross section ... *E. polygonifolia*
28. Seeds 0.7-2.1 mm, terete to bluntly sub- or 3-angled in cross section [29]
29. Leaf blades 1-2 times longer than wide, generally broadly elliptic to ovate-oblong, often cordate at the base, generally not involutely folded along the midrib; styles 0.5-0.8 mm long ... *E. cordifolia*)
29. Leaf blades 1.5-3.5 times longer than wide, generally elliptic and rounded to subcordate at the base, often involutely folded along the midrib; styles 0.2-0.3 mm long [30]
30. Leaf blades oblong or elliptic-oblong, 2-3 mm wide; petaloid gland appendages (0-)0.1-0.5(-0.7) mm; seeds 1.5-1.9 mm long ... *E. bombensis*
30. Leaf blades narrowly elliptic to lanceolate, 1-2 mm wide; petaloid gland appendages 0.1-0.2 mm, often rudimentary; seeds 1-1.3 mm ... *E. cumulicola*

Key B: sect. *Poinsettia*

1. Leaves mostly opposite to subopposite, occasionally some alternate, the blade margins mostly regularly crenate-dentate; caruncle of the seed 0.4-0.6 mm wide ... *E. dentata*
1. Leaves primarily alternate, occasionally a few opposite near the base, the blade margins entire, subentire, lobate, or obscurely serrulate; caruncle of the seed absent or to 0.1 mm wide [2]
2. Leaf blades 0.8-7 mm wide, linear (very rarely lobed), lateral veins not evident; cyathium often with purplish colors throughout, rarely without; glands (1-)3-5 per cyathium, reddish or purplish (rarely green) ... *E. pinetorum*

2. Leaf blades 2-100 mm wide, linear to obovate, sometimes lobed, lateral veins usually evident; cyathium generally lacking purplish colors; gland 1(-2) per cyathium, yellow-green [3]

3. Leaf blades subtending the inflorescence (pleiochasial bracts) white to red at the base to throughout, rarely only green; cyathial gland elliptic to oblong; seed rounded in cross-section ...

*E. cyathophora*

3. Leaf blades subtending the inflorescence (pleiochasial bracts) white to green at the base; cyathial gland circular; seed angular in cross-section ... *E. heterophylla*

Key C: sect. *Alectoroctonum*, subg. *Chamaesyce*

1. Short-lived plants mostly of disturbed sites, the taproot grading into the main stem [2]

1. Perennial plants mostly of woodlands, the main root thicker than the main stems [3]

2. Usually some proximal leaf blades toothed; inflorescence bracts without conspicuous white margins ... *E. graminea*

2. Leaf blades entire; bracts below inflorescence with conspicuous white margins or nearly wholly white ... *E. marginata*

3. Leaves usually numerous and overlapping along the whole stem below the inflorescence branches of mature plants; leaves 0.5-2 mm wide ... *E. polyphylla*

3. Often at least some portion of the main stem conspicuously with few to no leaves below the inflorescence branches of mature plants; larger leaves 2-30 mm wide [4]

4. Peduncles 10-50(70) mm; petaloid gland appendages absent or inconspicuous, 0-0.2 mm wide ... *E. exserta*

4. Peduncles 1-17(40) mm; petaloid gland appendages usually apparent, 0.3-3.5(4.5) mm wide [4]

5. Petaloid gland appendages 0.3-0.6 mm long ... *E. curtisii*

5. Petaloid gland appendages (0.5)1-3.5 mm long [6]

6. Stem usually densely puberulent to sericeous, rarely glabrous; leaf blade 1-4 mm wide; seed 2 mm long ... *E. discoidalis*

6. Stem usually glabrous, rarely villous; leaf blade 2-30 mm wide; seed 2.2-2.4 mm long ... *E. pubentissima*

Key D: sect. *Nummulariopsis*, subg. *Euphorbia*

1. Larger leaf blades usually >9 mm wide, the blade apex rounded to obtuse (sometimes with a mucro) [2]

1. Larger leaf blades usually <14 mm wide, the blade apex acute [3]

2. Involucre 2.4-3.6 × 2.5-3.6 mm; cyathial glands yellow-green, sometimes with a light red margin; styles 3.3-3.6 mm, connate 1/2 length ... *E. rosescens*

2. Involucre 1.3-2.3 × 1.6-2.5 mm; cyathial glands dark purple; styles (1)1.3-1.5 mm, connate 1/4 length ... *E. telephioides*

3. Peduncles (except for that of 1st cyathium at base of pleiochasia) 2-5 mm long; cyathial lobes green; seeds depressed-globose, wider than long ... *E. floridana*

3. Peduncles 6-24 mm long; cyathial lobes reddish along the apex; seeds ovoid-globose, longer than wide [4]

4. Leaf blades narrowly linear, linear, or narrowly linear-lanceolate, 1.5-3.5(4.5) mm wide, length 15-20(50) times width ... *E. inundata* var. *garrettii*

4. Leaf blades usually linear to narrowly elliptic or narrowly lanceolate, rarely oblanceolate, (3)4-14(15) mm wide, length usually 5-10(-25) times width ... *E. inundata* var. *inundata*

***Euphorbia blodgettii*** Engelm. ex Hitchc.— {AFP}

***Euphorbia bombensis*** Jacq.— {AFP}

*Euphorbia commutata* Engelm. ex A.Gray— {AFP} State Endangered.  
*Euphorbia conferta* (Small)Oudejans— {AFP} Endemic.  
*Euphorbia cordifolia* Elliott— {AFP}  
*Euphorbia cumulicola* (Small)Oudejans— {AFP} Endemic. State Endangered.  
*Euphorbia curtisii* Engelm. ex Chapm.— {AFP}  
 \*\**Euphorbia cyathophora* Murray— {AFP} Possibly an early introduction (Chapman 1897, as var. *graminifolia*).  
*Euphorbia deltoidea* Engelm. ex Chapm. subsp. *deltoidea*— {AFP} Endemic. Federally Endangered. State Endangered.  
*Euphorbia deltoidea* Engelm. ex Chapm. subsp. *pinetorum* (Small)Oudejans— {AFP} Endemic. State Endangered.  
*Euphorbia deltoidea* Engelm. ex Chapm. subsp. *serpyllum* (Small)Y. Yang— {AFP} Endemic. State Endangered.  
 \**Euphorbia dentata* Michx.— {AFP}  
*Euphorbia discoidalis* Chapm.— {AFP}  
*Euphorbia exserta* (Small)Coker— {AFP}  
*Euphorbia floridana* Chapm.— {AFP}  
*Euphorbia garberi* Engelm. ex Chapm.— {AFP} Endemic. Federally Threatened. State Endangered.  
 \**Euphorbia graminea* Jacq.— {AFP}  
*Euphorbia hammeri* K.Bradley & Sadle— {AFP} Endemic.  
 \*\**Euphorbia heterophylla* L.— {AFP} Probably an early introduction (Chapman 1897).  
*Euphorbia hirta* L.— {AFP}  
*Euphorbia humistrata* Engelm. ex A.Gray— {AFP}  
*Euphorbia hypericifolia* L.— {AFP}  
*Euphorbia hyssopifolia* L.— {AFP}  
*Euphorbia inundata* Torr. ex Chapm. var. *garrettii* E.L.Bridges & Orzell— {AFP} Endemic.  
*Euphorbia inundata* Torr. ex Chapm. var. *inundata*— {AFP}  
 \**Euphorbia lasiocarpa* Klotzsch— {AFP}  
*Euphorbia maculata* L.— {AFP}  
 ^ *Euphorbia marginata* Pursh— {AFP}  
 \**Euphorbia mendezii* Boiss.— {AFP}  
*Euphorbia mesembrianthemifolia* Jacq.— {AFP}  
 ^ *Euphorbia millii* Des Moul.— {AFP}  
*Euphorbia nutans* Lag.— {AFP}  
*Euphorbia odenii* K.Bradley & Sadle—Endemic. {AFP}  
*Euphorbia ophthalmica* Pers.— {AFP}  
*Euphorbia pergamena* Small— {AFP} State Threatened.  
*Euphorbia pinetorum* (Small)G.L.Webster— {AFP} Endemic. State Endangered.  
*Euphorbia polygonifolia* L.— {AFP}  
*Euphorbia polyphylla* Engelm. ex Chapm.— {AFP} Endemic.  
*Euphorbia porteriana* (Small)Oudejans— {AFP} Endemic. State Endangered.  
*Euphorbia prostrata* Aiton— {AFP}  
*Euphorbia pubentissima* Michx.— {AFP}  
*Euphorbia rosescens* E.L.Bridges & Orzell— {AFP} Endemic. State Endangered.  
*Euphorbia serpens* Kunth— {AFP}  
 \**Euphorbia serpillifolia* Pers.— {AFP}  
*Euphorbia spathulata* Lam.— {AFP}  
*Euphorbia telephioides* Chapm.— {AFP} Endemic. Federally Threatened. State Endangered.

***Euphorbia thymifolia*** L.— {AFP}

^ *Euphorbia tirucalli* L.— {AFP}

***Euphorbia tithymaloides*** L. subsp. ***smallii*** (Millsp.)V.W.Steinm.— {AFP} Maybe introduced and naturalized, or native and extirpated.

***Euphorbia trichotoma*** Kunth— {AFP} Southern, coastal peninsula. Rare, disappearing throughout most of its Florida range.

**Gymnanthes** {AFP}

***Gymnanthes lucida*** Sw.— {AFP}

**Hippomane** {AFP}

***Hippomane mancinella*** L.— {AFP} State Endangered.

**Hura** {AFP}

^ *Hura crepitans* L.— {AFP}

**Jatropha** {AFP}

1. Leaves peltate ... *J. podagrica*

1. Leaves not peltate [2]

2. Leaves deeply (7)9-11(13)-lobed, the sinuses nearly reaching the petiole, appearing nearly palmately compound ... *J. multifida*

2. Leaf blades simple or with 3-5(7) lobes, the sinuses only reaching 3/4 way to the petiole [3]

3. Stipules, petioles, and/or leaf margins stipitate-glandular; stipules persistent, filiform-divided; stamens 8; styles distinct or connate to 1/4 of length ... *J. gossypifolia*

3. Stipules and petioles eglandular, leaf blade margins occasionally with few glands; stipules caducous and narrowly lanceolate, or absent; stamens 10; styles connate 1/2 to most of length [4]

4. Leaf blades mostly 5-lobed and palmately 5-7 veined, blade tips blunt to acute; corollas pale green to greenish yellow; capsules drupaceous ... *J. curcas*

4. Leaf blades mostly simple or 3-lobed and palmately 3-veined, blade tips abruptly acuminate; corollas red to pink; capsules explosively dehiscent ... *J. integerrima*

^ *Jatropha curcas* L.— {AFP}

^ *Jatropha gossypifolia* L.— {AFP}

^ *Jatropha integerrima* Jacq.— {AFP}

^ *Jatropha multifida* L.— {AFP}

**Mallotus** {AFP}

^ *Mallotus japonicus* (L.f.)Müll.Arg.— {AFP}

**Manihot** {AFP}

1. Leaf blade lobes without secondary lobes; stipules lanceolate, entire; stem nodes conspicuously swollen; leaf and stipule scars elevated, especially on older stems; fruit usually winged ... *M. esculenta*

1. Median and adjacent leaf blade lobes with secondary lobes, lateral lobes without secondary lobes; stipules linear, remotely serrate; stem nodes not swollen; leaf and stipule scars not elevated; fruit not winged ... *M. grahamii*

^ *Manihot esculenta* Crantz— {AFP}

^ *Manihot grahamii* Hook.— {AFP}

### Microstachys {AFP}

\**Microstachys corniculata* (Vahl)A.Juss. ex Griseb.— {AFP}

### Ricinus {AFP}

\**Ricinus communis* L.— {AFP}

### Sapium {AFP}

^ *Sapium haematocarpum* Müll.Arg.— {AFP}

### Stillingia {AFP}

1. Shrub, the stem usually solitary and grading into the taproot; stems 8-20 mm wide at the base above the taproot; caruncle of seed minute ... *S. aquatica*

1. Herb to subshrub, the stems often several and branching off a woody rhizome; stems 2-5 mm wide at the base above the rhizome; caruncle of the seed 1-1.3 mm wide [2]

2. Leaves 9-35 mm wide, (1.3)2.3-5.5(9.1) times as long as wide, typically widest above the middle; median bract subtending the pistillate cymule with an obtuse apex (rarely widely acute) ... *S. sylvatica*

2. Leaves 1.5-9 mm wide, (5)10-17.5(28) times as long as wide, typically widest near the middle; median bract subtending the pistillate cymule with an acute apex ... *S. tenuis*

*Stillingia aquatica* Chapm.— {AFP}

*Stillingia sylvatica* L.— {AFP}

*Stillingia tenuis* Small—

### Tragia {AFP}

1. Petiole 0-2.5(-8.5) mm long, 1/5th or less the length of the blade, rarely longer; calyx lobes of the staminate flowers usually 4-5(-6); stamens 2 [2]

1. Petiole 3.5-35 mm long (at least for the larger leaves, as short as 2 mm along the inflorescence), 1/5th-1/2 the length of the blade; calyx lobes of the staminate flowers usually 3, infrequently 4; stamens 3-4 [3]

2. Leaf blades toothed throughout the margin, truncate to subtruncate at the blade base of the basal leaves; inflorescences never subtended by reduced leaves; seeds 4-4.5 mm long ... *T. smallii*

2. Leaf blades entire, irregularly toothed, or toothed throughout the margin, cuneate to acute at the blade base of the basal leaves; inflorescences sometimes subtended by reduced leaves; seeds 3-4 mm long ... *T. urens*

3. Vine; leaf blade strongly cordate at the base ... *T. cordata*

3. Erect to decumbent herb; leaf blade truncate to shallowly cordate at the base [4]

4. Erect to decumbent herbs 8-30 cm tall; leaf blade suborbicular to broadly ovate, to 3 cm long; stigmas undulate ... *T. saxicola*

4. Erect herbs 20-70 cm tall; leaf blade triangular-lanceolate, to 7 cm long; stigmas papillate ... *T. urticifolia*

*Tragia cordata* Michx.— {AFP}

*Tragia saxicola* Small— {AFP} Endemic. State Threatened.

*Tragia smallii* Shinnars— {AFP}

*Tragia urens* L.— {AFP}

*Tragia urticifolia* Michx.— {AFP}

**Triadica** {AFP}

\**Triadica sebifera* (L.) Small— {AFP}

**Vernicia** {AFP}

\**Vernicia fordii* (Hemsl.) Airy-Shaw— {AFP}

**LINACEAE** {AFP}

**Linum** {AFP}

1. Sepals eglandular; corolla bluish, red, to pink; stigmas elongate and introrse [2]
1. Sepals (at least the inner ones) with marginal glands; corolla yellow; stigmas terminal and capitate [3]
2. Sepals 8-12 mm long; petals red (drying pinkish), 15-35 mm long ... *L. grandiflorum*
2. Sepals 5-9 mm long; petals blue to white, 8-12 mm long ... *L. usitatissimum*
3. Style solitary at the base, branching into 5 stigmas [4]
3. Styles 5, not united at the base, each style with one stigma [6]
4. Style branches ca. 1.5-3 mm long below each stigma, the styles connate ca. 0.5-2 mm at the base ... *L. sulcatum* var. *harperi*
4. Style branches to ca. 1 mm long below each stigma, the styles connate ca. 4-7 mm at the base [5]
5. Plant (11)17-28(33) cm tall, branching throughout; stem puberulent or scabrous throughout; stipules glandular; petals 9-11 mm long, 7-9 mm wide; anthers placed near stigma; style 4.4-6.1 mm long ... *L. carteri*
5. Plant (17)28-45(64) cm tall, branching in upper half; stem glabrous, otherwise puberulent or scabrous only near the base; stipules eglandular; petals 11.5-17 mm long, 10-13 mm wide; anthers divergent from stigma; style 5.1-9.1 mm long ... *L. smallii*
6. Capsules 1.3-2.3 mm long, depressed-globose or globose, apices not pointed [8]
6. Capsules 2-3.9 mm long, either pyriform to ovoid or subglobose, apices short-pointed [9]
7. Margins of inner sepals usually with conspicuous stipitate glands; capsule segments usually persistent ... *L. medium* var. *texanum*
7. Margins of inner sepals eglandular or with inconspicuous sessile glands; capsule segments usually deciduous ... *L. striatum*
8. Leaves mostly opposite until just below the inflorescence branches ... *L. westii*
8. Leaves alternate, or opposite only in the basal third or less and alternate distally on most of the stem [9]
9. Stipular glands reddish; leaf blade 5-15 mm long, 0.5-1.2 mm wide; petals 4-6 mm long ... *L. arenicola*
9. Stipular glands absent; leaf blade 10-25 mm long, 1-4 mm wide; petals 5-11 mm long [10]
10. Margins of inner sepals glandular-toothed; capsules 2-3.4 mm long; seeds 1.6-2.5 mm long ... *L. floridanum*
10. Margins of inner sepals entire; capsules 3.4-3.9 mm long; seeds 2.8-3 mm long ... *L. macrocarpum*

*Linum arenicola* (Small) H.J.P. Winkler— {AFP} Endemic. State Endangered.

*Linum carteri* Small— {AFP} Endemic. State Endangered.



***Linum floridanum*** (Planch.)Trel.— {AFP}

^ *Linum grandiflorum* Desf.— {AFP}

***Linum macrocarpum*** C.M.Rogers— {AFP} State Endangered.

***Linum medium*** (Planch.)Britton var. ***texanum*** (Planch.)Fernald— {AFP}

***Linum smallii*** (C.M.Rogers)K.Bradley & Weakley— {AFP} Endemic. State Endangered.

***Linum striatum*** Walter— {AFP}

***Linum sulcatum*** Riddell var. ***harperi*** (Small)C.M.Rogers— {AFP} Plants dry dark and purple-spotted. Perhaps, var. *sulcatum* (plants pale green when dry, sepals mostly 3.6-5 mm long) does not occur in Florida (Rogers 1963).

^ *Linum usitatissimum* L.— {AFP}

***Linum westii*** C.M.Rogers— {AFP} State Endangered.

## MALPIGHIACEAE {AFP}

1. Leaf blade margin prickly ... *Malpighia coccigera*

1. Leaf blade margin entire [2]

2. Leafy stems conspicuously lenticellate [3]

2. Leafy stems with few to no conspicuous lenticels [5]

3. Shrubs; fruit a drupe ... *Malpighia emarginata*

3. Vines, rarely shrubs; fruit a schizocarp [4]

4. Stems with whitish lenticels; leaf blade secondary veins obscure, not impressed on the upper surface; petals pink to reddish ... *Heteropterys brachiata*

4. Stems with brownish lenticels; leaf blade secondary veins apparent, impressed on the upper surface; petals yellow ... *Stigmaphyllon sagraeanum*

5. Leaf blade spatulate to obovate; fruit a drupe ... *Byrsonima lucida*

5. Leaf blade elliptic to ovate; fruit a schizocarp [6]

6. Leaf blade lateral veins apparent to obscure, flat on the lower surface; calyx lacking glands; fruit dehiscing into unwinged mericarps ... *Galphimia gracilis*

6. Leaf blade lateral veins pronounced, prominent on the lower surface; calyx with a solitary gland; fruit dehiscing into winged mericarps ... *Hiptage benghalensis*

## *Byrsonima* {AFP}

***Byrsonima lucida*** (Mill.) DC.— {AFP} State Threatened.

## *Galphimia* {AFP}

^ *Galphimia gracilis* Bartling— {AFP}

## *Heteropterys* {AFP}

\****Heteropterys brachiata*** (L.)DC.— {AFP}

## *Hiptage* {AFP}

\****Hiptage benghalensis*** (L.)Kurz— {AFP}

## *Malpighia* {AFP}

1. Leaf blade margin prickly ... *Malpighia coccigera*

1. Leaf blade margin entire ... *Malpighia emarginata*

^ *Malpighia coccigera* L.— {AFP}

^ *Malpighia emarginata* Sessé & Moç. ex DC.— {AFP}

## Stigmaphyllon {AFP}

\**Stigmaphyllon sagraeanum* A.Juss.— {AFP}

## PHYLLANTHACEAE {AFP}

1. Herbs ... Phyllanthus

1. Shrubs to trees [2]

2. Leaves 3-foliolate; trees to 30 m ... *Bischofia javanica*

2. Leaves simple (on deciduous lateral branches in some *Phyllanthus*); herbs, shrubs, or small trees to 10 m [3]

3. Ultimate branchlet flat and widened into cladodes with multiple parallel veins and numerous nodes towards the apex; leaves scale-like, caducous, and inconspicuous ... *P. angustifolius*

3. Ultimate branches terete with well developed leaves, not developed into cladodes [4]

4. Plants dioecious; leaf blade broadly rounded, obtuse, to subemarginate at the apex; fruit a dry capsule ... *Heterosavia bahamensis*

4. Plants monoecious; leaf blade acute at the apex; fruits fleshy and berry-like [5]

5. Lateral branches not deciduous; leaf blade acute at the base ... *Flueggea virosa* subsp. *melanthesoides*

5. Lateral branchlets deciduous; leaf blade broadly rounded to broadly acute at the base [6]

6. Leaf blades green or variegated; staminate sepals connate for most of their length; nectary disk absent ... *Breynia disticha*

6. Leaf blades green; staminate sepals connate at the base; nectary disk present ... *Phyllanthus acidus*

## Antidesma

^ *Antidesma bunius* Wall.—

## Bischofia {AFP}

\**Bischofia javanica* Blume— {AFP}

## Breynia {AFP}

^ *Breynia androgyna* (L.) Chakrab. & N.P. Balakr. —

^ *Breynia disticha* J.R. Forst. & G. Forst.— {AFP}

## Flueggea {AFP}

\**Flueggea virosa* (Roxb. ex Willd.) Royle subsp. *melanthesoides* (F. Muell.) G.L. Webster— {AFP}

## Glochidion

\**Glochidion puberum* (L.) Hutch.—

## Heterosavia {AFP}

*Heterosavia bahamensis* (Britton) Petra Hoffm.— {AFP} State Endangered.

**Phyllanthus {AFP}**: The genus has been split with an aim towards monophyletic genera, retaining *Breynia* and *Glochidion* (Bouman et al. 2022), but in that scheme *Phyllanthus* s.str. remains morphologically variable and very poorly distinguished from many proposed genera.

Most of our taxa were placed in *Moeroris*. The traditional *Phyllanthus* is retained here for the time being.

1. Ultimate branchlet flat and widened into cladodes with multiple parallel veins and numerous nodes towards the apex; leaves scale-like, caducous, and inconspicuous ... *P. angustifolius*
1. Plant without cladodes; leaves well developed [2]
2. Floating aquatic; leaf blades corrugated ... *P. fluitans*
2. Terrestrial herb, shrub, or tree; leaf blade flat [3]
3. Shrubs; fruit fleshy ... *P. acidus*
3. Herbs; fruit a dry capsule [4]
4. Nodes of the main stem bearing well developed leaves, flowers, and fruits, without deciduous lateral branchlets [5]
4. Nodes of the main stem bearing scales (rarely well developed leaves) and deciduous lateral branchlets that bear well developed leaves [7]
5. Leaves spirally arranged; pedicels 2–8 mm long; staminate sepals 1.2–1.8 mm long; pistillate sepals 2.8–3.5 mm long; seeds 1.7–1.8 mm long ... *P. liebmannianus* subsp. *platylepis*
5. Leaves distichous; pedicels 0.5–1.5 mm long; staminate sepals 0.5–0.7 mm long; pistillate sepals 0.6–1.4 mm long; seeds 0.7–1.1 mm long [6]
6. Pistillate sepals 0.2–0.3 mm wide; leaf blade vein reticulum clearly visible abaxially; stems glabrous; cymules with 1 staminate and (1–)2–3(–5) pistillate flowers; pistillate nectary cupular, unlobed, enclosing ovary 1/3–1/2 length ... *P. caroliniensis* subsp. *caroliniensis*
6. Pistillate sepals (0.2–)0.3–0.5(–0.7) mm wide; leaf blade vein reticulum obscure or invisible abaxially; stems usually sparsely to densely scabridulous; cymules with 1–2 staminate and 1–2 pistillate flowers; pistillate nectary annular, unlobed or 6-lobed, enclosing ovary basally ... *P. caroliniensis* subsp. *saxicola*
7. Leaf blades hispidulous along the margins of the lower surface, with the basal and marginal veins prominent on the lower surface; staminate pedicels 0.1–0.2 mm long; pistillate pedicels 0.3–0.5 mm long; ovary and capsules tuberculate; seeds transversely ribbed ... *P. urinaria*
7. Leaf blades glabrous or scabridulous on the lower surface, with the basal and marginal veins obscure or not prominent on the lower surface; staminate pedicels 0.2–1.8 mm, pistillate (1–)1.2–7 mm; capsules smooth; seeds verrucose or longitudinally ribbed [8]
8. Leaf blade typically with an acute tip and obovate to broadly elliptic; stamens 5, filaments distinct; pistillate pedicels 2.5–8 mm long, flexuous and pendent in fruit; seeds papillate ... *P. tenellus*
8. Leaf blade obtuse to rounded at the tip, if acute at the tip then narrowly elliptic; stamens 2–3, filaments connate; pistillate pedicels 1–3(–3.5) mm long, spreading in fruit [9]
9. Plant with long internodes and few lateral branches; leaf blade densely but minutely pubescent; stipules of main stems dark brown, auriculate; capsules 1.7–1.9 mm wide; seeds 0.8–0.9 mm ... *P. pentaphyllus*
9. Plant with shorter internodes and several lateral branches; leaf blades glabrous to glabrate; stipules of main stems pale green to pale brown, not auriculate; capsules 1.9–2.7 mm wide; seeds 0.9–1.5 mm [10]
10. Distal inflorescences of solitary pistillate flowers [11]
10. Distal inflorescences of 1 pistillate flower and 1–3 staminate flowers [12]
11. Stems terete or angles obscure; ultimate branchlets scabridulous or not scabridulous; pistillate nectaries subentire; styles mostly appressed ... *P. debilis*
11. Stems usually conspicuously angled; lateral branchlets scabridulous; pistillate nectaries deeply 6–9-lobed; styles ascending to erect ... *P. fraternus*

12. Secondary venation obscure on the leaf blade underside; pistillate nectaries of 3 glands; capsules 2.3-2.7 mm long; seeds 1.1-1.5 mm long ... *P. abnormis*

12. Secondary venation conspicuous on the leaf blade underside; pistillate nectary annular, 5-7-lobed; capsules 1.9-2.1 mm long; seeds 0.9-1.1 mm long ... *P. amarus*

***Phyllanthus abnormis*** Baill.— {AFP} The Florida plants were named *P. garberi* (treated as a subspecies by Levin & Weakley 2023) and differ from *P. abnormis* s.str. by having one staminate flower with 3 stamens and smooth stems. Placed in *Moeroris* (Bouman et al. 2022).

\****Phyllanthus acidus*** (L.)Skeels— {AFP} Also placed in *Cicca* (Bouman et al. 2022).

\****Phyllanthus amarus*** Schumach. & Thonn.— {AFP} Placed in *Moeroris* (Bouman et al. 2022).

^ *Phyllanthus angustifolius* (Sw.)Sw.— {AFP} Retained in *Phyllanthus* s.str. (Bouman et al. 2022).

***Phyllanthus caroliniensis*** Walter subsp. ***caroliniensis***— {AFP} Retained in *Phyllanthus* s.str. (Bouman et al. 2022).

***Phyllanthus caroliniensis*** Walter subsp. ***saxicola*** (Small)G.L.Webster— {AFP} Retained in *Phyllanthus* s.str. (Bouman et al. 2022).

\****Phyllanthus debilis*** Klein ex Willd.— {AFP} Placed in *Moeroris* (Bouman et al. 2022).

^ *Phyllanthus emblica* L.— Placed in *Emblica* as *E. officinalis* (Bouman et al. 2022).

\****Phyllanthus fluitans*** Benth. ex Müll.Arg.— {AFP} Retained in *Phyllanthus* s.str. (Bouman et al. 2022).

\****Phyllanthus fraternus*** G.L.Webster— {AFP}

***Phyllanthus liebmannianus*** Müll.Arg. subsp. ***platylepis*** (Small)G.L.Webster— {AFP} Endemic. Placed in *Nellica* (Bouman et al. 2022). State Endangered.

***Phyllanthus pentaphyllus*** C.Wright ex Griseb.— {AFP} Placed in *Moeroris* (Bouman et al. 2022).

\****Phyllanthus tenellus*** Roxb.— {AFP} Placed in *Moeroris* (Bouman et al. 2022).

\****Phyllanthus urinaria*** L.— {AFP} Placed in *Emblica* (Bouman et al. 2022).

## CHRYSOBALANACEAE {AFP}

1. Shrubs to small trees, usually 1-6 m tall when mature; leaf blade length 1.2-1.5 times width; inflorescence axillary; filaments densely hairy at the base; endocarp longitudinally ribbed  
*Chrysobalanus icaco*

1. Suffruticose plants usually <50 cm tall when mature, rarely to 1.6 m tall; leaf blade length 2.5-3.5 times width; inflorescence terminal; filaments glabrous; endocarp not longitudinally ribbed  
*Geobalanus oblongifolius*

### *Chrysobalanus* {AFP}

***Chrysobalanus icaco*** L.— {AFP}

### *Geobalanus* {AFP}

***Geobalanus oblongifolius*** (Michx.)Small— {AFP}

## ERYTHROXYLACEAE {AFP}

### *Erythroxylum* {AFP}

1. Leaf blades obovate to broadly elliptic, 1.1-2.2 times as long as wide, the margin sometimes revolute, the upper side rather dark green with the lateral veins conspicuous and the reticulate and branching segments less pronounced or obscure, the lower side usually lacking a clearly

longitudinally demarcated whitish medial area along both sides of the midrib; fruiting pedicels 1-4(5) mm long, shorter than the fruits and shorter than the petioles ... *E. confusum*

1. Leaf blades elliptic, 2-3.1 times as long as wide, the margin plane, the upper side color and venation variable, the lower side usually with a clearly longitudinally demarcated whitish medial area along both sides of the midrib; fruiting pedicels (3.5)4-8 mm long, subequal to the fruits and usually subequal to longer than the petioles [2]

2. Leaf blade upper side green to pale, with conspicuous lateral, branching, and reticulate veins; bark mostly smooth to striate ... *E. areolatum*

2. Leaf blade upper side pale to dark green, with obscure venation; bark various [3]

3. Bark verrucose; stipules persistent, the keel minutely fimbriate; flowering stems leafless to leafy; leaf blade dark green, the upper side midrib sharply raised; staminal cup margin denticulate to crenulate ... *E. coca*

3. Bark smooth; stipules disintegrating, marcescent, or persistent, the keel entire; flowering stems leafy; leaf blade green to yellowish, the upper side midrib flat; staminal cup margin entire ... *E. novogranatense*

^ *Erythroxylum areolatum* Britton—

^ *Erythroxylum coca* Lam.— {AFP}

^ *Erythroxylum confusum* Britton— {AFP}

^ *Erythroxylum novogranatense* (D.Morris) Hieron.—

## RHIZOPHORACEAE {AFP}

1. Adventitious prop-roots absent; leaf blade apex sharply acute, the larger blades >11 cm long; sepals and petals 8-14, petals bilobed ... *Bruguiera gymnorhiza*

1. Adventitious prop-roots present; leaf blade apex obtuse, the larger blades mostly <11 cm long; sepals and petals 4, entire ... *Rhizophora mangle*

### *Bruguiera* {AFP}

\**Bruguiera gymnorhiza* (L.) Lam. ex Savigny— {AFP}

### *Rhizophora* {AFP}

*Rhizophora mangle* L.— {AFP}

## PUTRANJIVACEAE {AFP}

### *Drypetes* {AFP}

1. Bark lenticellate, but otherwise smooth (often covered in crustose lichens); petiole sometimes yellow-orange; blade entire or spinose, usually rounded to obtuse at the apex, midrib sometimes yellow, conspicuously coarsely reticulate; sepals 5, densely hairy; male flowers with 8-10 stamens subequal to the sepals; female flowers with 1 stigma; fruit white, 1.5-2.4 cm wide, the endocarp ca. 1.5 mm thick and rigid ... *D. diversifolia*

1. Bark finely furrowed to somewhat platy; petiole mostly green to yellow-green; blade entire, often acuminate at the apex, midrib light green, finely reticulate (often obscure when fresh); sepals 4, ciliate along the margin; male flowers with 4-5 stamens much exerted beyond the sepals; female flowers with 2 stigmas; fruit pinkish orange to red, ca. 1-1.5 cm wide, the endocarp ca. 0.5 mm thick and leathery ... *D. lateriflora*

*Drypetes diversifolia* Krug & Urb.— {AFP} State Endangered.

*Drypetes lateriflora* (Sw.) Krug & Urb.— {AFP} State Threatened.

## PASSIFLORACEAE {AFP}

### Passiflora {AFP}

1. Petiole without glands; leaf blades mostly entire [2]
1. Petiole with glands, or glands inconspicuous; leaf blades entire or toothed [4]
2. Stems, tendrils, leaves, and fruit tomentulose to pubescent ... *P. sexflora*
2. Stems, tendrils, leaves, and fruit glabrate [3]
3. Leaf blade usually bilobed or occasionally obscurely 3-lobed, with conspicuous rows of nectaries; flowers often paired; corolla white ... *P. biflora*
3. Leaf blade usually 3-lobed, lacking nectaries; flower usually solitary; corolla greenish yellow ... *P. lutea*
4. Petiole, leaf blade, and calyx with numerous gland-tipped trichomes [5]
4. Petiole usually with a pair of glands and without gland-tipped trichomes, the leaf blade and calyx without gland-tipped trichomes [6]
5. Petals and sepals pink to white; outer corona filaments 8-15 mm long, the basal portion pink, mauve, blue to purple towards, middle portion white, distal portion pink, blue-mauve, to very pale mauve (nearly white); mature fruit red ... *P. ciliata*
5. Petals and sepals white (sometimes lightly pink tinged distally); outer corona filaments 10-18 mm long, filiform, the basal portion mauve to lilac, distal portion white; mature fruit yellow to orange ... *P. vesicaria*
6. Leaf blade margin entire to undulate [7]
6. Leaf blade margin toothed [11]
7. Stipules foliaceous, clasping; petiolar gland stalked, capitate to cylindrical [8]
7. Stipules linear to subulate; petiolar gland sessile, globular or inconspicuous [9]
8. Petiolar gland capitate; leaf blade sinuses mostly deeply acute ... *P. ×belotii*
8. Petiolar gland cylindrical; leaf blade sinus mostly shallowly rounded ... *P. pallens*
9. Stems and leaves densely tomentulose-puberulent; leaf blade reticulate venation pronounced and prominent on the lower surface; ovary sessile ... *P. multiflora*
9. Stems and leaves glabrate to puberulent; leaf blade reticulate venation mostly obscure to apparent and flat on the lower surface; ovary borne on a gynophore [10]
10. Leaf blade nectaries absent, the blade base cuneate to acute; sepals (2.3)4.0-7.0(8.3) mm long; hypanthium 2.8-4.1 mm wide; androgynophore (1.7)2.2-3.5 mm long; outer coronal filaments 1.2-4.0 mm long; inner coronal filaments less than 1.4 mm long; staminal filaments 1.4-3.0 mm long, pollen yellow; fruits globose or ellipsoid; peninsular Florida ... *P. pallida*
10. Leaf blade nectaries present or absent, the blade base commonly cordate or cuneate to acute; sepals 4.0-14.6(20.5) mm long; hypanthium (3.0-)4.0-8.8 mm wide; androgynophore (2.1)2.7-6.1(12.6) mm long; outer coronal filaments 2.5-8.1 mm long; inner coronal filaments more than 1.4 mm long; staminal filaments 1.6-6.0(6.8) mm long, pollen whitish or yellow; fruits ovoid, ellipsoid or transversely ellipsoid; considered absent from Florida ... *P. suberosa*
11. Leaf blade unlobed ... *P. miniata*
11. Leaf blade usually lobed [12]
12. Petiolar glands inconspicuous; petals and outer corona red ... *P. vitifolia*
12. Petiolar glands conspicuous; petals and outer corona white to purple [13]
13. Petiolar gland ca. mid-petiole; leaf blade usually 5-lobed ... *Passiflora cincinnata* × *incarnata*
13. Petiolar gland in the distal third; leaf blade usually 3-lobed [14]
14. Leaf blade lustrous on the upper surface; bracts subtending flower 15-25 mm long; androgynophore with a 5-lobed swelling at the opening of the floral tube; fruit green-yellow to purple, the pulp yellow to orange ... *P. edulis*

14. Leaf blade dull on the upper surface; bracts subtending flower 3-8 mm long; androgynophore lacking an evident swelling at the opening of the floral tube; fruit green to greenish yellow, the pulp whitish to pale yellow ... *P. incarnata*

\**Passiflora biflora* Lam.— {AFP}

^ *Passiflora* × *belotii* Pepin— {AFP}

^ *Passiflora cincinnata* × *P. incarnata*—

\**Passiflora ciliata* Aiton— {AFP}

\**Passiflora edulis* Sims— {AFP}

*Passiflora incarnata* L.— {AFP}

*Passiflora lutea* L.— {AFP}

^ *Passiflora miniata* Vanderpl.— {AFP}

*Passiflora multiflora* L.— {AFP} State Endangered.

*Passiflora pallens* Poepp. ex Mast.— {AFP} State Endangered.

*Passiflora sexflora* Juss.— {AFP} State Endangered.

*Passiflora suberosa* L.— {AFP}

\**Passiflora vesicaria* L.— {AFP}

^ *Passiflora vitifolia* Kunth— {AFP}

## TURNERACEAE {AFP}

### Piriqueta {AFP}

1. Herbs; petiole lacking glands; corolla tube a fimbriate corona ... *Piriqueta*

1. Subshrub to shrubs; petiole apex with 2 glands; corolla tube lacking a corona ... *Turnera*

*Piriqueta cistoides* (L.) Griseb. subsp. *caroliniana* (Walter) Arbo— {AFP} Here following (Arbo 1995: 137) as a variable taxon, widespread from the SE USA to South America. Small (1933) recognized 4 species. The taxonomy could be more finely tuned, but a thorough study is needed.

### Turnera {AFP}

1. Leaf blades to 6(10) cm long; flowers heterostylous, dimorphic; petals white to pale yellow in the distal half, becoming yellow towards the base, the base dark purple ... *T. subulata*

1. Leaf blades to 10(15) cm long; flowers homostylous, monomorphic; petals yellow, becoming yellow-orange at the base ... *T. ulmifolia*

\**Turnera subulata* Sm.— {AFP}

\**Turnera ulmifolia* L.— {AFP}

## SALICACEAE {AFP}

1. Leaf blades gland-dotted with pellucid punctae; flowers bisexual ... *Casearia*

1. Leaf blades not gland-dotted; flowers unisexual [2]

2. Plant dioecious; stems without spines; inflorescence a catkin; perianth absent; fruit a capsule; seeds comose [3]

2. Plants monoecious; stems often with some spines; sepals present, petals present or absent; seeds not comose [4]

3. Leaf buds with several imbricate scales; leaf blades deltoid to broadly ovate; inflorescence pendulous ... *Populus*

- 3. Leaf buds with a single scale; leaf blades oblong-elliptic to lance-linear; inflorescence erect spreading, to pendulous ... *Salix*
- 4. Leaf margin prickly or entire ... *Xylosma buxifolia*
- 4. Leaf margin toothed [5]
- 5. Leaf teeth 3-7 between the lateral veins; flower bisexual; petals present; fruit a woody capsule ... *Oncoba spinosa*
- 5. Leaf teeth 1-3 between the lateral veins; flower unisexual; petals absent; fruit a berry or drupe [6]
- 6. Leaf blade tip rounded, obtuse, to acute; fruit a drupe with multiple endocarps  
... *Flacourtia indica*
- 6. Leaf blade tip acuminate; fruit a berry with multiple seeds ... *Xylosma congesta*

### Casearia {AFP}

^ *Casearia nitida* (L.) Jacq.— {AFP}

### Flacourtia {AFP}

\* *Flacourtia indica* (Burm.f.) Merr.— {AFP}

### Oncoba {AFP}

^ *Oncoba spinosa* Forssk.— {AFP}

### Populus {AFP}

- 1. Leaf blades white tomentose on the lower surface ... *P. alba*
- 1. Leaf blades glabrous or hairy only along the veins [2]
- 2. Petiole flattened near the blade; leaf blade deltoid, the apex acute to acuminate ... *P. deltoides*
- 2. Petiole mostly terete; leaf blade broadly ovate, the apex obtuse ... *P. heterophylla*

^ *Populus alba* L.— {AFP}

*Populus deltoides* W.Bartram ex Marshall— {AFP}

*Populus heterophylla* L.— {AFP}

### Salix {AFP}

- 1. Leaf blade margin entire, undulate, to obscurely toothed near the apex ... *S. humilis*
- 1. Leaf blade margin regularly toothed [2]
- 2. Mature leaf blades oblong to broadly lanceolate, the tip acute to abruptly acuminate, 2.5-5 cm wide, 2.4-3 times longer than wide ... *S. floridana*
- 2. Mature leaf blades linear-lanceolate to lanceolate, the tip tapered-acue, 0.5-3.5 cm wide, 3-14 times longer than wide [3]
- 3. Shrub to 6 m, with several main stems; foliaceous stipules often present; leaf blade base rounded to subcordate, larger blades 2-3.5 cm wide ... *S. eriocephala*
- 3. Shrub or tree to 20 m, mostly with one to few trunks or main stems; foliaceous stipules present or absent; leaf blade base usually cuneate, acute, to obtuse, larger blades 0.5-2.5 cm wide [4]
- 4. Bud-scale margins connate; catkin 0.9-3.5 cm long, branchlet 0-6 mm long; stamens usually 2, sometimes 1; pistillate bracts persistent ... *S. babylonica*



4. Bud-scale margins distinct, overlapping; catkin 2.5-10 cm long, branchlet 4-35 mm long; stamens 3-7(-9); pistillate bracts deciduous after flowering [5]
5. Shrubs to trees to 10 m; largest medial blades: abaxial surface glaucous; pistillate bracts deciduous or persistent after flowering; pistillate stipe 1.3-5.3 mm long ... *S. caroliniana*
5. Trees to 20+ m; largest medial blades: abaxial surface not glaucous, occasionally thinly glaucous; pistillate bracts deciduous after flowering; pistillate stipe 0.5-1.5 mm long ... *S. nigra*

^ *Salix babylonica* L.— {AFP} Most specimens identified as *Salix babylonica* in North America are probably hybrids partly derived from *S. babylonica*, such as *S. ×sepulcralis* or *S. ×pendulina* (Argus in FNA, vol. 7). Given the difficulty of identification, and for simplicity, the name *S. babylonica* is here used.

***Salix caroliniana*** Michx.— {AFP}

***Salix eriocephala*** Michx.— {AFP} State Endangered.

***Salix floridana*** Chapm.— {AFP} State Endangered.

***Salix humilis*** Marshall— {AFP}

***Salix nigra*** Marshall— {AFP}

### Xylosma {AFP}

1. Leaf blade entire or with few spinose prickles, the tip spinose ... *X. buxifolia*
1. Leaf blade regularly serrate ... *X. congesta*

***Xylosma buxifolia*** A.Gray— {AFP} State Endangered.

^ *Xylosma congesta* (Lour.) Merr.— {AFP}

### VIOLACEAE {AFP}

1. Herb, 5-45 cm tall; leaf blade ovate, reniform, deltate, or divided, mostly 0.5-2 times longer than wide; sepals auriculate; upper and lateral petals >5 mm long, subequaling the lower spurred petal; stamens free ... *Viola*
1. Herb, 20-100 cm tall; leaf blade lanceolate to oblanceolate, mostly 3.5-5.5 times longer than wide; sepals not auriculate; upper and lateral petals 3-5 mm long, smaller than the lower gibbous petal; stamens connate
2. Larger leaf blades 9-17 cm long; corolla greenish white to green ... *Cubelium concolor*
2. Larger leaf blades 2-7.5 cm long; corolla white with green throat and purplish markings ... *Pombalia attenuata*

### *Cubelium* {AFP}

***Cubelium concolor*** (T.F.Forst.) Raf. ex Britton & A.Br.— {AFP} State Endangered.

### *Pombalia* {AFP}

\****Pombalia attenuata*** (Humb. & Bonpl. ex Willd.) Paula-Souza— {AFP}

***Viola*** {AFP} Its taxonomy is a topic of active research and species concepts appear bound to become very finely split.

1. Plant caulescent [2]
1. Plant acaulescent [6]
2. Stipules usually entire; corolla yellow with dark veins especially on the lower petal ... *V. tripartita*

- 2. Stipules pectinate or lobed; corolla white to blue to purple [3]
- 3. Stipules deeply lobed [4]
- 3. Stipules pectinate [5]
- 4. Corolla pale violet with darkened branched veins especially on the lower 3 petals ... *V. bicolor*
- 4. Corolla variable (e.g. white, yellow, red, violet in various combinations) with darkened unbranched streaks especially on the lower 3 petals ... *V. tricolor*
- 5. Aerial stems ascending to erect, not rooting at nodes; leaf blades venation generally concolorous with rest of blade ... *V. labradorica*
- 5. Aerial stems stoloniferous; leaf blades often with darkened venation ... *V. walteri*
- 6. Corolla mostly white with a yellow throat and darkened veins on the lower petal [7]
- 6. Corolla mostly pale blue to violet with a white to pale yellowish white throat and darkened veins on the lower petal [8]
- 7. Leaf blades linear to lanceolate, (2-)2.8-25 times longer than wide, the base generally gradually tapered ... *V. vittata*
- 7. Leaf blades narrowly ovate to ovate-deltate, 1.5–2.5 times longer than wide, the base mostly abruptly rounded to subcordate and then often tapering ... *V. primulifolia*
- 8. Inner leaf blades cleft, deeply toothed, or lobed (outer leaf blades sometimes undivided)
- 8. Leaf blades all undivided [11]
- 9. Leaves and peduncles glabrate; mid-season blades with 7-9 lobes, the middle lobes narrowly elliptic, lanceolate, spatulate, or obovate, (rarely linear), lateral lobes lanceolate or spatulate to falcate, margins usually entire, sometimes serrate, sometimes with narrowly deltate or falcate appendages or teeth, ciliate or eciliate, apex acute to mucronulate ... *V. septemloba*
- 9. Leaves and peduncles pubescent or glabrous; mid-season blades with 3-9 lobes, the middle lobes usually ovate or elliptic to widely obovate, sometimes narrowly elliptic, narrowly ovate, lanceolate, or spatulate to narrowly obovate, lateral lobes elliptic, obdeltate, or spatulate to falcate, smaller lobes similar, apex acute, rounded, blunt, or obtuse [10]
- 10. Leaves and peduncles usually pubescent, rarely glabrous; apex of middle leaf lobe acute; plants of dry to mesic habitats ... *V. palmata* var. *palmata*
- 10. Leaves and peduncles usually glabrous, rarely pubescent; apex of middle leaf lobe rounded, blunt, or obtuse; plants of wet ground. ... *V. palmata* var. *heterophylla*
- 11. Leaf blades densely pubescent throughout ... *V. villosa*
- 11. Leaf blades glabrous to sparsely or unevenly pubescent [12]
- 12. Leaf blades deltate, 1.5-3 times longer than wide ... *V. inconspicua*
- 12. Leaf blades generally ovate, mostly 1-1.5 times longer than wide [13]
- 13. Sepal auricles 1-2 mm long ... *V. sororia*
- 13. Sepal auricles 2-6 mm long ... *V. cucullata*

***Viola cucullata*** Aiton— {AFP}

^ *Viola inconspicua* Blume— {AFP}

^ *Viola labradorica* Schrank— {AFP}

***Viola palmata*** L.— {AFP}

***Viola primulifolia*** L.— {AFP}

***Viola rafinesquei*** Greene— {AFP}

***Viola septemloba*** Leconte—

***Viola sororia*** Willd.— {AFP}

^ *Viola tricolor* L.— {AFP}

***Viola tripartita*** Elliott— {AFP} State Endangered.

***Viola villosa*** Walter— {AFP}

***Viola vittata*** Greene— {AFP}

*Viola walteri* House— {AFP}

## OXALIDALES

### ELAEOCARPACEAE

#### *Elaeocarpus*

^ *Elaeocarpus decipiens* F.B.Forbes & Hemsl.—Sometimes subsumed under *E. sylvestris* which has smaller fruits (1-1.2 cm long, 0.5-0.8 cm wide) and leaf blades more obovate with 4-5 lateral vein pairs (Tang & Phengklai 2007).

### OXALIDACEAE {AFP}

1. Plants caulescent, stoloniferous; sepals without orange-brown callosities; petals yellow (*O. corniculata* group) ... Key A

1. Plants acaulescent, with a bulb, rhizome, or taproot; sepals typically with orange-brown callosities; petals white to pink to purple ... Key B

Key A:

1. Petals 4-8 mm long, mostly subequal to shorter than the leaflets [2]

1. Petals 6-20(23) mm long, mostly subequal to longer than the leaflets [5]

2. Rhizomes and stolons absent; stem herbaceous, prostrate or decumbent, rooting at nodes, sparsely and loosely strigose to strigose-villous or villous; stipules oblong, margins with wide, free flanges, apical auricles free; seeds brown, transverse ridges brown ... *O. corniculata*

2. Rhizomes or stolons usually present; stems herbaceous or becoming woody proximally, erect to ascending, sometimes decumbent, rarely rooting at nodes, glabrous, glabrate, strigillose, strigose, or sometimes sparsely villous proximally; stipules rudimentary or apparently absent, or, if oblong, margins narrowly to very narrowly flanged or without free portions, apical auricles slightly free or absent; seeds brown to blackish brown, transverse ridges brown, white, or with grayish or white lines [3]

3. Stems herbaceous, glabrous, glabrate, or sparsely to moderately strigose, sometimes sparsely villous proximally, hairs slightly curved, antrorse ... *O. florida*

3. Stems usually evenly strigose to strigillose, hairs straight, antrorsely appressed to closely ascending [4]

4. Inflorescence of 1-3(8) flowers; flowers mostly homostylous; petals (2.5)4-8 mm long ... *O. dillenii*

4. Inflorescence of (2)3-5(8) flowers; flowers distylous; petals 6-15 mm long ... *O. texana*

5. Plants 20-60(90) cm tall; petioles, and usually stems, with septate and nonseptate hairs; inflorescences regular, irregular, or umbelliform cymes; flowers exerted above or at level of leaves ... *O. stricta*

5. Plants 5-20(40) cm tall; petioles and stems with nonseptate hairs; inflorescences umbelliform cymes; flowers well exerted above level of leaves [6]

6. Plants caespitose or weakly colonial; pedicels strigose, hairs short, curved antrorsely; petals 9-15 mm long; fruit glabrate to puberulent or sparsely hirsute-strigose, hairs short; wide variety of habitats, including limestone ... *O. coloreana*

6. Plants strongly colonial; pedicels villous, hairs long, spreading; petals (13)15-20(23) mm long; fruit sparsely to densely hirsute-pilose, hairs long; calcareous habitats ... *O. macrantha*

Key B:

1. Leaflets obdeltoid [2]

1. Leaflets obcordate [3]

- 2. Plant with a scaly bulb or bulblets; petals 8-12 mm long; fruit 3-8 mm long ... *O. intermedia*
- 2. Plant with a scaly rhizome; petals 15-22 mm long; fruit 12-18 mm long ... *O. triangularis*
- 3. Plant with a segmented rhizome, scaly when young; leaf blades pilose on the upper surface; sepals moderately to densely pilose ... *O. articulata*
- 3. Plant with a scaly bulb or bulblets; leaf blades glabrous on the upper surface; sepals glabrous to pubescent only at the tip [4]
- 4. Leaflets without orange-brown callosities; inflorescence with 1-3 flowers ... *O. hispidula*
- 4. Leaflets with orange-brown callosities, at least on the margins or at the sinus; inflorescence usually with 2-14 flowers [5]
- 5. Leaflets 2.5-4.5 cm long, with orange-brown callosities along the margins and sometimes elsewhere; inflorescence usually with 3-14 flowers ... *O. debilis*
- 5. Leaflets 0.8-1.5 cm long, with orange-brown callosities only at the sinus; inflorescence usually with 2-8 flowers ... *O. violacea*

### **Oxalis** {AFP}

- \****Oxalis articulata*** Savigny— {AFP}
- Oxalis corniculata*** L.— {AFP}
- \****Oxalis debilis*** Kunth— {AFP}
- \****Oxalis hispidula*** Zucc.— {AFP}
- \****Oxalis intermedia*** A.Rich.— {AFP}
- Oxalis macrantha*** (Trel.)Small— {AFP}
- ^ ***Oxalis triangularis*** A.St.-Hil.— {AFP}
- Oxalis violacea*** L.— {AFP}

## SAPINDALES

### SAPINDACEAE {AFP}

- 1. Vines, with axillary tendrils ... *Cardiospermum*
- 1. Shrubs or trees, without tendrils [2]
- 2. Leaves opposite [3]
- 2. Leaves alternate [4]
- 3. Leaves simple or trifoliolate or pinnately compound; fruit a samaroid schizocarp ... *Acer*
- 3. Leaves palmately compound, with 5-7 leaflets; fruit a loculicidal capsule ... *Aesculus pavia*
- 4. Leaves simple ... *Dodonaea*
- 4. Leaves compound [5]
- 5. Leaves trifoliolate ... *Hypelate trifoliata*
- 5. Leaves pinnately or bipinnately compound or bifoliolate [6]
- 6. Leaves usually with 2-4 leaflets in 1-2 pairs [7]
- 6. Leaves usually with more than 4 leaflets [8]
- 7. Petiole ca. <1/3 length of the lower leaflet; petiole or rachis not winged; inflorescence branches corymbiform cymes; flowers 5-merous ... *Exothea paniculata*
- 7. Petiole >1/2 length of the lower leaflet; petiole or rachis sometimes winged; inflorescence branches racemose; flowers 4-merous ... *Melicoccus*
- 8. Leaves bipinnately compound ... *Koelreuteria*
- 8. Leaves pinnately compound [9]
- 9. Leaflets crenate ... *Cupania glabra*
- 9. Leaflets entire [10]

- 10. Fruit a dehiscent capsule [11]
- 10. Fruit indehiscent [12]
- 11. Leaflet secondary veins spreading to ascending into a conspicuous submarginal vein; locules 1-seeded ... *Cupaniopsis anacardioides*
- 11. Leaflet secondary veins arcuate; locules 2- to several-seeded ... *Harpullia arborea*
- 12. Petiole longer than rachis internodes; petiole or rachis not winged; petals not clawed, without basal scales; fruit rugose to lightly tuberculate ... *Dimocarpus longan*
- 12. Petiole subequal to rachis internodes; petiole or rachis sometimes winged; petals clawed, with or without 1-2 basal scales; fruit smooth or nearly so ... *Sapindus*

### **Acer** {AFP}

- 1. Young twigs green to purplish, often glaucous; bud scales white tomentose to villous, especially near the apex; leaves pinnately compound, with 3-7(-9) ... *A. negundo*
- 1. Young twigs mostly red, brown, to gray, sometimes green at first; bud scales pubescent, strigose, or glabrous and ciliate along the margin; leaves simple [2]
- 2. Buds and the bud scales acute at the tip; leaf blade margin mostly with few rounded or blunt lobes, otherwise subentire; flowers in terminal clusters, appearing with the leaves [3]
- 2. Buds and the bud scales rounded at the tip; leaf blade margin mostly regularly dentate, serrate, to doubly serrate; flowers in axillary clusters, appearing before the leaves [4]
- 3. Leaf blade with the lower surface glaucous, the lobes usually widest near the middle and slightly narrowed at the base ... *A. floridanum*
- 3. Leaf blade with the lower surface green, the lobes usually widest and slightly flared at the base ... *A. leucoderme*
- 4. Leaf blade sinus mostly half or less the length from the midvein to the lobe tip; petals present (similar to the sepals) (*A. rubrum*) ... Key A
- 4. Leaf blade sinus more than half the length from the midvein to the lobe tip; petals absent ... *A. saccharinum*

Key A: varieties of *A. rubrum* (adapted from [Ellis 1963](#), who cited for each entity a series of specimens nearly throughout Florida)

- 1. Young stems and leaf blade lower surface mostly persistently tomentose; leaf blades toothed to subentire; fruit 2.7-5 cm long, 0.8-1.5 cm wide; seeds 6.3-8.2 mm long ... *A. rubrum* var. *drummondii*
- 1. Young stems and leaf blade lower surface glabrous to pubescent or tomentose, dense pubescence usually not persistent; leaf blades toothed; fruit 1-2.8 cm long, 0.4-0.9 cm wide; seeds 3.9-6.6 mm long [2]
- 2. Leaf blade with 5 major veins and usually 5 major lobes (basal ones sometimes reduced) ... *A. rubrum* var. *rubrum*
- 2. Leaf blade with 3 major veins and (0)3 major lobes ... *A. rubrum* var. *trilobum*

***Acer floridanum*** Chapm.— {AFP} Sometimes placed as a subspecies of *A. saccharum* (e.g. by Desmarais).

***Acer leucoderme*** Small— {AFP} Sometimes placed as a subspecies of *A. saccharum* (e.g. by Desmarais).

***Acer negundo*** L.— {AFP}

***Acer rubrum*** L. var. ***drummondii***— {AFP} Treated as a species by Ellis (1963), who observed chromosome counts of  $2n \sim 65$  and was unable to cross it with var. *rubrum* during one

attempt in Tennessee. Ellis did mention that a few specimens were intermediate with *A. rubrum*.

***Acer rubrum*** L. var. ***rubrum***— {AFP} Ellis observed chromosome counts of  $2n=78$  for vars. *rubrum* and *trilobum* (as var. *tridens*). Phylogeography was investigated by Saeki et al. (2011).

***Acer rubrum*** L. var. ***trilobum*** — {AFP}

***Acer saccharinum*** L.— {AFP} Ellis (1963) observed hybrids with *A. rubrum* north of the Ohio River.

**Aesculus** {AFP}

***Aesculus pavia*** L.— {AFP}

**Blighia**

^ *Blighia sapida* K.D.Koenig—

**Cardiospermum** {AFP}

1. Fruit 0.9-1.3 cm long; seed 3-4 mm wide, the hilum cordate ... C. microcarpum

1. Fruit 2-4 cm long; seed 3-6 mm wide, the hilum semi-circular to cordate [2]

2. Seed hilum semi-circular and emarginate to only slightly cordate,  $2/5-3/5$  as wide as the seed; seed 3-4 mm wide ... C. corindum

2. Seed hilum broadly to strongly cordate with 2 distinct lobes, as wide as or nearly as wide as the seed; seed 5-6 mm wide ... C. halicacabum

***Cardiospermum corindum*** L.— {AFP}

\****Cardiospermum halicacabum*** L.— {AFP}

***Cardiospermum microcarpum*** Kunth— {AFP}

**Cupania** {AFP}

***Cupania glabra*** Sw.— {AFP} State Endangered. Monroe Co. keys.

**Cupaniopsis** {AFP}

\****Cupaniopsis anacardioides*** (A.Rich.)Radlk.— {AFP}

**Dimocarpus** {AFP}

^ *Dimocarpus longan* Lour.— {AFP}

**Dodonaea** {AFP}

1. Leaf blade tip mostly broadly rounded to truncate, the lateral veins adaxially mostly not more pronounced than the reticulate veins; flower unisexual; fruit usually with 3-4 wings, infrequently 2, 4-7 mm long, the wings 2-4 mm wide ... D. elaeagnoides

1. Leaf blade tip mostly bluntly acute to apiculate, the lateral veins adaxially mostly more pronounced than the reticulate veins; flower bisexual; fruit usually with 2-3 wings, infrequently 4, 9-13 mm long, the wings 4-6 mm wide [2]

1. Leaves 4.2-7.7 times longer than wide; primarily west coast and inland, rare on east coast ... D. viscosa var. angustifolia

1. Leaves 3.5-4.1 times longer than wide; primarily east coast ... D. viscosa var. viscosa

***Dodonaea elaeagnoides*** Rudolphi ex Ledeb. & Alderst.— {AFP} State Endangered. Monroe Co. keys; cultivated and sparingly naturalized elsewhere (Lee Co.).

***Dodonaea viscosa*** Jacq.— {AFP} Two morphotypes are sometimes considered, but types of infraspecific names hail from India.

### Exothea {AFP}

***Exothea paniculata*** (Juss.)Radlk.— {AFP} South Florida.

### Filicium

^ *Filicium decipiens* (Wight. & Arn.)Thwaites—

### Harpullia {AFP}

^ *Harpullia arborea* (Blanco)Radlk.— {AFP}

### Hypelate {AFP}

***Hypelate trifoliata*** Sw.— {AFP} State Endangered.

### Koelreuteria {AFP}

Sometimes 1. Leaves 1-pinnate (rarely bipinnate), the leaflets coarsely crenate-serrate to pinnatisect-lobulate; capsule valves ovate to ovate-lanceolate, tip acute, immature greenish to tawny, mature dark lustrous brown ... *K. paniculata*

1. Leaves bipinnate, the leaflets entire to serrate; capsule valves broadly elliptic to suborbicular, immature reddish purple, mature brown to tawny [2]

2. Leaflets weakly oblique, entire to regularly serrate; petals 4(5); calyx lobes fimbriate-glandular; capsule valves 3.7-6.6 cm long, 3-5 cm wide ... *K. bipinnata*

2. Leaflets strongly oblique, entire to irregularly crenate-serrate (proximal leaflets sometimes pinnatisect); petals 4-5(6); calyx lobes ciliate-glandular; capsule valves 3.4-5(6) cm long, (2.5)3-4.6 cm wide ... *K. elegans*

\* ***Koelreuteria bipinnata*** Franch.— {AFP}

\* ***Koelreuteria elegans*** (Seem.)A.C.Sm. subsp. ***formosana*** (Hayata)F.G.Mey.— {AFP}

^ *Koelreuteria paniculata* Laxm.—Rare in cultivation in FL, but often misapplied.

### Litchi

^ *Litchi chinensis* Sonn.—

### Melicoccus {AFP}

1. Leaflet tip obscurely acuminate, the acumen 1-7 mm long; perianth 4-merous; stamens extrorse; ovary not septate ... *M. bijugatus*

1. Leaflet tip abruptly acuminate, the acumen 8-30 mm long; perianth 5-merous; stamens introrse; ovary septate ... *M. pedicellaris*

^ *Melicoccus bijugatus* Jacq.— {AFP} Sparingly naturalized in south Florida.

^ *Melicoccus pedicellaris* (Sagot ex Radlk.)Acev.-Rodr.— {AFP} Putatively naturalized historic record from Miami-Dade Co. (NY).

### Sapindus {AFP}

1. Petiolule and leaflet lower surface along base of midrib densely villous; leaflets 10–20, the blade 0.6–3 cm wide, 2.5–17 times longer than wide; mature fruit lobe (mericarp) 8–14 mm wide; seed 6–9 mm wide ... *S. drummondii*

1. Petiolule and leaflet lower surface along base of midrib sparsely to moderately pubescent or glabrous; leaflets 6–14(16), the blade 1.5–8.5 cm wide, 2.5–6 times longer than wide; mature fruit lobe (mericarp) 14–25 mm wide; seed 9–15 mm wide [2]

2. Leaf rachis winged or unwinged, sometimes the wings wider than the rachis; leaflets 4–8(12) per leaf, 1.8–3.5(4.5) times longer than wide; upper surface of petal lacking a basal appendage; freeze-intolerant, evergreen or only briefly deciduous just before the new flush of leaves, shoots lacking foliaceous cataphylls (only non-foliaceous bud scales present); flowering Sep–Feb; germination hypogeal and cryptocotylar, first true leaves simple ... *S. saponaria*)

2. Leaf rachis unwinged, or very narrowly winged, very rarely strongly winged; leaflets 6–15 per leaf, 3–6 times longer than wide; upper surface of petal with 2 densely pilose appendages 0.5–1.5 mm long arising near the petal blade base or claw apex; freeze-tolerant, winter deciduous, in the following spring new shoots with 2–3 oblong to obovate green, foliaceous cataphylls; flowering Apr–June; germination epigeal and phanerocotylar, first true leaves compound [3]

4. Petiolule 0–3 mm long; leaflet blade lanceolate to ovate-lanceolate, 1.5–4 cm wide, 3–6 times longer than wide, adaxially the blade usually not sunken along the midrib, at mid-blade the midrib to 0.2 mm high, the midrib and secondary veins pale green, tertiary and quaternary veins nearly concolorous with the blade surface; exduates lacking or these clear adaxially along the rachis, leaflet midrib, and abaxially on the blade surface (also present ephemerally on developing leaves); mature fruit lobe (mericarp) 14–18 mm wide ... *S. marginatus*

4. Petiolule 1–10 mm long; leaflet blade ovate-lanceolate to ovate-elliptic, 1.5–8.5 cm wide, 2.5–5 times longer than wide, adaxially the blade often sunken along the midrib, at mid-blade the midrib to 0.4 mm high, the midrib and secondary veins whitish green to pale green, tertiary and quaternary veins conspicuous and discolored from the blade surface; reddish, orangish, to yellowish exudates present adaxially along the rachis and leaflet midrib, usually abaxially on the leaflet blade surface especially near the base of the midrib (also present ephemerally on developing leaves); mature fruit lobe (mericarp) (15)20–25 mm wide ... *S. mukorossi*

^ *Sapindus drummondii* Hook. & Arn.— {AFP} Collection from Walton Co. (FLAS) probably from cultivation.

***Sapindus marginatus*** Willd.— {AFP} Central and north Florida.

^ *Sapindus mukorossi* Gaertn.— {AFP} Locally naturalizes, otherwise mostly in cultivation.

***Sapindus saponaria*** L.— {AFP} South Florida.

## ANACARDIACEAE {AFP}

1. Leaves simple ... *Mangifera indica*

1. Leaves compound [2]

2. Leaves all trifoliolate [3]

2. Leaves 3- to 25-foliolate, usually some leaves not trifoliolate [4]

3. Leaflets regularly crenate above the base; fruit red and glandular-pubescent ... *Rhus aromatica*

3. Leaflets usually entire, lobate, or with irregular and few teeth; fruit white to greenish white and glabrate ... *Toxicodendron*

4. Leaflets 3–7 and petiolules mostly 1–2 cm long ... *Metopium toxiferum*

4. Leaflets 3–25 and petiolules 1 cm long or less [5]

5. Fruit 1.5–3.5 cm long [6]

5. Fruit 0.2–0.7 cm long [7]



- 6. Leaflets entire, 2.5-30 cm long; petiolule 0.5-1 cm long ... *Sorindeia madagascariensis*
- 6. Leaflets crenate to serrulate near the tip, 2.5-6 cm long; petiolule 0-0.4 cm long ... *Spondias purpurea*
- 7. Leaflets mostly 9-25; fruit glandular-pubescent ... *Rhus*
- 7. Leaflets mostly 3-11; fruit glabrous [8]
- 8. Petioles 2-4 cm long; rachis sometimes winged; leaflets acute to rounded-obtuse at the tip, the margin sometimes serrate; fruit red ... *Schinus terebinthifolia*
- 8. Petioles 2.5-11 cm long; rachis not winged; leaflets acute to acuminate at the tip, the margin entire; fruit white to greenish white ... *Toxicodendron vernix*

### **Mangifera** {AFP}

^ *Mangifera indica* L.— {AFP} Widely cultivated in the central and southern peninsula especially, where it sparingly naturalizes.

### **Metopium** {AFP}

***Metopium toxiferum*** (L.)Krug & Urb.— {AFP}

### **Rhus** {AFP}

- 1. Leaves with 3 leaflets ... *R. aromatica*
- 1. Leaves mostly with 9-25 leaflets [2]
- 2. Stem, petiole, and leaf rachis glabrous ... *R. glabra*
- 2. Stem, petiole, and leaf rachis pubescent [3]
- 3. Leaflets entire or sometimes a few with crenate margins, narrowly lanceolate to narrowly ovate ... *R. copallinum*
- 3. Leaflets regularly dentate, broadly lanceolate to broadly ovate ... *R. michauxii*

***Rhus aromatica*** Aiton— {AFP}

***Rhus copallinum*** L.— {AFP}

***Rhus glabra*** L.— {AFP}

***Rhus michauxii*** Sarg.— {AFP} Federally Endangered. State Endangered.

### **Schinus** {AFP}

\****Schinus terebinthifolia*** Raddi— {AFP} Peninsula, primarily. Widespread, in numerous habitats, especially disturbed ones.

### **Sorindeia** {AFP}

^ *Sorindeia madagascariensis* DC.— {AFP}

**Spondias** {AFP}: Neotropical members revised by [Mitchell & Daly \(2015\)](#).

- 1. Leaflet apex usually obtuse to retuse, occasionally acute; usually flowering before leaf flush; inflorescence pseudoracemose (botryoid); sepals rotund to ovate; petals red to purple (rarely yellow), spreading to suberect at anthesis; stigmas slightly introrse as ovary develops; fruit maturing red to purple (rarely yellow) ... *S. purpurea*
- 1. Leaflet apex acute to acuminate; flowering with or after leaf flush; inflorescence a much-branched panicle; sepals deltoid, less often triangular or ovate; petals white to cream to greenish-yellow, patent to reflexed at anthesis; stigmas extrorse as ovary develops; fruit maturing yellow to orange(-brown) to green [2]

2. Leaves glabrous, the lateral leaflets usually medially symmetrical, the base usually symmetrical; anthers not entirely exceeding pistil at anthesis; stone continuous with pedicel, the endocarp lacking a fibrous matrix, provided with spiny projections ... *S. dulcis*
2. Leaves usually with some hairs on the petiolules or leaflet base, the lateral leaflets usually medially asymmetrical. the base usually oblique; anthers entirely exceeding pistil at anthesis; stone free from pedicel at maturity, endocarp with a fibrous matrix, lacking spiny projections ... *S. mombin*

^ *Spondias dulcis* Parkinson—

^ *Spondias mombin* L.—

^ *Spondias purpurea* L.— {AFP}

**Toxicodendron** {AFP}: Revised by Gillis (1971).

1. Shrubs to small trees, clonal (without stolons); leaves mostly with 7-15 leaflets; anthers strongly exerted, filaments filiform ... *T. vernix*
1. Vines or low shrubs, stoloniferous; leaves with 3 leaflets; anthers included, filaments subulate towards the base [2]
2. Leaflets mostly broadly elliptic to obovate in outline, widest at or above the middle, the tip truncate, rounded, to obtuse, without tufts of trichomes in the vein axils ... *T. pubescens*
2. Leaflets mostly ovate, widest below the middle, the tip acute to acuminate, with tufts of trichomes in the vein axils of the lower surface ... *T. radicans*

***Toxicodendron pubescens*** Mill.— {AFP} Hybrids with *T. radicans* are thought to occur, though none are known in Florida (Gillis 1971: 416-420, 439).

***Toxicodendron radicans*** (L.)Kuntze— {AFP} Only subsp. *radicans* is known in Florida (Gillis 1971).

***Toxicodendron vernix*** (L.)Kuntze— {AFP}

## BURSERACEAE {AFP}

### *Bursera* {AFP}

***Bursera simaruba*** (L.) Sarg.— {AFP}

## MELIACEAE {AFP}

1. Leaves 2- or 3-pinnately compound; leaflet margin serrate, dentate, or lobed ... *Melia azedarach*
1. Leaves once pinnately compound; leaflet margin entire [2]
2. Leaflets mostly elliptic, symmetric or nearly so ... *Khaya senegalensis*
2. Leaflets ovate to lanceolate, strongly asymmetric with the blade on the distal side of the midrib much larger than the proximal portion ... *Swietenia*

### *Azadirachta* {AFP}

^ *Azadirachta indica* A.Juss.— {AFP}

### *Khaya* {AFP}

^ *Khaya senegalensis* (Desr.)A.Juss.— {AFP}

### *Melia* {AFP}

\**Melia azedarach* L.— {AFP}

### Swietenia {AFP}

1. Leaflets 6-18 cm long, 3-7 cm wide; petals and sepals ciliolate; fruit 12-15 cm long; seed (including the wing) 7.5-10 cm long ... *S. macrophylla*

1. Leaflets 2-6.5 cm long, 1-3.5 cm wide; petals and sepals glabrous; fruit 6-10 cm long; seed (including the wing) 2-5 cm long ... *S. mahagoni*

^ *Swietenia macrophylla* King— {AFP}

***Swietenia mahagoni*** (L.) Jacq.— {AFP} State Threatened. Native to hammocks of southern Everglades and Monroe Co. keys; widely cultivated and sometimes naturalizing.

### RUTACEAE {AFP}

1. Herb or subshrub; leaves mostly bi- to tripinnately compound or divided, usually glaucous ...  
Ruta

1. Shrub or trees; leaves simple, 1-foliolate, 3-foliolate, or pinnately compound, usually not glaucous [2]

2. Leaves simple or 1-foliolate [3]

2. Leaves mostly 3-foliolate or pinnately compound, sparingly 1-foliolate [4]

3. Petiole sometimes winged; largest leaf blade usually >4 cm long; stamens 15 or more; fruit green to yellow to orange to pink, usually >1.5 cm long or wide ... Citrus

3. Petiole not winged; largest leaf blade usually <5 cm long; stamens 10; fruit black, <1.5 cm long or wide ... *Atalantia buxifolia*

4. Leaves and branches mostly opposite to subopposite ... Amyris

4. Leaves and branches alternate [5]

5. Leaflets mostly 4 or more [6]

5. Leaflets mostly 4 or less [7]

6. Fruit indehiscent, a berry ... *Murraya paniculata*

6. Fruit dehiscent, of 1-5 follicles ... *Zanthoxylum*

7. Stems unarmed [8]

7. Stems with spines or thorns [9]

8. Petiole shorter than proximal leaflets; fruit a berry ... *Glycosmis parviflora*

8. Petiole length subequal to proximal leaflets; fruit a samara ... *Ptelea trifoliata*

9. Petiole winged; stamens ca. 20; fruit 4-5 cm wide ... *Citrus trifoliata*

9. Petiole not winged; stamens 6-10; fruit to 1.5 cm wide [#1497](*Triphasia trifolia*)

### Amyris {AFP}

1. Leaflets 3-7, mostly 5-7, the largest ones usually >6 cm long; inflorescence and ovary puberulent; fruit 9-14 mm long ... *A. balsamifera*

1. Leaflets 3-5, mostly 3, the largest ones usually <6 cm long; inflorescence and ovary glabrous; fruit 5-8 mm long ... *A. elemifera*

***Amyris balsamifera*** L.— {AFP} Native to Key Largo, maybe Miami-Dade Co.; extirpated.

***Amyris elemifera*** L.— {AFP}

### Atalantia {AFP}

\****Atalantia buxifolia*** (Poir.) Oliv. ex Benth.— {AFP}

## Bergera {AFP}

^ *Bergera koenigii* L.—

## Casimiroa

^ *Casimiroa edulis* La Llave—

**Citrus** {AFP} Numerous taxa and cultivars are cultivated, many of which may naturalize.

1. Leaflets 3 ... *C. trifoliata*

1. Leaves simple or leaflets 1 [2]

2. Leaves lacking an apparent articulation between the petiole and the blade; fruit to 25 cm long, the rind (pericarp) wider than the pulp (sarcocarp) ... *C. medica*

2. Leaves with a evident articulation between the petiole and the blade; fruit rind (pericarp) narrower than the pulp (sarcocarp) [3]

3. Flower bud and petal outer surface pinkish or purplish [4]

3. Flower bud and petal outer surface white or cream [5]

4. Fruit with a truncate to depressed, sunken nipple at the apex ... *C. ×jambhiri*

4. Fruit with a prominent apical nipple ... *C. ×limon*

5. Flowers to 25 mm wide, petals 8-12 mm long; fruit to 4(-5) cm wide [6]

5. Flowers >25 mm wide, petals 14-25 mm long; fruit 3-15 cm wide [7]

6. Mature fruit with an apical nipple, the rind green to yellow ... *C. ×aurantiifolia*

6. Mature fruit depressed or rounded at the apex, the rind orange ... *C. ×microcarpa*

7. Petiole wings absent, or wing on one side subequal to narrower than the petiole; fruit rind 1(4) mm thick, easily removed, scarcely adherent to sarcocarp ... *C. reticulata*

7. Petiole wing on one side usually subequal to wider than the petiole; fruit rind 5-12 mm thick, adherent to sarcocarp, not easily removed [8]

8. Cotyledons green; fruit 8-14 cm wide (grapefruit) ... *C. ×aurantium*

8. Cotyledons white; fruit 4.5-8 cm wide [9]

9. Crushed leaf with a camphor-like odor; fruit often depressed globose, the rind rough, the juice sour (sour orange) ... *C. ×aurantium*

9. Crushed leaf without a camphor-like odor; fruit subglobose, the rind smooth, the juice sweet (sweet orange) ... *C. ×aurantium*

^ *Citrus ×aurantiifolia* (Christm.)Swingle— {AFP}

\***Citrus ×aurantium** L.— {AFP}

^ *Citrus ×limon* (L.)Osbeck— {AFP}

^ *Citrus medica* L.— {AFP}

^ *Citrus ×microcarpa* Bunge— {AFP}

^ *Citrus reticulata* Blanco— {AFP}

^ *Citrus ×taitensis* Risso— {AFP}

^ *Citrus trifoliata* L.— {AFP}

## Glycosmis {AFP}

\***Glycosmis parviflora** (Sims)Little— {AFP}

## Murraya {AFP}

^ *Murraya paniculata* (L.)Jack— {AFP} Primarily cultivated, but sometimes naturalizing.

## Ptelea {AFP}

***Ptelea trifoliata*** L.— {AFP}

## Ruta

1. Petal margin fimbriate-ciliate, the fimbriae  $\frac{1}{3}$  to  $\frac{1}{2}$  as wide as the petals; locules bluntly acute to mucronate at the tip ... *Ruta chalepensis*

1. Petal margin entire to shallowly fimbriate, the fimbriae short and rarely to  $\frac{1}{4}$  as wide as the petals; locules obtuse to rounded at the tip ... *Ruta graveolens*

^ *Ruta chalepensis* L.— Often confused with *R. graveolens* (which appears rare to absent in Florida).

## Triphasia {AFP}

\****Triphasia trifolia*** (Burm.f.)P.Wilson— {AFP}

## Zanthoxylum {AFP}

1. Leaf paripinnate, without a terminal leaflet ... *Z. spinosum*

1. Leaf imparipinnate, with a terminal leaflet [2]

2. Petiole and leaf rachis winged ... *Z. fagara*

2. Petiole and leaf rachis not winged [3]

3. Plant lacking prickles or spines ... *Z. flavum*

3. Plant usually with prickles and/or spines [4]

4. Stem with a pair of spines at the base of the leaf often present, stems otherwise smooth; leaf pubescent; inflorescence axillary ... *Z. americanum*

4. Stem with prickles distributed along the stem and becoming enlarged on the trunk, without spines in distinct pairs at the leaf base; inflorescence terminal ... *Z. clava-herculis*

***Zanthoxylum americanum*** Mill.— {AFP} State Endangered.

***Zanthoxylum coriaceum*** — {AFP} State Endangered. According to the latest revision, this is *Z. spinosum*, but due to seemingly differing morphologies and biogeography, *Z. coriaceum* is retained.

***Zanthoxylum clava-herculis*** L.— {AFP}

***Zanthoxylum fagara*** (L.)Sarg.— {AFP}

***Zanthoxylum flavum*** Vahl— {AFP} State Endangered.

## SIMAROUBACEAE {AFP}

1. Leaves simple; inflorescence a bracteate catkin ... *Leitneria floridana*

1. Leaves compound; inflorescence a panicle with inconspicuous bracts [2]

2. Leaves with a terminal leaflet arising straight from the end of the rachis, the leaflets opposite to alternate, lanceolate-ovate, the tip sharply acute to acuminate, and the margins with gland-tipped teeth; fruit samaroid ... *Ailanthus altissima*

2. Leaves without a terminal leaflet or the terminal leaflet oblique to the rachis, the leaflets subopposite to alternate, broadly elliptic, the tip rounded to bluntly acute, and the margins entire; fruit a drupe ... *Simarouba glauca*

## Ailanthus {AFP}

^ *Ailanthus altissima* (Mill.)Swingle— {AFP} Sparingly cultivated, and rarely naturalized (unlike northern USA, where it is widely naturalized).

## Leitneria {AFP}

*Leitneria floridana* Chapm.— {AFP} State Threatened.

## Simarouba {AFP}

*Simarouba glauca* DC.— {AFP}

# BRASSICALES

## CARICACEAE {AFP}

### Carica {AFP}

1. Plants dioecious; fruits globose, <6 cm wide and long (wild/native form) ... *C. papaya*
1. Plant trioecious; fruits elongate, >6 cm wide or long (domesticated form) ... *C. papaya*

***Carica papaya*** L.— {AFP} The domestication of the papaya probably began in southern Mexico and Central America (Carvalho & Renner 2012). This species is considered native to the state, as seeds of papaya dated to around the year 300 AD were found in Lee Co. (Ward 2011). Papaya is widely cultivated in Florida and certainly has escaped and naturalized from some of the cultivated strains. Small-fruited specimens of coastal and southern Florida (e.g. Franck 2615, Judd 5970) may represent native forms (Ward 2011).

## MORINGACEAE {AFP}

### Moringa {AFP}

^ *Moringa oleifera* Lam.— {AFP} Sparingly naturalized.

## BATACEAE {AFP}

### Batis {AFP}

***Batis maritima*** L.— {AFP}

## BRASSICACEAE {AFP}

1. Petals (4)5-25 mm long [2]
1. Petals 0-5.5 mm long, or absent [15]
2. Petals white to pink or purple [3]
2. Petals pale yellow to yellow [10]
3. All leaf blades simple and entire (if sinuate then cordate-clasping) [4]
3. At least some (especially more basal) leaf blades lobed (sometimes obscurely), compound, pinnatisect, or toothed to sinuate [5]
4. Stamens (at least some) included; ovary/fruit sessile (without a distinct gynophore) on the pedicel ... *Conringia orientalis*)
4. Stamens exerted; ovary/fruit stipitate on distinct gynophores, distinct from the subtending pedicel ... *Warea*
5. Cauline leaves palmately compound or the blade palmately lobed with deep sinuses ... *Cardamine concatenata*
5. Cauline leaves simple and unlobed or pinnately compound, pinnately lobed, to pinnatisect [6]
6. Petals 15-25 mm long, the veins often conspicuously discoloured and darker than the rest of the petal ... *Raphanus*

6. Petals 5-12(16) mm long, the veins inconspicuous to slightly discoloured from the rest of the petals [7]
7. Fruit terete [8]
7. Fruit flattened [9]
8. Fruit 2-segmented with a transverse fragmentation into an apical and a basal fragment; primarily of maritime habitats ... *Cakile*
8. Fruit not fragmenting transversely into 2 segments; primarily of disturbed sites ... *Sisymbrium altissimum*
9. Leaves obscurely lobed, toothed, to sinuate ... *Cardamine bulbosa*
9. Leaves pinnatisect or pinnately lobed ... *Erucastrum gallicum*
10. Fruit truncate at tip, scarcely if at all tapered ... *Sisymbrium altissimum*
10. Fruit tapered at tip to a persistent style base [11]
11. Lower flowers/fruits each subtended by a leaf or leafy bract ... *Erucastrum gallicum*
11. Lower flowers/fruits usually ebracteate or, rarely, proximalmost 1 or 2 flowers bracteate [12]
12. Plant often hispid or scabrous; petal veins often conspicuously discoloured and darker than the rest of the petal; fruit with subtle veins between the seeds ... *Raphanus raphanistrum*
12. Plant glabrous to hispid; petal veins inconspicuous to slightly discoloured from the rest of the petals; fruit with subtle to strong primary venation [13]
13. Fruit valves 3-veined ... *Sinapis arvensis*
13. Fruit longitudinally 1-veined [14]
14. Sepals usually erect or ascending, rarely spreading; seeds in 1 row per locule ... *Brassica*
14. Sepals usually ascending to spreading; seeds in 2 rows per locule ... *Diplotaxis*
15. Fruit 0.5-1.5 as long as wide, the fruit septum parallel or contiguous with the gynophore or pedicel (angustiseptate) or with 1-2 seeds if latiseptate [16]
15. Fruit 2-40 times longer than wide, the fruit septa perpendicular to the gynophore or pedicel (latiseptate) and with >2 seeds [18]
16. Fruit obdeltoid to obcordate and acute towards the base ... *Capsella bursapastoris*
16. Fruit generally rounded or bi-orbicular [17]
17. Cauline leaves petiolate and unlobed ... *Lobularia maritima*
17. Cauline leaves sessile or pinnate to pinnatisect [18]
18. Fruit 1-6 mm long, with 1 seed per locule ... *Lepidium*
18. Fruit 6-20 mm long, with >1 seed per locule ... *Thlaspi arvense*
19. Leaves simple, entire to dentate [20]
19. At least some leaves pinnatifid, lobate (sometimes obscurely), or dissected [23]
20. Trichomes simple or absent; fruit 4-10 cm long ... *Boechera canadensis*
20. Trichomes cruciform or stellate with 2-8 rays; fruit 0.2-4 cm long [21]
21. Herb to 150 cm tall; fruit cylindrical, 1-4 cm long ... *Erysimum cheiranthoides*
21. Herb to 40 cm tall; fruit flattened, 0.2-1.6 cm long [22]
22. Leaf blade surfaces with cruciform trichomes; petals 2-3 mm long; fruit 2-6 mm long ... *Abdra brachycarpa*
22. Leaf blade surfaces with simple and 2-7-rayed trichomes; petals 3.5-4 mm long; fruit 5-15 mm long ... *Tomostima cuneifolia*
23. Trichomes dendritic ... *Descurainia pinnata*
23. Trichomes simple or absent [24]
24. Fruit truncate at tip, scarcely if at all tapered ... *Sisymbrium*
24. Fruit tapered at tip (sometimes abruptly) to a persistent style base [11]
25. Fruit flattened [26]
25. Fruit cylindrical or roughly so [27]
26. Fruit valves dehiscent elastically, replum flattened; seeds not winged ... *Cardamine*

26. Fruit valves not dehiscent elastically, replum rounded; seeds winged ... *Planodes virginica*  
 27. Pedicel 5-17(24) mm long; petals white; fruit (0.6)1-3 cm long ... *Nasturtium*  
 27. Pedicel 1-15 mm long; petals absent, white, or yellow; fruit 0.4-1.4(2.1) cm long ... *Rorippa*

### **Abdra** {AFP}

***Abdra brachycarpa*** (Nutt. ex Torr. & A.Gray)Greene— {AFP}

### **Boechera** {AFP}

***Boechera canadensis*** (L.)Al-Shehbaz— {AFP} State Endangered.

### **Brassica** {AFP}

1. Cauline leaves auriculate or amplexicaul at the base [2]
1. Cauline leaves tapered at the base, not auriculate and not amplexicaul [4]
2. Biennial to perennial; petals (15)18-25(30) mm; terminal segments of fruits (3)4-11 mm long ...  
*B. oleracea*
2. Annual to biennial; petals 6-16 mm; terminal segments of fruits (5)8-22 mm long [3]
3. Flowers usually not overtopping buds, rarely at same level, when open; petals pale yellow, 10-16 mm long; terminal segments of fruits (5)9-16 mm long ... *B. napus*
3. Flowers overtopping or equaling buds when open; petals deep yellow, 6-11(13) mm long; terminal segments of fruits 8-22 mm long ... *B. rapa*
4. Plant glabrous to glabrate; pedicels elongate, slender; silique terete, loosely ascending, (2)3-6 cm long ... *B. juncea*
4. Plant hirsute; pedicels short, thick; silique 4-angled, closely appressed to rachis, 1-2.7 cm long ... *B. nigra*

\****Brassica juncea*** (L.)Czern.— {AFP}

^ ***Brassica napus*** L.— {AFP}

^ ***Brassica nigra*** (L.)W.D.J.Koch— {AFP}

^ ***Brassica oleracea*** L.—

\****Brassica rapa*** L.— {AFP}

**Cakile** {AFP} It is quite possible that essentially all populations in Florida are within a continuum of one interbreeding taxon, and alternative taxonomies could be considered.

1. Petal claw not distinct; fruit 8-ribbed, (3)5-9 mm wide, beak somewhat flattened, the apex retuse or blunt (rarely acute) ... *C. edentula* subsp. *harperi*
1. Petal claw distinct; fruit terete to 4-angled, 3-4 mm wide, beak conic to fusiform, the apex acute [2]
2. Stems erect to ascending; leaves usually fleshy; petals lavender to white, 1.3-3 mm wide; infructescence usually 10-20 cm long; fruiting pedicel 2.5-7 mm long (mostly north of Lake Okeechobee) ... *C. constricta*
2. Stems erect to prostrate; leaves not especially fleshy; petals white, rarely lavender, 3-4.5 mm wide; infructescence usually 20-30 cm long; fruiting pedicel 1.5-4 mm long (Pinellas and Brevard counties southward) [3]
3. Leaf blade margins usually sinuately or crenately lobed, rarely pinnatisect; fruits lanceoloid, apex not tapering abruptly, terminal segment at least 2 times length of proximal segment (southeastern coast) ... *C. lanceolata* subsp. *lanceolata*



3. Leaf blade margins pinnatifid or entire; fruits fusiform or lanceoloid, apex tapering abruptly, terminal segment less than 2 times length of proximal segment [4]

4. Fruits fusiform, not constricted at articulation, 4- or 8-sulcate (southern coast) ... *C. lanceolata* subsp. *fusiformis*

4. Fruits lanceoloid, usually constricted at articulation, weakly 4-angled or terete (western coast) ... *C. lanceolata* subsp. *pseudoconstricta*

***Cakile constricta*** Rodman—

***Cakile edentula*** (Bigel.) Hook. subsp. ***harperi*** (Small) Rodman— {AFP}

***Cakile lanceolata*** (Willd.) O.E. Schulz— {AFP}

**Capsella** {AFP}

\****Capsella bursa-pastoris*** (L.) Medik.— {AFP}

**Cardamine** {AFP}

1. Cauline leaves simple, not lobed (or only scarcely lobed), not pinnatisect ... *C. bulbosa*

1. Cauline leaves (usually at least some) pinnately or palmately compound, or lobed, or pinnatisect [2]

2. Rhizomatous perennial; cauline leaves palmately compound or the blade palmately lobed with deep sinuses ... *C. concatenata*

2. Annual or short-lived, without rhizomes; cauline leaves pinnately compound, or the blade pinnately lobed to pinnatisect [3]

3. Basal leaves rosulate, persistent to anthesis; stem base and petiole hirsute; stamens typically 4 per flower ... *C. hirsuta*

3. Basal leaves often withered by anthesis; stem base and petiole glabrous to sparsely hirsute; stamens 6 per flower [4]

4. Lateral leaflets of cauline leaves narrowly oblong, linear or filiform, 1-3 mm wide; fruits 0.6-0.9 mm wide ... *C. parviflora*

4. Lateral leaflets of cauline leaves orbicular, ovate, elliptic, or oblong, 4-25 mm wide; fruits 0.8-1.5 mm wide [5]

5. Often rather robust herbs; cauline leaves often with generally elliptic to oblong segments or leaflets, cuneate to decurrent at the base and not typically petiolulate ... *C. pensylvanica*

5. Usually rather weak herbs; cauline leaves often with generally obovate to elliptic leaflets or segments, often somewhat petiolulate [6]

6. Middle stem leaflets strikingly hairy on the upper surface; basal leaves rosulate; stem markedly hairy; terminal leaflet of the middle stem leaf one- to seven- (to nine-) lobed with both deep and shallow sinuses; petals are less than two-fold wider than sepals ... *C. flexuosa*

6. Middle stem leaflets predominantly glabrous on the upper surface; basal leaves not rosulate; stem hairy or glabrous basally, glabrous or rarely sparsely hairy in the upper part; terminal leaflet of the middle stem leaf (one-) three- to five- (to seven-) lobed with deep and sharp sinuses; petals are more than two-fold wider than sepals ... *C. occulta*

***Cardamine bulbosa*** (Schreb. ex Muhl.) Britton et al.— {AFP}

***Cardamine concatenata*** (Michx.) O. Schwarz— {AFP}

\****Cardamine hirsuta*** L.— {AFP}

***Cardamine occulta*** Hornem.—

***Cardamine parviflora*** L.— {AFP}

***Cardamine pensylvanica*** Muhl. ex Willd.— {AFP}

## Conringia {AFP}

\**Conringia orientalis* (L.)Dumort.— {AFP}

## Descurainia {AFP}

*Descurainia pinnata* (Walter)Britton— {AFP}

## Diplotaxis {AFP}

1. Annuals to short-lived perennials, without buds on roots; stems frequently scapose, moderately pubescent; gynophores obsolete or to 0.5 mm long ... *D. muralis*

1. Perennials with adventitious buds on roots; stems frequently foliose, glabrescent, or sparsely pubescent basally; gynophores 0.5-3 mm ... *D. tenuifolia*

\**Diplotaxis muralis* (L.)DC.— {AFP}

\**Diplotaxis tenuifolia* (L.)DC.— {AFP}

## Erucastrum {AFP}

\**Erucastrum gallicum* (Willd.)O.E.Schulz— {AFP}

## Erysimum {AFP}

\**Erysimum cheiranthoides* L.— {AFP}

## Lepidium {AFP}

1. Cauline leaves pinnatisect; fruit schizocarpic, separating at the septum into 2 halves, strongly rugose-veined ... *L. didymum*

1. Cauline leaves mostly simple and entire to dentate, rarely pinnatisect; fruit not schizocarpic, smooth to obscurely veined [2]

2. Cauline leaves clasping the stem, the base sagittate to auriculate; fruit (4)5-6.5 mm long ... *L. campestre*

2. Cauline leaves not clasping, the base acute to attenuate; fruit 2-4 mm long [3]

3. Petals absent or 0-0.9 mm long; rachises with straight, slender to subclavate trichomes; fruits obovate to obovate-suborbicular, widest beyond middle ... *L. densiflorum*

3. Petals usually present, rarely rudimentary, 1-2(2.5) mm long; rachises usually with curved, cylindrical trichomes, rarely glabrous; fruits orbicular, widest at middle ... *L. virginicum*

\**Lepidium campestre* (L.)R.Br.— {AFP}

\**Lepidium densiflorum* Schrad.— {AFP}

\**Lepidium didymum* L.— {AFP}

*Lepidium virginicum* L.— {AFP}

## Lobularia {AFP}

^*Lobularia maritima* (L.)Desv.— {AFP}

## Nasturtium {AFP}

1. Leaflets to 2(2.5) cm long; petiole not or scarcely clasping; fruit 1-1.5 mm wide; fruit with seeds in 1 row in each loculus; face of seed very finely alveolate-reticulate (100-150 alveoli per side), dull amber ... *N. floridanum*

1. Leaflets to 4.5 cm long; petiole auriculate-clasping; fruit 2-3 mm wide; fruit with seeds in 2 rows in each loculus; face of seed coarsely alveolate-reticulate (25-50 alveoli per side), shiny amber-brown ... *N. officinale*

***Nasturtium floridanum*** (Al-Shehbaz & Rollins)Al-Shehbaz & R.A.Price— {AFP} Endemic.

\****Nasturtium officinale*** W.T.Aiton— {AFP}

### Planodes {AFP}

***Planodes virginica*** (L.)Greene— {AFP}

### Raphanus {AFP}

1. Petals white to yellow; fruits (2.5)3-8(11) mm wide, strongly constricted between seeds and usually breaking, strongly ribbed, beak narrowly conical ... *R. raphanistrum*

1. Petals white, pink, to purple; fruits (5)7-13(15) mm wide, rarely slightly constricted between seeds and usually not breaking, not ribbed, beak narrowly to broadly conical to linear ... *R. sativus*

\****Raphanus raphanistrum*** L.— {AFP}

\****Raphanus sativus*** L.— {AFP} Naturalized occasionally and cultivated.

### Rorippa {AFP}

1. Rhizomatous, primarily submerged with emergent inflorescences; basal leaves lacking; submerged cauline leaves dissected into filiform segments; petals white ... *R. aquatica*

1. Lacking rhizomes, primarily emergent; basal leaves present or lacking; cauline leaves usually not submerged, pinnatisect to toothed or lobed; petals yellow or absent [2]

2. Pedicels 0.5-2(4) mm long; petals absent ... *R. sessiliflora*

2. Pedicels 1.5-14 mm long; petals present, yellow [2]

3. Fruit 2.5-10 mm long, usually subequal to shorter than pedicel ... *R. palustris*

3. Fruit 8-14 mm long, usually >2 times the pedicel length ... *R. teres*

***Rorippa aquatica*** (Eaton)E.J.Palmer & Steyerm.— {AFP}

***Rorippa palustris*** (L.)Besser— {AFP}

***Rorippa sessiliflora*** (Nutt.)Hitchc.— {AFP}

***Rorippa teres*** (Michx.)Stuckey— {AFP}

### Sinapis {AFP}

\****Sinapis arvensis*** L.— {AFP}

### Sisymbrium {AFP}

1. Fruiting pedicel 1.5-3 mm long, closely appressed to the rachis; fruit 1-2 cm long ... *S. officinale*

1. Fruiting pedicel 5-20 mm long, ascending to spreading; fruit 2.5-12 cm long [2]

2. Stem sparsely to densely hirsute towards the base; fruiting pedicel nearly as thick as the fruit and appearing somewhat indistinct from the fruit ... *S. altissimum*

2. Stem glabrous to sparsely pubescent towards the base; fruiting pedicel thinner than the fruit and obviously distinct from the fruit ... *S. irio*

\****Sisymbrium altissimum*** L.— {AFP}

\**Sisymbrium irio* L.— {AFP}

\**Sisymbrium officinale* (L.)Scop.— {AFP}

**Thlaspi** {AFP}

\**Thlaspi arvense* L.— {AFP}

**Tomostima** {AFP}

*Tomostima cuneifolia* (Nutt. ex Torr. & A.Gray)Al-Shehbaz et al.— {AFP}

**Warea** {AFP}

1. Cauline leaves sessile, the blade rounded or rounded-auriculate at the base [2]

1. Cauline leaves petiolate or the blade cuneate at the base [3]

2. Leaf blade base clasping the stem, amplexicaul to strongly auriculate; central peninsula ... W. amplexifolia

2. Leaf blade base not clasping the stem, obtuse to minutely auriculate; panhandle ... W. sessilifolia

3. Petal claws coarsely papillate to pubescent, margins crisped; gynophores 3-6(7) mm, shorter than the pedicel; peninsula ... W. carteri

3. Petal claws nearly smooth or obscurely papillate, margins entire; gynophores (5)7-11 mm, longer than the pedicel; panhandle ... W. cuneifolia

*Warea amplexifolia* (Nutt.)Nutt.— {AFP} Endemic. Federally Endangered. State Endangered.

*Warea carteri* Small— {AFP} Endemic. Federally Endangered. State Endangered.

*Warea cuneifolia* (Muhl. ex Nutt.)Nutt.— {AFP} State Endangered.

*Warea sessilifolia* Nash— {AFP}

**CAPPARACEAE** {AFP} The genera proposed are rather distinctive, although it had been proposed to place them all in an expanded *Morisonia*.

1. Plant glabrous to puberulent; young stems roughly terete; stamens 60-160 per flower; seed embedded in a white pulp ... *Cynophalla flexuosa*

1. Plant lepidote, especially the young branches and lower leaf surface; young stems usually angular; stamens 15-50 per flower; seed embedded in a reddish pulp ... *Quadrella jamaicensis*

**Cynophalla** {AFP}

*Cynophalla flexuosa* (L.)J.Presl— {AFP}

**Quadrella** {AFP}

*Quadrella jamaicensis* (Jacq.)J.Presl— {AFP}

**CLEOMACEAE** {AFP} Some opt to include all under an expansive *Cleome*, while others recognize several genera as done here.

1. Leaflets linear, 0.5-2 mm wide ... *Polanisia tenuifolia*

1. Leaflets ovate, lanceolate, to oblanceolate, 5-35 mm wide [2]

2. Stem with stipular spines 1-5 mm long ... *Tarenaya*

2. Stems without stipular spines [3]

3. Ovary and fruit sessile on pedicel (gynophore obsolete) ... *Arivela viscosa*

- 3. Ovary and fruit stipitate on pedicel (gynophore subtending fruit, distinct from pedicel) [4]
- 4. Bracts or leaves subtending flower unifoliolate ... *Cleoserrata speciosa*
- 4. Bracts or leaves subtending flower trifoliolate [5]
- 5. Stem leaves usually 5-foliolate; inflorescence distinct, with the subtending bracts strongly reduced relative to stem leaves ... *Gynandropsis gynandra*
- 5. Stem leaves usually trifoliolate; inflorescence indistinct and flowers appearing singly, with the subtending leaves scarcely if at all reduced relative to stem leaves ... *Sieruela rutidosperma*

### Arivela {AFP}

\**Arivela viscosa* (L.)Raf.— {AFP}

### Cleoserrata {AFP}

\**Cleoserrata speciosa* (Raf.)Ittis— {AFP}

### Gynandropsis {AFP}

\**Gynandropsis gynandra* (L.)Briq.— {AFP}

### Polanisia {AFP}

*Polanisia tenuifolia* Torr. & A.Gray— {AFP}

### Sieruela {AFP}

\**Sieruela rutidosperma* (DC.)Roalson & J.C.Hall— {AFP}

### Tarenaya {AFP}

- 1. Sepals, ovary, and fruit glabrous (other plant parts may be glandular-pubescent); petals usually pink or purple, sometimes white ... *T. hassleriana*
- 1. Sepals, ovary, and fruit glandular-pubescent; petals white or greenish white ... *T. spinosa*

\**Tarenaya hassleriana* (Chodat)Ittis— {AFP}

\**Tarenaya spinosa* (Jacq.)Raf.— {AFP}

## MALVALES

### CISTACEAE {AFP}

- 1. Leaf blades 1-35 mm wide; flowers conspicuous 10-20 mm wide with 5 yellow petals (petals absent in cleistogamous flowers) ... *Crocanthemum*
- 1. Leaf blades 0.5-8 mm wide; flowers inconspicuous, 1-2 mm wide with 3 greenish to purplish petals ... *Lechea*

**Crocanthemum** {AFP} Previously, all species here had been placed in *Helianthemum*.

- 1. Larger leaf blades 9-35 mm wide, 1.5-3.5 times longer than wide, the lower surface and lateral veins usually plainly visible ... *C. carolinianum*
- 1. Larger leaf blades 2-9(13) mm wide, 2.5-10 times longer than wide, the lower surface and often the lateral veins concealed or obscured by the dense tomentum [2]
- 2. Ovary and fruit densely stellate-pubescent, at least in the upper half [3]
- 2. Ovary and fruit glabrous (persistent inner sepals may be pubescent) [4]

- 3. Flowers in terminal umbellate clusters; fruit 2-valved ... *C. arenicola*
- 3. Flowers in leafy thyrses; fruit 3-valved ... *C. nashii*
- 4. Leaf blade attenuate-cuneate at the base; flowers in leafy thyrses ... *C. rosmarinifolium*
- 4. Leaf blade cuneate to rounded-cuneate at the base; flowers mostly terminal or subterminal [5]
- 5. Basal rosette-like leaves absent; flowers usually 5-45 per cluster or cyme (including both chasmogamous and cleistogamous flowers) ... *C. corymbosum*
- 5. Basal rosette-like leaves sometimes present; flowers usually 1-3(7) per cluster or cyme (including both chasmogamous and cleistogamous flowers) ... *C. georgianum*

***Crocانthemum arenicola*** (Chapm.)Barnhart— {AFP}  
***Crocانthemum carolinianum*** (Walter)Spach— {AFP}  
***Crocانthemum corymbosum*** (Michx.)Britton— {AFP}  
***Crocانthemum georgianum*** (Chapm.)Barnhart— {AFP}  
***Crocانthemum nashii*** (Britton)Barnhart— {AFP}  
***Crocانthemum rosmarinifolium*** (Pursh)Janch.— {AFP}

### Lechea {AFP}

- 1. Flowers 1-3 in fascicles ... *L. cernua*
- 1. Flowers solitary [2]
- 2. Stems villous [3]
- 2. Stems glabrous to strigose [4]
- 3. Leaves <1 cm long; sepals uniformly pubescent; inner broad sepals not bowed or only slightly so; capsule ellipsoid, indehiscent and distinctly exserted from calyx (obviously longer than the sepals); fruit usually 1-seeded ... *L. divaricata*
- 3. Leaves often >1.5 cm long; sepals sparsely pubescent to glabrous; inner broad sepals distinctly bowed (U- or V-shaped in cross-section); capsule subglobose, splitting to 3 valves at maturity and about equal to the calyx in length or slightly exserted; fruit usually with 2-4 seeds ... *L. mucronata*
- 4. Leaves to 30 mm long, with an indurate, callous tip ... *L. pulchella* var. *ramosissima*
- 4. Leaves to 10 mm long (rarely to 20 mm long), lacking an indurate, callous tip [5]
- 5. Calyx usually densely cinereous, the surface occluded [6]
- 5. Calyx glabrous to strigose, the surface visible [7]
- 6. Inflorescence compact, dense; inner sepals rust-colored in fruit; seeds 3 ... *L. torreyi* var. *congesta*
- 6. Inflorescence loose, open; inner sepals brown in fruit; seeds 4-6 ... *L. torreyi* var. *torreyi*
- 7. Outer slender sepals subequal to longer than the broad inner sepals [8]
- 7. Outer slender sepals shorter than the broad inner sepals [9]
- 8. Leaves usually >1.5 mm wide; outer slender sepals distinctly longer than the inner broad sepals and often equaling mature capsule (slender sepals sometimes a little shorter or a little longer than fruit); mature capsule brownish (remnants of the stigmas on top are not as distinct because of the darker capsule) ... *L. minor*
- 8. Leaves usually <1.5 mm wide; outer slender sepals only a little longer or equaling the inner broad sepals and shorter than mature capsule; mature capsule usually straw-colored (the reddish brown stigmas are easily seen capping the fruit because they contrast with the lighter capsule) ... *L. sessiliflora*
- 9. Stems woody at base; sepals spreading when in fruit; fruit subglobose and strongly exserted (1/3–1/2 of length) ... *L. deckertii*

9. Stems mostly herbaceous to slightly woody; sepals not spreading in fruit or only slightly so; fruit cylindrical to ovoid and included to slightly exerted ... *L. lakelae*

***Lechea cernua*** Small— {AFP} Endemic. State Threatened.

***Lechea deckertii*** Small— {AFP}

***Lechea divaricata*** Shuttlew. ex Britton— {AFP} Endemic. State Endangered.

***Lechea lakelae*** Wilbur— {AFP} Endemic (Marco Island); extirpated. State Endangered.

***Lechea minor*** L.— {AFP}

***Lechea mucronata*** Raf.— {AFP}

***Lechea pulchella*** Raf. var. ***ramosissima*** (Hodgdon) Sorrie & Weakley— {AFP}

***Lechea sessiliflora*** Raf.— {AFP}

***Lechea torreyi*** (Chapm.) Legg. ex Britton var. ***congesta*** Hodgdon ex Lemke— {AFP}

Combination validated by [Lemke \(2014\)](#).

***Lechea torreyi*** (Chapm.) Legg. ex Britton var. ***torreyi***— {AFP}

## MALVACEAE {AFP}

1. Trees; leaves palmately compound ... Key A

1. Herbs, shrubs, or trees; leaves simple [2]

2. Leaf blade margins entire (the blade sometimes lobed or leaves compound) ... Key B

2. Leaf blade margins toothed or undulate, sometimes obscurely so (the blade sometimes lobed) [3]

3. Calyx without a subtending epicalyx ... Key C

3. Calyx subtended by an epicalyx of bracts ... Key D

Key A: Trees; leaves palmately compound

1. Trunk massively enlarged relative to branches, not strongly buttressed, trunk and branches lacking prickles; flowers pendulous on elongate pedicels; calyx lobed (stamens numerous); fruit indehiscent; endocarp spongy ... *Adansonia digitata*

1. Trunk enlarged, buttressed at base, or not much enlarged, trunk or branches with or without prickles; flowers not pendulous, the pedicels shorter than the flower; calyx truncate or lobed (stamens numerous or 5-10); fruit dehiscent; endocarp with kapok (cottony fibers) [2]

2. Trunk and branches lacking prickles; petals linear-oblong, recurved to recurved-coiling; anthers numerous, strongly exerted [3]

2. Trunk or branches with prickles (the main trunk sometimes becoming smooth); petals elliptic to ovate, incurved, plane, to recurved; anthers 5 or numerous, not exerted or scarcely so [5]

3. Leaflet venation eucamptodromous ... *Pseudobombax ellipticum*

3. Leaflet venation brochidodromous [4]

4. Stamens red distally; fruit brown, surface roughened ... *Pachira aquatica*

4. Stamens white; fruit green, smooth ... *Pachira glabra*

5. Petals and filaments red to pale red; fertile stamens numerous per flower ... *Bombax ceiba*

5. Petals and filaments white to pink; fertile stamens 5 (sometimes with staminodes) per flower ... *Ceiba*

Key B: Leaves simple, entire

1. Leaf blades usually all lobed [2]

1. Leaf blades usually unlobed [4]

2. Leaf blades deeply palmately divided (sometimes only on the distal leaves), usually at least some sinuses halfway to the midrib or nearly reaching the petiole ... *Callirhoe*

2. Leaf blades unlobed to shallowly lobed, the sinuses usually less than halfway to the midrib [3]

- 3. Leaf blades 16-50 cm wide; flowers unisexual, with white to red sepals, the petals absent; fruit a foliaceous follicle; seeds ecomose ... Firmiana
- 3. Leaf blades 4-15 cm wide; flowers bisexual, with an epicalyx, calyx, and petals; fruit a loculicidal capsule; seeds comose (cotton) ... Gossypium
- 4. Herbs to shrubs <1 m tall; leaf blades narrowly oblong-lanceolate, rarely a few lobed ... Cienfuegosia
- 4. Shrubs to trees >1 m tall; leaf blades ovate to orbicular [5]
- 5. Leaf blade orbicular to orbicular-ovate, abruptly acuminate; fruit dehiscent ... Talipariti
- 5. Leaf blade ovate-deltate, gradually acuminate; fruit indehiscent ... Thespesia

Key C: Leaves simple, not entire, without an epicalyx

- 1. (Key C) Shrubs to trees to 20 m, developing a definite trunk [2]
- 1. Herbs or shrubs to 2.5 m, scarcely developing a definite trunk [3]
- 2. Leaf blade base symmetric to slightly asymmetric; peduncle free, without a large foliaceous bract; fruit a drupe ... Grewia
- 2. Leaf blade base conspicuously asymmetric; peduncle adnate to a large foliaceous bract; fruit nutlike ... Tilia
- 3. Leaf blades <2 cm long [4]
- 3. Leaf blades >2 cm long [5]
- 4. Leaf blades coriaceous, with conspicuous reticulate venation, with bristle-tipped teeth; stamens 5 per flower; mericarps muricate ... Ayenia
- 4. Leaf blades chartaceous, with inconspicuous reticulate venation, the teeth not bristle-tipped; stamens 10 or more per flower; mericarps not muricate ... Sida
- 5. Stamens 5 per flower [6]
- 5. Stamens 10 or more per flower [7]
- 6. Corolla white, pink, to purple; fruit usually with 4-10 seeds; styles 5 per flower ... Melochia
- 6. Corolla yellow to orange; fruit with 1 seed; style 1 per flower ... Waltheria
- 7. Flowers subtended by foliaceous bracts with dark veins bordered by pale areas (Pavonia s.lat.) ... Malachra
- 7. Flowers not subtended by foliaceous bracts with darkened veins and pale areas [8]
- 8. Stamens free [9]
- 8. Stamens monadelphous, joined along a staminal column [10]
- 9. Leaf blades unlobed, <3.1 cm wide; fruit dehiscent, lacking hooked spines ... Corchorus
- 9. Leaf blades sometimes lobed, >2 cm wide; fruit indehiscent, with hooked spines (adherent to clothing) ... Triumfetta
- 10. Fruit bladder-like ... Herissantia
- 10. Fruit dehiscent, not bladder-like [10]
- 11. Corolla white, pink, lavender, to violet ... Anoda
- 11. Corolla pale yellow, yellow, pinkish yellow, orange-yellow, to pinkish red [12]
- 12. Each mericarp with 1 seed ... Sida
- 12. Each mericarp usually with 2-5 seeds [13]
- 13. Mericarps 5-25, each mericarp undivided, usually with 3-5 seeds ... Abutilon
- 13. Mericarps 3-5, each mericarp divided into 2 cells, one cell indehiscent with 1 seed and the other cell dehiscent with 2 seeds ... Wissadula

Key D: Leaves simple, not entire, with an epicalyx

- 1. Corolla tubular in shape with the petals erect and appressed to one another, sheathing the staminal column (Pavonia s.lat.) ... Malvaviscus
- 1. Corolla open, the petals generally spreading and exposing the staminal column [2]



- 2. Fruit a schizocarp with mericarps that individually split apart from each other at maturity [3]
- 2. Fruit a loculicidal capsule with the mericarps remaining united at maturity [8]
- 3. Epicalyx bracts 5-7 per flower [4]
- 3. Epicalyx bracts 2-3 per flower [5]
- 4. Leaf blade lower surface lacking glands at the base of the major veins ... Pavonia
- 4. Leaf blade lower surface with 1-3 prominent glands at the base of the major veins ... Urena
- 5. Leaf blades unlobed, truncate to cuneate at the base ... Malvastrum
- 5. Usually at least some leaf blades lobed, or if unlobed then the blade cordate to subcordate at the base
- 6. Leaf blades shallowly lobed, the sinuses usually less than halfway to the midrib, the margins regularly toothed ... Malva
- 6. Usually at least some leaf blades deeply palmately divided (sometimes only on the distal leaves) with sinuses halfway to the midrib or nearly reaching the petiole, or the blade with irregularly incised sinuses, or the leaf blades unlobed and deltate-ovate [7]
- 7. Leaf blade lobes linear and widely separated from each other, or the leaf blades unlobed and deltate-ovate; petals erose-margined, purple, 2-4 cm long; fruits lacking bristles and spines ... Callirhoe)
- 7. Leaf blade lobes not linear, not widely separated, the blades mostly suborbicular; petals entire, orange to red, to 1 cm long; fruits bristly and with apical bifurcate spines ... Modiola
- 8. Annual herbs; calyx deciduous in fruit ... Abelmoschus
- 8. Perennial herbs, shrubs, to trees; calyx persistent in fruit [9]
- 9. Fruit apically acute to obtuse; seeds usually 2 or more per locule ... Hibiscus
- 9. Fruit apically depressed; seeds usually 1 per locule ... Kosteletzkya

### Abelmoschus {AFP}

^*Abelmoschus esculentus* (L.) Moench — {AFP}

### Abutilon {AFP}

- 1. Petioles and stems not pilose, longest hairs < 1 mm long [2]
- 1. Petioles and stems pilose, hairs 2–3.5 mm long [3]
- 2. Carpels 10-12; fruits ca. 1 cm wide, mericarps acute or aristae to 2 mm long ... *A. permolle*
- 2. Carpels 13-15; fruit ca. 2 cm wide, mericarps aristate, the tips 3–5 mm long ... *A. theophrasti*
- 3. Stems viscid, with stalked glands; petals orange-yellow with a darkened reddish base ... *A. hirtum*
- 3. Stems eglandular; petals yellow to pinkish [4]
- 4. Lower leaf blade surface appearing light green; petals yellow; fruits ca. 1.5 cm wide, mericarps < 13 mm long ... *A. grandifolium*
- 4. Lower leaf blade surface appearing whitish tomentose; petals pink to pinkish pale yellow; fruits ca. 2 cm wide, mericarps > 12 mm long ... *A. hulseanum*

\**Abutilon grandifolium* (Willd.) Sweet — {AFP}

\**Abutilon hirtum* (Lam.) Sweet — {AFP}

*Abutilon hulseanum* (Torr. & A.Gray) Torr. ex A.Gray — {AFP}

*Abutilon permolle* (Willd.) Sweet — {AFP}

\**Abutilon theophrasti* Medik. — {AFP}

### Adansonia

^*Adansonia digitata* —

## Anoda {AFP}

\**Anoda cristata* (L.)Schltdl.— {AFP}

## Ayenia {AFP}

1. Leaf blade suborbicular to elliptic, 0.8-1.4 times longer than wide ... *A. euphrasiifolia*

1. Leaf blade elliptic-lanceolate, 1.8-2.4 times longer than wide ... *A. insulicola*

*Ayenia euphrasiifolia* Griseb.— {AFP}

\**Ayenia insulicola* Cristóbal— {AFP} Waif, Hillsborough Co.

## Bombax

^ *Bombax ceiba* L.—

## Callirhoe {AFP}

1. Proximal leaf blades ovate-lanceolate, the distal ones sometimes deeply divided; pedicels subequal to shorter than the flowers ... *C. triangulata*

1. Usually all leaf blades deeply divided; pedicels elongate and much longer than the flowers [2]

2. Stems usually hirsute; calyx lobes divergent in bud, not forming a point ... *C. involucrata* var *lineariloba*

2. Stems glabrate to appressed-pubescent; calyx lobes valvate in bud, forming apiculate or acuminate point ... *C. papaver*

\**Callirhoe involucrata* (Torr. & A.Gray)A.Gray var. *lineariloba* (Torr. & A.Gray)A.Gray— {AFP}

*Callirhoe papaver* (Cav.)A.Gray— {AFP} State Endangered.

*Callirhoe triangulata* (Leavenw.)A.Gray— {AFP}

## Ceiba

1. Leaflet entire; flowers mostly in fascicles; petals 2-3.5 cm long; filaments fused into a tube surrounding the ovary, lacking appendages, filaments free above the ovary ... *Ceiba pentandra*

1. Leaflets toothed; flowers solitary; petals 5-9 cm long; filaments united into a tube throughout or nearly so, with lobed appendages, with 5 sinuous anthers at the tip ... *Ceiba speciosa*

^ *Ceiba pentandra* (L.)Gaertn.—

^ *Ceiba speciosa* (A.St.-Hil. et al.)Ravenna—

## Cienfuegosia {AFP}

*Cienfuegosia yucatanensis* Millsp.— {AFP} State Endangered.

## Corchorus {AFP}

1. Stems, leaves, and fruits densely pubescent to tomentose, hairs stellate; capsules subglobose to short-ellipsoid ... *C. hirsutus*

1. Stems, leaves, and fruits glabrous to hirsute, hairs simple; capsules cylindrical [2]

2. Leaf blade sometimes with setaceous-awned teeth at the base; sepals awned; fruit 3-4 locular, each part terminated by a bifid awn ... *C. aestuans*

2. Leaf blade without setaceous-awned teeth; sepals without awns; fruit 2-locular, awnless or each part 2-awned [3]

3. Stems puberulent in lines, hairs retrorse, blunt-tipped; capsules terete, sparsely to moderately strigose to strigulose, distally abruptly constricted to beaklike apex, awnless; sepals hirsute; stamens 15-25 ... *C. hirtus*

3. Stems short-pilose in 1(-2) lines, hairs erect, sharp-tipped; capsules flattened, minutely hirtellous to hispidulous, distally subtruncate, each valve 2-awned; sepals glabrous; stamens 50-70 ... *C. siliquosus*

\**Corchorus aestuans* L.— {AFP}

\**Corchorus hirsutus* L.— {AFP}

*Corchorus hirtus* L.— {AFP}

*Corchorus siliquosus* L.— {AFP}

### Firmiana {AFP}

\**Firmiana simplex* (L.)W.Wight— {AFP}

### Gossypium {AFP}

1. Leaf blades shallowly to moderately deeply lobed, the lobes acuminate and usually broadest at their base; bracts of the involucre 5-19-laciniate, free; tetraploid (subgenus *Karpas*) [2]

1. Leaf blades moderately to deeply lobed, the lobes acute to acuminate and usually narrowed or constricted at their base; bracts of the involucre entire, 3-7-laciniate, or 5-13-dentate, free or sometimes connate basally; diploid (subgenus *Gossypium*) [3]

2. Stipules 1-5 cm long; leaf blades with 3-7 lobes, the central lobe ovate to lanceolate and usually >1.5 times as long as wide; bracts of the involucre 5-17-laciniate, the teeth acuminate from the base, separated by rounded sinuses; calyx usually truncate, to 10 mm long (excluding teeth); petals usually yellow at anthesis with a reddish or purplish basal spot; fruit usually with 3 locules, narrowly ovoid, mostly elongate, pitted; cultivated ... *G. barbadense*

2. Stipules 0.5-1.5(2) cm long; leaf blade with 3-5 lobes, the central lobe triangular to ovate and usually 1-1.5 times as long as wide; bracts of the involucre 3-19-laciniate, the teeth triangular and acute or lanceolate and acuminate distally, separated by mostly acute sinuses; calyx truncate or with acute lobes or long-acuminate teeth, usually <6 mm long (excluding teeth); petals cream to pale yellow at anthesis, with or without a dark reddish spot at base; fruit with 3-5 locules, ovoid or subglobose (rarely elongate), smooth; native and cultivated ... *G. hirsutum*

3. Involucre bracts entire or 3-7-laciniate, enclosing bud, sometimes basally connate; petals usually yellow at anthesis with a reddish or purplish basal spot, sometimes white or flushed purplish or basal spot absent; fruit elongated, flaring widely, releasing cotton; cultivated ... *G. arboreum*

3. Involucre bracts 5-13-dentate, often flaring, usually free; petals yellow at anthesis with a reddish or purplish basal spot; fruit subglobose, not flaring on dehiscence (cotton removed with difficulty); cultivated ... *G. herbaceum*

*Gossypium hirsutum* L.— {AFP} State Threatened.

### Grewia {AFP}

^ *Grewia asiatica* L.— {AFP}

### Herissantia {AFP}

*Herissantia crispa* (L.)Brizicky— {AFP}

## Hibiscus {AFP}

1. Largest leaf blades to 6.5 cm long, to 7 cm wide; corolla 1.6-3(-4) cm long; fruit 1-1.5 cm long [2]
1. Largest leaf blades to 30 cm long, to 30 cm wide; corolla 3-14 cm long; fruit 1.2-3.5 cm long [3]
2. Plants perennial; leaf blades shallowly 3-lobed to unlobed, coarsely dentate; flower nodding or pendulous; primary veins of calyx not zigzag; corolla red ... *H. poeppigii*
2. Plants annual; most leaf blades 3-5 lobed, the lobes pinnately undulate to lobed; flowers ascending to erect; primary veins of calyx zigzag; corolla cream, yellow, to purplish with purple-brown basal spot (sect. *Trionum*) ... *H. trionum*
3. Leaf blade lower surface conspicuously tomentose or scabrous [4]
3. Leaf blade lower surface glabrous or with few hairs or prickles along veins [9]
4. Leaf blade scabrous (*Sabdariffa*) ... *H. aculeatus*
4. Leaf blade tomentose [5]
5. Stems densely tomentose; calyx often hispid; epicalyx bract bifid at the apex (*Sabdariffa*) ... *H. furcellatus*
5. Stems glabrous to densely tomentose; calyx tomentose; epicalyx bract not bifid at the apex [6]
6. Leaf blade unlobed to lobed, the margins coarsely, irregularly crenate-dentate, the inner pair of lateral veins divergent from the midrib >45 degrees [7]
6. Leaf blade usually unlobed, the margin regularly dentate, the inner pair of lateral veins ascending at an angle <45 degrees to the midrib [8]
7. Pedicel and calyx eglandular; free portion of filaments secund; capsule apex apiculate; seeds verrucose-papillose (sect. *Muenchusia*) ... *H. grandiflorus*
7. Pedicels and calyx glandular-hairy; free portion of filaments not secund; capsule apex impressed; seeds with long straight hairs dorsally and dorsolaterally ... *H. mutabilis*
8. Upper and lower leaf blade densely tomentose and usually concolorous; epicalyx densely coarsely pubescent with both short-stellate hairs and longer spreading simple hairs especially near the margins; capsules densely pubescent throughout ... *H. lasiocarpus*
8. Upper leaf surface glabrous or sparsely pubescent, darker than the tomentose lower surface especially when dry; epicalyx uniformly, minutely canescent; capsules glabrous or sparsely pubescent on sutures (sect. *Muenchusia*) ... *H. moscheutos*
9. Epicalyx bract setose, lobed, or bifid [10]
9. Epicalyx bract entire [12]
10. Nectary absent on leaves and calyx ... *H. radiatus*
10. Nectary present on midrib of leaf blade lower surface and calyx lobe midrib [11]
11. Stems and leaves often dark red; epicalyx bract sometimes appendaged; corolla reddish with darker veins and base ... *H. acetosella*
11. Stems and leaves generally green, sometimes with red veins; epicalyx bracts without an appendage; corolla yellowish, often with a dark purple center (*Sabdariffa*) ... *H. cannabinus*
12. Leaf blade unlobed [13]
12. Leaf blade lobed, usually at least some [14]
13. Flowers horizontal to declinate; petals not pinnatifid-laciniate, spreading or slightly reflexed; epicalyx bract 0.3-3 cm long ... *H. rosasinensis* var. *rosasinensis*
13. Flowers pendulous; petals pinnatifid-laciniate, strongly reflexed; epicalyx bract to 0.2 cm long ... *H. rosasinensis* var. *schizopetalus*
14. Usually at least some leaf blades 3-lobed with lateral lobes perpendicular to the midrib (sect. *Muenchusia*) ... *H. laevis*
14. Leaf blades with 3-5 palmately radiating lobes or the inner lateral lobes ascending [15]

15. Leaf blades with 3-5 palmately radiating lobes; petals red (sect. *Muenchhusia*) ... *H. coccineus*

15. Leaf blades unlobed to shallowly 3-lobed; petals white to pink or bluish ... *H. syriacus*

^ *Hibiscus acetosella* Welw. ex Hiern— {AFP}

***Hibiscus aculeatus*** Walter— {AFP}

\****Hibiscus cannabinus*** L.— {AFP}

***Hibiscus coccineus*** Walter— {AFP}

***Hibiscus furcellatus*** Desr.— {AFP}

***Hibiscus grandiflorus*** Michx.— {AFP}

***Hibiscus laevis*** All.— {AFP}

***Hibiscus moscheutos*** L.— {AFP}

\****Hibiscus mutabilis*** L.— {AFP}

***Hibiscus poeppigii*** (Spreng.) Garcke— {AFP} State Endangered.

\****Hibiscus radiatus*** Cav.— {AFP}

^ *Hibiscus rosa-sinensis* L. var. *rosa-sinensis*— {AFP}

^ *Hibiscus rosa-sinensis* L. var. *schizopetalus* Dyer— {AFP}

^ *Hibiscus syriacus* L.— {AFP}

\****Hibiscus trionum*** L.— {AFP}

### **Kosteletzkya** {AFP}

1. Petals 5–14 mm long, usually white, sometimes with pink blush, sometimes drying yellowish; calyx 3.2–6 mm long; fruits variously hairy but with long, curved or hooked, simple hairs on sutures; seeds minutely hairy ... *K. depressa*

1. Petals 15–45 mm long, usually pink, rarely white; calyx 7–11 mm long; fruits hairy throughout, sometimes minutely so; seeds glabrous [2]

2. Leaf blades hastate to lanceolate, (1.5)3.5-16 cm wide, margin serrate or biserrate, unlobed or with lobes not reflexed ... *K. pentacarpos* var. *pentacarpos*

2. Leaf blades linear-lanceolate, 0.5-1.5(2) cm wide, margin without serrations for proximal half of blade, lobes reflexed ... *K. pentacarpos* var. *smilacifolia*

***Kosteletzkya depressa*** (L.) O.J. Blanchard et al.— {AFP} State Endangered.

***Kosteletzkya pentacarpos*** (L.) Ledeb. var. ***pentacarpos***— {AFP} Populations in the Americas had been called *K. virginica*. Now the name *K. pentacarpos* is used since the American populations seem morphologically indistinguishable from the Eurasian populations (Blanchard 2008).

***Kosteletzkya pentacarpos*** (L.) Ledeb. var. ***smilacifolia*** (Chapm.) S.N. Alexander— {AFP}

Southern peninsula (endemic). Recently recognized and said to differ also by an unbranched inflorescence (Alexander et al. 2012).

### **Malachra** {AFP}

1. Leaf blade lower surface (and stems) with stellate and simple hairs [2]

1. Leaf blade lower surface with simple hairs only (stellate hairs may be present on stems) [3]

2. Peduncle 1-4(6) cm long; bracts acute to acuminate; mericarps pubescent, smooth ... *M. alceifolia*

2. Peduncle 1-16 cm long; bracts mostly obtuse to rounded; mericarps glabrous, reticulate ... *M. capitata*

3. Stems with only smaller hairs that are 2-4 radiate (also with simple hairs); petals white; mericarps glabrous or glabrate, reticulate ... *M. fasciata*

3. Stems with some longer hairs 2-3 radiate and some smaller hairs 2-4 radiate (also with simple hairs); petals yellow to reddish; mericarps pubescent, smooth or with prominent nerves ... *M. urens*

\**Malachra alceifolia* Jacq.—

\**Malachra capitata* (L.)L.— {AFP}

\**Malachra fasciata* Jacq.— {AFP}

\**Malachra urens* Poit. ex Ledeb.—

### Malva {AFP}

\**Malva parviflora* L.— {AFP}

### Malvastrum {AFP}

1. Leaves and stems with usually dense, 5–12-rayed, often tufted, stellate hairs; inflorescences dense terminal spikes 3–10 cm ... *M. americanum*

1. Leaves and stems with sparse, 3–6-rayed, appressed, bilateral and stellate hairs; inflorescences solitary flowers, axillary or congested or loose terminal spikes 1–2 cm [2]

2. Leaf blade with only stellate hairs on the upper surface; mericarp mucros/cusps 0.1–0.4 mm; 2-fid floral bracts usually present; filament tubes sparsely puberulent ... *M. corchorifolium*

2. Leaf blade often with simple and stellate hairs on the upper surface; mericarp mucros/cusps 0.5–2.3 mm; 2-fid floral bracts absent; filament tubes glabrous ... *M. coromandelianum*

*Malvastrum americanum* (L.)Torr.— {AFP}

*Malvastrum corchorifolium* (Desr.)Britton ex Small— {AFP}

\**Malvastrum coromandelianum* (L.)Garcke— {AFP}

### Malvaviscus {AFP}

1. Leaf blade mostly broadly ovate, cordate at the base, conspicuously stellate-pubescent on the lower surface ... *M. arboreus* var. *drummondii*

1. Leaf blade mostly ovate-lanceolate to lanceolate, truncate to broadly cuneate at the base, glabrate on the lower surface ... *M. penduliflorus*

\**Malvaviscus arboreus* Cav. var. *drummondii* (Torr. & A.Gray)Schery— {AFP}

\**Malvaviscus penduliflorus* DC.— {AFP}

### Melochia {AFP}

1. Leaf blades tomentose and canescent with stellate hairs ... *M. tomentosa*

1. Leaf blades sericeous to glabrate with mostly simple hairs [2]

2. Inflorescence a dense, globose head [3]

2. Inflorescence of solitary to few flowers per node, not in dense heads [4]

3. Inflorescence mostly solitary and terminal; bracts and calyx lobes linear-lanceolate, longer than the mature fruit, glandular-stipitate ... *M. corchorifolia*

3. Inflorescence usually of numerous axillary heads; bracts and calyx lobes lanceolate to deltate, shorter than the mature fruit, eglandular ... *M. nodiflora*

4. Peduncle usually evident below each flower or flower cluster; bracteoles at base of pedicel; pedicel 1-5 mm long; fruits pyramidal, 5-winged, 7–14 mm diam ... *M. pyramidata*

4. Peduncle usually absent or obscure below each flower or flower cluster; bracteoles immediately subtending flower; pedicel 0-1 mm long; fruits subglobose, not winged, 2.5–6 mm diam ... *M. spicata*

\**Melochia corchorifolia* L.— {AFP}

\**Melochia nodiflora* Sw.— {AFP}

*Melochia pyramidata* L.— {AFP}

*Melochia spicata* (L.)Fryxell— {AFP}

*Melochia tomentosa* L.— {AFP}

**Modiola** {AFP}

*Modiola caroliniana* (L.)G.Don— {AFP}

**Pachira**

^ *Pachira aquatica* Aubl.—

**Pavonia** {AFP}

1. Leaf blade margins obscurely dentate to entire; inflorescence a terminal raceme ... *P. paludicola*

1. Leaf blade margins regularly crenate to dentate; flowers solitary, axillary [2]

2. Leaf blades narrowly lanceolate, often hastate; petals lavender to pink; mericarps without awns ... *P. hastata*

2. Leaf blades ovate; petals yellow; mericarps each with 3 retrorsely barbed, 6-7 mm long awns ... *P. spinifex*

\**Pavonia hastata* Cav.— {AFP}

*Pavonia paludicola* Nicolson ex Fryxell— {AFP} State Endangered.

*Pavonia spinifex* (L.)Cav.— {AFP}

**Pseudobombax**

^ *Pseudobombax ellipticum* (Kunth)Dugand—

**Sida** {AFP}

1. Stems procumbent; leaf blades <2 cm long [2]

1. Stems erect, ascending, or occasionally reclining; leaf blades 1-9 cm long, at least the larger ones [3]

2. Leaves fairly evenly distributed along the stem; leaf blades crenate throughout the margin; petals white; mericarps slightly rugose ... *S. abutilifolia*

2. Leaves crowded at the stem tips; leaf blades dentate in the upper half; petals reddish, orangeish, to yellowish; mericarps prominently muricate ... *S. ciliaris*

3. Style branches and mericarps 5 [4]

3. Style branches and mericarps 7-14 [6]

4. Stems usually viscid, glandular-puberulent; calyx usually glandular ... *S. glabra*

4. Stems eglandular, not viscid; calyx eglandular [5]

5. Stems and petioles minutely stellate-hairy, hairs to 0.5 mm; stems sometimes with a ca. 1 mm long spinose tubercle at the petiole base; pedicels apparent, >3 mm long ... *S. spinosa*

5. Stems and petioles with simple 1.5–3 mm long hairs mixed with shorter stellate hairs, rarely only stellate-hairy; stems lacking a spinose tubercles; pedicels inconspicuous, <4 mm long ... *S. urens*
6. Petioles of larger mature leaves 7-25 mm long; leaf blades cordate at the base ... *S. cordifolia*
6. Petioles 0.5-10 mm long; leaf blades cuneate to truncate at the base [7]
7. Leaf blades linear to oblong ... *S. elliotii*
7. Leaf blades lanceolate, ovate, to rhomboid [8]
8. Stems pilose with simple hairs 1-2 mm long ... *S. planicaulis*
8. Stems only stellate-pubescent, the hairs 0.5 mm long or less [9]
9. Leaf blades glabrate or sparsely pubescent on the lower surface; pedicels unjointed or jointed at the base, usually <1 cm long, occasionally to 2 cm long ... *S. ulmifolia*
9. Leaf blades sparsely pubescent or moderately to densely tomentose on the lower surface; pedicels jointed, usually >1 cm long, at least the longer ones [10]
10. Leaf blades glabrate or sparsely pubescent on the lower surface ... *Sida* aff. *acuta*
10. Leaf blades moderately to densely tomentose on the lower surface [11]
11. Stem hairs to 0.1 mm; pedicels (1–)3–4 cm long; petals yellow, lacking a reddish spot ... *S. rhombifolia*
11. Stem hairs to 0.5 mm; pedicels to 2 cm long; petals cream or pale yellow with a reddish spot at the base ... *S. santaremensis*

***Sida abutifolia*** Mill.— {AFP}

++***Sida* aff. *acuta***—Monroe Co. keys (USF acc no. 271454, similar to morphotype Duss 2338, NY). Known from one record. Allied with other Caribbean forms (going under *S. acuta*, nearly certainly misapplied), but no clear name applicable (even considering the numerous Gandoger names). Type of *S. acuta* from India and quite different. Apparently an undescribed taxon.

***Sida ciliaris*** L.— {AFP}

\****Sida cordifolia*** L.— {AFP}

***Sida elliotii*** Torr. & A.Gray— {AFP}

\****Sida glabra*** Mill.— {AFP}

\****Sida planicaulis*** Cav.— {AFP}

***Sida rhombifolia*** L.— {AFP}

\****Sida santaremensis*** Monteiro— {AFP}

\****Sida spinosa*** L.— {AFP}

***Sida ulmifolia*** Mill.— {AFP}

\****Sida urens*** L.— {AFP}

**Talipariti** {AFP}

1. Stems and petioles stellate-pubescent; epicalyx bracts 12-17 mm long, ca. ½ the length of the calyx ... *T. tiliaceum* var. *pernambucense*

1. Stems and petioles glabrate or with few stellate hairs; epicalyx bracts 8-10 mm long, ca. ⅓ the length of the calyx ... *T. tiliaceum* var. *tiliaceum*

\****Talipariti tiliaceum*** (L.)Fryxell var. ***pernambucense*** (Arruda)Fryxell— {AFP}

\****Talipariti tiliaceum*** (L.)Fryxell var. ***tiliaceum***— {AFP}

**Thespesia** {AFP}

\****Thespesia populnea*** (L.)Sol. ex Corrêa— {AFP}



## Tilia {AFP}

1. Leaf blade lower surface sparsely to moderately stellate-hairy, hairs often caducous ... T. americana var. caroliniana

1. Leaf blade lower surface stellate-tomentose persistently moderately to densely stellate-hairy ... T. americana var. heterophylla

**Tilia americana** L. var. **caroliniana** (Mill.)Castigl.— {AFP}

**Tilia americana** L. var. **heterophylla** (Vent.)Loudon— {AFP}

## Triumfetta {AFP}

1. Capsules glabrate, the prickles retrorsely hispidulous ... T. semitriloba

1. Capsules densely tomentose, the prickles pubescent [2]

2. Stems with stellate and simple trichomes; leaf blades mostly with 3 pronounced major veins at the base; capsule prickles pubescent throughout ... T. pentandra

2. Stems with stellate trichomes; leaf blades mostly with 5-7 pronounced major veins at the base; capsule prickles pubescent only at the base ... T. rhomboidea

\***Triumfetta pentandra** A.Rich.— {AFP}

\***Triumfetta rhomboidea** Jacq.— {AFP}

\***Triumfetta semitriloba** Jacq.— {AFP}

## Urena {AFP}

1. Leaf blades shallowly lobed with broadly rounded sinuses ... U. lobata

1. Leaf blades lobed with narrowly acute or deeply incised sinuses ... U. sinuata

\***Urena lobata** L.— {AFP}

\***Urena sinuata** L.— {AFP}

## Waltheria {AFP}

1. Plant to 0.6(–1) m tall; stems prostrate, decumbent, to spreading, several from the base of the plant; leaf blades 1–2 times longer than wide, to 3.4 cm long and 2.7 cm wide, the stellate hairs of the upper blade surface not overlapping or scarcely so, the arms of the stellate hairs 0–0.3(–0.5) mm long (rarely a few arms longer) ... W. bahamensis

1. Plant to 2 m tall; stems generally erect to ascending, usually solitary at the base of the plant; leaf blades (1.4–)1.8–2.2 (–3.5) times longer than wide, to 12 cm long and 6.5 cm wide, the stellate hairs of the upper blade surface strongly overlapping, the arms of the stellate hairs mostly 0.4–1 mm long ... W. indica

**Waltheria bahamensis** Britton— {AFP} Coastal strand, sandy pinelands or scrub, and pine rocklands.

**Waltheria indica** L.— {AFP} Generally of disturbed sites.

## Wissadula {AFP}

\***Wissadula hernandioides** (L'Hér.)Garcke— {AFP}

## MUNTINGIACEAE {AFP}

## Muntingia {AFP}

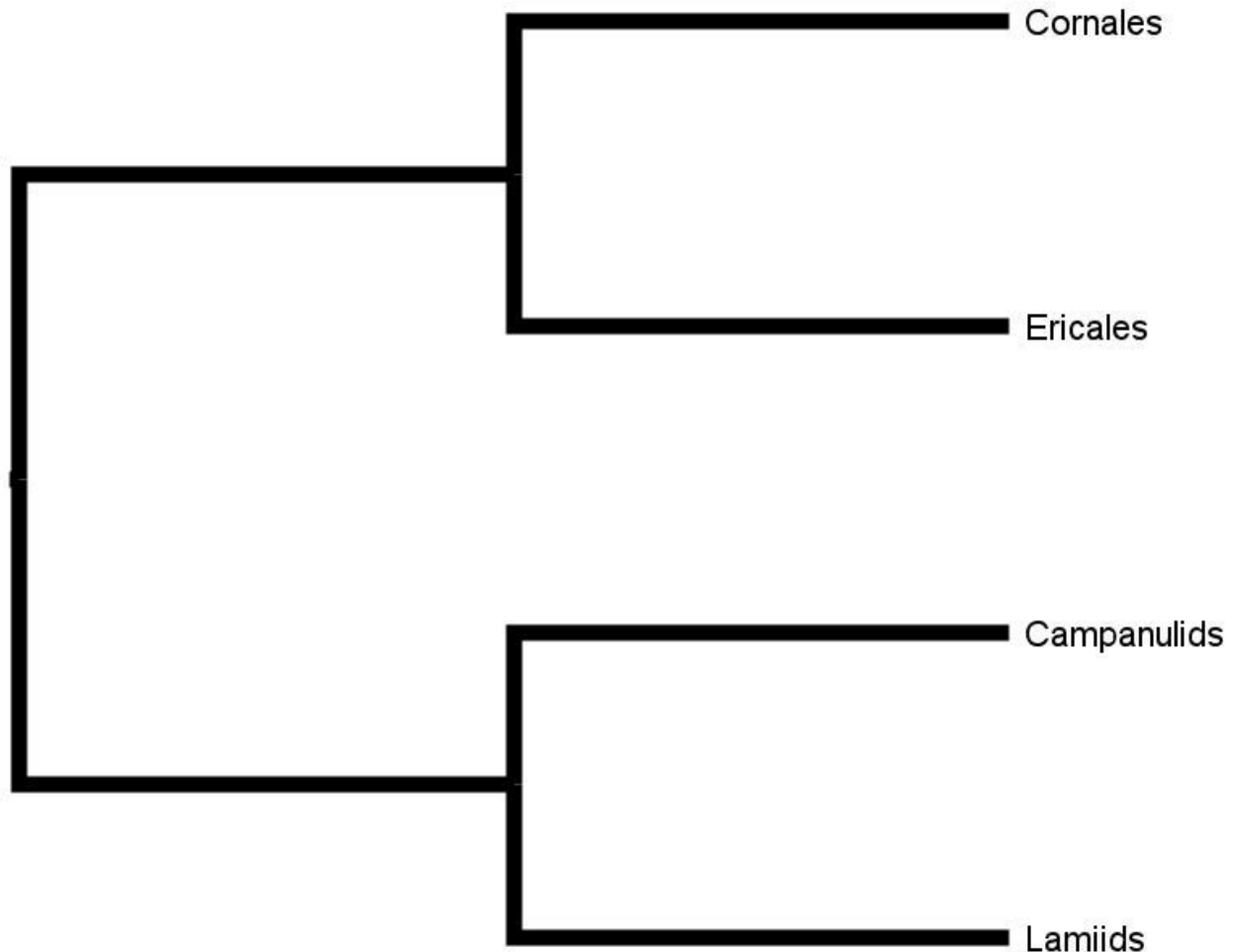
^ *Muntingia calabura* L.— {AFP} Cultivated, primarily for edible fruit; sparingly naturalized.

## THYMELAEACEAE {AFP}

### Dirca {AFP}

*Dirca palustris* L.— {AFP} State Endangered.

# ASTERIDS



# CORNALES

## CORNACEAE {AFP}

### Cornus {AFP}

1. Leaves alternate, sometimes with short internodes (subg. *Mesomora* or genus *Swida*) ... *C. alternifolia*

1. Leaves opposite [2]

2. Tree; bark finely blocky with distinct fissures; leaf underside whitish; 4 white petaloid bracts subtending inflorescence; fruit red, rarely yellowish (subg. *Cynoxylon* or genus *Bethamidia*) ... *C. florida*

2. Shrubs to small trees; bark smooth to longitudinally splitting with faint furrows; leaf underside pale green to yellowish; inflorescence bracts minute and inconspicuous, not petaloid; fruit white to blue or violet (subg. *Kraniopsis* or genus *Swida*) [3]
3. Leaf blade with (4)5-9 secondary veins per side, broadly ovate to broadly elliptic, larger blades 8-15 cm long and 4-9 cm wide ... *C. amomum*
3. Leaf blade with 3-4(5) secondary veins per side, ovate to narrowly elliptic or lanceolate, larger blades 3.5-11 cm long and 1-6 cm wide [4]
4. Rhizomatous, with solitary stems; petiole 2-7 mm long; leaf blade with upcurved erect hairs on the lower surface and sometimes upper surface, some appressed hairs may be present; sepals 0.2-0.8 mm long; petals 1.7-2.4 mm long ... *C. asperifolia*
4. Stems clustered, without rhizomes; petiole 5-16 mm long; leaf blade surfaces only with appressed hairs; sepals 0.4-1 mm long; petals 2.6-3.8 mm long ... *C. foemina*

***Cornus alternifolia*** L.f.— {AFP} State Endangered.

***Cornus amomum*** Mill.— {AFP}

***Cornus asperifolia*** Michx.— {AFP}

***Cornus florida*** L.— {AFP}

***Cornus foemina*** Mill.— {AFP}

## HYDRANGEACEAE {AFP}

1. Stems with simple and stellate trichomes; petioles 0-4 mm long ... *Deutzia scabra*
1. Stems glabrous or with simple trichomes only; petioles 1-120 mm long [2]
2. Petioles mostly 10-120 mm long; inflorescence sometimes with larger sterile flowers; stamens 10-30 ... *Hydrangea*
2. Petioles mostly 1-10 mm long; inflorescence of bisexual flowers only; stamens 60-90 ... *Philadelphus inodorus*

## *Deutzia* {AFP}

\****Deutzia scabra*** Thunb.— {AFP}

## *Hydrangea* {AFP}

1. Vine; stems glabrous; leaf blade entire to coarsely toothed, unlobed; flowers bisexual ... *H. barbara*
1. Shrubs; stems hirsute, or tomentose; leaf blade toothed, lobed or unlobed; some flowers larger and sterile [2]
2. Leaf blades unlobed, the lower surface glabrate or pubescent along the veins; inflorescences dome-shaped to hemispheric ... *H. arborescens*
2. Leaf blades with 3-7 lobes, the lower surface tomentose to pilose; inflorescences ovoid to conic ... *H. quercifolia*

***Hydrangea arborescens*** L.— {AFP} State Endangered.

***Hydrangea barbara*** (L.)Bernd Schulz— {AFP}

***Hydrangea quercifolia*** W.Bartram— {AFP}

## *Philadelphus* {AFP}

***Philadelphus inodorus*** L.— {AFP}

## LOASACEAE {AFP}

## Mentzelia {AFP}

*Mentzelia floridana* Nutt. ex Torr. & A.Gray— {AFP}

## NYSSACEAE {AFP}

### Nyssa {AFP}

1. Petiole 2.5-6 cm long; fruit lenticellate ... *N. aquatica*

1. Petiole 0.5-2.5(3.5) cm long; fruit smooth [2]

2. Larger leaf blades 10-30 cm long; staminate flowers sessile; ovaries hairy; ripe fruits red to yellowish red, 2-3 cm long ... *N. ogeche*

2. Larger leaf blades 5-15 cm long; staminate flowers pedicellate; ovaries glabrous; ripe fruits black to blue, 0.7-1.5 cm long [3]

3. Leaf blades chartaceous, obovate to elliptic, apices acute to acuminate, margins entire or occasionally with 1-3 coarse teeth distally; bark generally regularly longitudinally and transversely fissured; pistillate and bisexual flowers or fruits (2)3-5(8) per cluster ... *N. sylvatica*

3. Leaf blades subcoriaceous to coriaceous, usually oblanceolate to narrowly elliptic, rarely ovate, apices obtuse to acute, margins entire; bark irregularly fissured; pistillate and bisexual inflorescences or fruits 1-3 per cluster [4]

4. Trees, 3-30 m tall; larger leaf blades 5-12 cm long; fruiting peduncle 1.5-4 cm long ... *N. biflora*

4. Shrubs or trees to 5 m tall; larger leaf blades 3-6(7) cm long; fruiting peduncle 0.5-2 cm long ... *N. ursina*

*Nyssa aquatica* L.— {AFP}

*Nyssa biflora* Walter— {AFP}

*Nyssa ogeche* W.Bartram ex Marshall— {AFP}

*Nyssa sylvatica* Marshall— {AFP}

## ERICALES

### BALSAMINACEAE {AFP}

#### Impatiens {AFP}

1. Leaf blade margin with 4-8 teeth per side; seed ellipsoidal ... *I. capensis*

1. Leaf blade margin with 10-30 teeth per side; seed ovoid to spheroidal [2]

2. Petioles 1-5 cm long; leaf blade mostly ovate ... *I. walleriana*

2. Petioles 0-1 cm long; leaf blade mostly lanceolate [3]

3. Leaves alternate; flower plus pedicel <1/2 as long as the subtending leaf... *I. balsamina*

3. Leaves pseudowhorled; flower plus pedicel >1/2 as long as subtending leaf ... *I. hawkeri*

\**Impatiens balsamina* L.— {AFP}

*Impatiens capensis* Meerb.— {AFP}

^ *Impatiens hawkeri* W.Bull—

\**Impatiens walleriana* Hook.f.— {AFP}

### EBENACEAE {AFP}

#### Diospyros {AFP}

1. Leaf blade lower surface with one or few punctate glands on each side of the midrib at the base of the blade; ovary pubescent ... *D. maritima*

1. Leaf blade lower surface lacking glands; ovary glabrous [2]
2. Petiole stout, 1.5-3 mm wide; leaf blade leathery, apex rounded to obtuse, the upper surface mostly without glands, the lower surface glaucescent with obscure venation; mature fruit green turning nearly black ... *D. nigra*
2. Petiole slender, 0.5-1.5 mm wide; leaf blade chartaceous, acute to acuminate, with microscopic yellowish or orangeish, to black sessile to short-stipitate glands on the upper surface especially along the midrib, the lower surface finely reticulate-veined; mature fruit orange, yellow, or reddish or purplish, often glaucous, turning brownish or off-orange [3]
3. Stems and leaves pubescent, especially along the veins; fruit (2)5-8.5(10) cm wide ... *D. kaki*
3. Stems and leaves glabrous to ephemerally pubescent when young, the veins usually glabrous to glabrate; fruit (2)3-5(7.5) cm wide ... *D. virginiana*

^ *Diospyros kaki* Thunb.—

\* ***Diospyros maritima*** Blume— {AFP}

^ *Diospyros nigra* (J.F.Gmel.)M.R.Almedia— {AFP} The name *D. ebenum* has been misapplied to this species. The leaf blades of *D. ebenum* have prominent, strongly reticulate veins and the irregular lateral veins tend to branch and fork well before the margin (unlike *D. nigra* with regularly arcuate lateral veins nearly reaching the margin and reticulate venation obscure).

***Diospyros virginiana*** L.— {AFP}

## POLEMONIACEAE {AFP}

1. Leaves pinnatifid with linear segments ... *Ipomopsis rubra*
1. Leaves entire and unlobed ... Phlox

### **Ipomopsis** {AFP}

***Ipomopsis rubra*** (L.)Wherry— {AFP}

### **Phlox** {AFP}

1. Most or all leaves alternate, the blade elliptic to lanceolate ... *P. drummondii*
1. Most or all leaves opposite, the blade linear, elliptic, to lanceolate [2]
2. Stems often densely leafy, the nodes with fascicles of leaves; leaves <2.5 cm long [3]
2. Stem nodes usually with one pair of leaves [4]
3. Anthers included; style 1.5-4 mm long, included, the stigma up to 2/3 of style length ... *P. nivalis*
3. Anthers (at least some) exerted from corolla tube; style 5-12 mm long, exerted, the stigma <1/5 of style length ... *P. subulata*
4. Leaf blade underside with conspicuous secondary veins ... *P. paniculata*
4. Leaf blade underside lacking noticeable secondary veins or these very obscure [5]
5. Sepal lobes lanceolate, united for >1/2 of length, glabrous to puberulent; apex of the uppermost anther even to protruding from the corolla throat; styles 10-19(26) mm long, longer than the calyx [6]
5. Sepal lobes linear, united <5/8 of length, glabrous to stipitate-glandular; apex of the uppermost anther below the corolla tube; styles 1.5-4 mm long, shorter than the calyx [7]
6. Distal leaves lanceolate to ovate; calyx 6-11 mm long ... *P. carolina*
6. Distal leaves linear to lanceolate; calyx 6-8 mm long ... *P. glaberrima*
7. Stems sometimes decumbent and rooting; leaf blades with long, spreading trichomes, the margin flat ... *P. divaricata* subsp. *laphamii*

7. Stems usually not rooting; leaf blades glabrous or with short trichomes, the margin sometimes revolute (especially when dry) [8]
8. Leaf blades linear, oblong-elliptic, to lanceolate; bracts and calyx eglandular to sparsely glandular [9]
8. Leaf blades linear to lanceolate; bracts and calyx moderately to densely glandular [10]
9. Leaves and bracts oblong, obtuse; involucre bracts concealing the calyx; pedicels to 3 mm long ... *P. amoena* subsp. *amoena*
9. Leaves and bracts linear, acuminate; involucre bracts lax, not concealing the calyx; pedicels to 5 mm long ... *P. amoena* subsp. *lighthipei*
10. Distal leaves mostly ascending to strict, reduced and grading into inflorescence bracts ... *P. floridana*
10. Distal leaves mostly spreading to ascending, not reduced or only slightly so, the ones below the inflorescence large and generally very different from the inflorescence bracts [11]
11. Leaves and corolla tube glabrous to glabrescent, sepals glabrous to pubescent; corolla lobe width subequal to length, often overlapping adjacent ones ... *P. pilosa* subsp. *detonsa*
11. Leaves, sepals, and corolla tube pubescent, often glandular; corolla lobes longer than wide, not overlapping ... *P. pilosa* subsp. *pilosa*

***Phlox amoena*** Sims subsp. ***amoena***— {AFP}

***Phlox amoena*** Sims subsp. ***lighthipei*** (Small)Wherry—

***Phlox carolina*** L.— Sometimes subsumed under *P. glaberrima*.

***Phlox divaricata*** L. subsp. ***laphamii*** (Alph.Wood)Wherry— {AFP}

\****Phlox drummondii*** Hook.— {AFP}

***Phlox floridana*** Benth.— {AFP}

***Phlox glaberrima*** L.— {AFP}

***Phlox nivalis*** Lodd. ex Sweet— {AFP}

***Phlox pilosa*** L. subsp. ***detonsa*** (A.Gray)Wherry—

***Phlox pilosa*** L. subsp. ***pilosa***— {AFP}

## PRIMULACEAE {AFP}

1. Herbs [2]

1. Shrubs or trees [4]

2. Leaves in a basal rosette; inflorescence an umbel ... *Primula meadia*

2. Leaves cauline or basal; inflorescence a raceme, panicle, or flowers solitary [2]

3. Flowers solitary ... *Lysimachia*

3. Flowers in a raceme or panicle ... *Samolus*

4. Leaf blade spinose at the tip ... *Bonellia macrocarpa*

4. Leaf blade generally rounded, obtuse, or emarginate at the tip, sometimes with a mucro [5]

5. Inflorescences in numerous subsessile fascicles along 3-30 cm of the stem, all to nearly half of it occurring below the leafy parts of the stem, the flowers subsessile ... *Myrsine cubana*

5. Inflorescences pedunculate and/or the flowers pedicellate, terminal or axillary, above or interspersed with the leaves or below the leafy parts of the stems [6]

6. Inflorescence umbellate or paniculate; staminodes absent; fruit drupaceous, seed ... *Ardisia*

6. Inflorescence racemose; staminodes at apex of corolla tube; fruit a berry, seeds 2-8 ... *Jacquinia*

## ***Ardisia*** {AFP}

1. Leaf blade crenate or serrulate [2]

1. Leaf blade entire [3]
2. Leaf blade crenate-undulate, reticulate venation obscure or unapparent; inflorescence with 5-18 flowers ... *A. crenata*
2. Leaf blade serrulate, reticulate venation conspicuous; inflorescence with 3-5 flowers ... *A. japonica*
3. Inflorescence a terminal panicle or raceme, the racemes elongate and not subumbellate, with 10-70 flowers; fruit 4-7 mm wide ... *A. escallonioides*
3. Inflorescence axillary or terminal on a lateral branch in a subumbellate raceme, with 4-10 flowers; fruit 7-10 mm wide [4]
4. Leaf blades subcoriaceous; peduncle longer than the pedicels; sepals ca. 1 mm long; fruit minutely black-punctate ... *A. elliptica*
4. Leaf blades chartaceous; peduncle subequal to the pedicels; sepals ca. 3 mm long; fruit densely and coarsely black-punctate ... *A. solanacea*

\* *Ardisia crenata* Sims— {AFP}

\* *Ardisia elliptica* Thunb.— {AFP} Petioles are often reddish.

*Ardisia escallonioides* Schtdl. & Cham.— {AFP} Petioles typically brown to pale yellow.

\* *Ardisia japonica* (Thunb.)Blume— {AFP}

\* *Ardisia solanacea* Roxb.— {AFP}

### Bonellia {AFP}

\* *Bonellia macrocarpa* (Cav.)Ståhl & Källersjö— {AFP}

### Jacquinia {AFP}

1. Petiole glabrous or sparsely puberulous; leaves usually distinctly pseudoverticillate, the blade 3-8(12) cm long, 1.5-5 cm wide; fruit orange to red ... *J. arborea*
1. Petiole puberulous-lepidote; leaves alternate or indistinctly pseudoverticillate, the blade 1-4.5 cm long, 0.5-2.5 cm wide; fruit yellow-green to orange-brown ... *J. keyensis*

\* *Jacquinia arborea* Vahl— {AFP}

*Jacquinia keyensis* Mez— {AFP} State Threatened.

### Lysimachia {AFP}

1. Larger leaves 0.5-3 cm long [2]
1. Larger leaves 4-18 cm long [4]
2. Pedicel 0-1 mm long ... *L. minima*
2. Pedicels 2.5-35 mm long [3]
3. Pedicel 3-35 mm long, recurved in fruit; calyx 3.5-6 mm long, equaling or shorter than the corolla; petals (2)3-7(10) mm long ... *L. arvensis*
3. Pedicel 2.5-4 mm long, erect in fruit; calyx 1.5-3 mm long, equaling or longer than the corolla; petals 1.4-2.3 mm long ... *L. ovalis*
4. Leaf blades broadly lanceolate to ovate-lanceolate, 1.5-6.5 cm wide; petioles ciliate the entire length ... *L. ciliata*
4. Leaf blades narrowly elliptic, elliptic-lanceolate, to linear-lanceolate, 0.2-3 cm wide; petioles ciliate proximally or the entire length [5]
5. Leaf blades glabrous at base, lanceolate to ovate, rounded to cuneate basally; sepals conspicuously veined; fruit 4-6.5 mm wide ... *L. lanceolata* var. *hybrida*

5. Leaf blades pubescent at base, lanceolate to linear, cuneate basally; sepals not conspicuously veined; fruit 2-5 mm wide ... *L. lanceolata* var. *lanceolata*

\**Lysimachia arvensis* (L.)U.Manns & Anderb.— {AFP}

*Lysimachia ciliata* L.— {AFP}

*Lysimachia lanceolata* Walter var. *hybrida* (Michx.)A.Gray— {AFP}

*Lysimachia lanceolata* Walter var. *lanceolata*— {AFP}

*Lysimachia minima* (L.)U.Manns & Anderb.— {AFP}

*Lysimachia ovalis* (Ruiz & Pav.)U.Manns & Anderb.— {AFP}

Myrsine {AFP}

*Myrsine cubana* A.DC.— {AFP}

Primula {AFP}

*Primula meadia* (L.)A.R.Mast & Reveal— {AFP} State Endangered.

Samolus {AFP}

1. Leaves often mostly basal, sometimes also cauline; peduncle (from the subtending leaf to the first pedicel) 5-25 cm long; pedicels ebracteate; calyx 2-3 mm long; corolla 3-7.5 mm long; staminodes absent; fruit 3-4 mm long ... *S. ebracteatus*

1. Leaves basal and cauline; peduncle (from the subtending leaf to the first pedicel or branch) 0-4 cm long; pedicel with a small bract near the middle; calyx 1-1.5(2) mm long; staminodes 5; corolla 1.2-3 mm long; fruit 2-3 mm long ... *S. parviflorus*

*Samolus ebracteatus* Kunth— {AFP}

*Samolus parviflorus* (Raf.— {AFP} Sometimes treated as a subspecies of *S. valerandi* which is restricted to the eastern hemisphere.

SAPOTACEAE {AFP}

1. Pedicels 10-25 mm long; sepals 6 or 8 in 2 whorls, the outer whorl valvate [2]

1. Pedicels 2-10(16) mm long; sepals 4-6 in 1 whorl, imbricate [3]

2. Sepals 6 in 2 whorls of 3; fruit with a roughened, scurfy brown surface, with 2-10 seeds; seed hilum linear ... *Manilkara*

2. Sepals 8 in 2 whorls of 4; fruit smooth, with 1(2) seeds; seed hilum circular ... *Mimusops*

3. Leaf blade with close-set, nearly perpendicular lateral veins, the lower surface densely brown to silvery tomentose; staminodes absent ... *Chrysophyllum*

3. Leaf blade mostly with spaced, ascending lateral veins, the lower surface glabrous to densely brown or silvery tomentose; staminodes present [4]

4. Stems with or without thorns, with or without short shoots; leaf blade lower surface glabrous, sericeous, pubescent, or tomentose; flowers 3-40 per fascicle; corolla lobes divided into a median and 2 lateral segments or the lateral segments absent ... *Sideroxylon*

4. Stems lacking thorns, lacking short shoots; leaf blade lower surface glabrous to pubescent; flowers 1-9 per fascicle; corolla lobes undivided [5]

5. Leaf blade apex obtuse to rounded; fruit red ... *Synsepalum*

5. Leaf blade apex acute, acuminate, to mucronate; fruit yellow or brown [6]

6. Leaf blade tertiary venation oblique; corolla margins papillate; staminodes papillate; stamens inserted near orifice of corolla tube; mature fruit and pulp yellow... *Lucuma campechiana*



6. Leaf blade tertiary venation reticulate; corolla margins ciliolate; staminodes glabrous; stamens inserted near middle of corolla tube; mature fruit brown, pulp orange ... *Pouteria sapota*

### **Chrysophyllum** {AFP}

1. Pedicels (4)8-15 mm long; fruits 4-8 cm wide with 4-10 seeds ... *C. cainito*

1. Pedicels 3-6(8) mm long; fruit 0.7-1 cm wide with 1 seed ... *C. oliviforme*

^ *Chrysophyllum cainito* L.—

***Chrysophyllum oliviforme*** L.— {AFP} State Threatened.

**Lucuma**: Recently removed from *Pouteria* s.lat. (Swenson et al. 2023).

^ *Lucuma campechiana* Kunth— {AFP}

### **Manilkara** {AFP}

1. Leaf blade lightly glaucous green, the adaxial lateral veins somewhat obscure when dry, the apex sometimes splitting but not folded in dried specimens, the base rounded to truncate (rarely acute); flower solitary or in fascicles of 2-5; sepals and corolla lobes spreading to recurved; corolla tube shorter than the lobes; fruiting pedicel enlarged and thickened towards apex; fruits 2.5-4 cm long or wide; seeds 14-18 mm long ... *M. jaimiqui* subsp. *emarginata*

1. Leaf blade green, the adaxial lateral veins discernible when dry, the apex often folded in dried specimens, the base acute; flower solitary; sepals and corolla lobes erect to ascending; corolla tube subequal to exceeding the lobes; fruiting pedicel thickened throughout, barely thicker towards the apex; fruits 3.5-8 cm long or wide; seeds 15-25 mm long ... *M. zapota*

***Manilkara jaimiqui*** (C.Wright ex Griseb.)Dubard subsp. ***emarginata*** (L.)Cronquist— {AFP} State Threatened.

\****Manilkara zapota*** (L.)P.Royen— {AFP} Occasionally naturalized, commonly cultivated for edible fruits. The sap was traditionally a source of chicle to make chewing gum (Landon 1935).

### **Mimusops** {AFP}

1. Petiole 5-15 mm long, 2-3 mm wide; leaf blade apex round to emarginate ... *M. coriacea*

1. Petiole 8-30 mm long, 1-2 mm wide; leaf blade apex obtuse and acuminate ... *M. elengi*

\****Mimusops coriacea*** (A.DC.)Miq.— {AFP}

\****Mimusops elengi*** L.— {AFP}

### **Pouteria** {AFP}

^ *Pouteria sapota* (Jacq.)H.E.Moore & Stearn—

### **Sideroxylon** {AFP}

1. Petiole (9-)15-40(-50) mm long (shorter on immature plants); leaf blade mostly 7-20 cm long, the margin often undulate; corolla lobes light yellow, lacking lateral segments; mature fruit 10-30 mm long, yellow to orange; seeds 15-20 mm long ... *S. foetidissimum*

1. Petiole 1-11(-14) mm long; leaf blade mostly 0.5-13 cm long, the margin usually plane; corolla lobes mostly white, with 2 lateral segments; mature fruit purple, 3-13 mm long; seeds 3-12 mm long [2]

2. Mature stems lacking thorns and short shoots; leaf blades acute-acuminate towards the apex; inflorescence nodes often crowded with the inflorescences touching or overlapping or nearly so; ovary glabrous ... *S. salicifolium*
2. Mature stems with thorns and/or short shoots, the short shoots sometimes with pseudowhorled leaves; leaf blades rounded to rounded-acute at the apex (or often acute-acuminate in *S. lycioides*); inflorescence nodes usually well-spaced with the inflorescences not touching or occasionally somewhat overlapping; ovary pubescent [3]
3. Stem and leaves glaucous; leaf blade midvein often indistinct near the tip and branching or sinuous, reticulate venation sometimes obscure, the upper surface often with fine pellucid spicules ... *S. celastrinum*
3. Stem and leaves not glaucous; leaf blade midvein mostly straight and distinct to the tip, reticulate venation generally apparent (unless obscured by pubescence), the upper surface without spicules [4]
4. Leaf blade underside lustrous with dense pubescence, the green color of the blade surface not apparent [5]
4. Leaf blade underside generally not lustrous, glabrous to moderately pubescent, the green color of the blade surface generally apparent [6]
5. Young stems glabrate, the stem bark green to cream-white becoming light gray; mature leaf blade underside with appressed silvery white trichomes; pedicels 4-5 mm long; corolla tube 1-1.6 mm long, median lobe 1.2-1.6 mm long, lateral segments 1.5-2.1 mm long (from junction with adjacent lateral segment); filament 1.3-1.6 mm long ... *S. alachuense*
5. Young stems moderately to densely pubescent, the stem bark green to green-brown becoming dark brown, red-brown, purple, to purple-gray; mature leaf blade underside with red-brown to only slightly tawny to silvery white trichomes, some trichomes villous or ascending; pedicels 6-12 mm long; corolla tube 1.5-2 mm long, median lobe 1.4-2.2 mm long, lateral segments 2-2.5 mm long (from junction with adjacent lateral segment); filament 1.5-2.5 mm long ... *S. tenax*
6. Leaf blades 1-3(-5) cm long [7]
6. Leaf blades (3-)5-12 cm long [9]
7. Mature shrub 1 m tall or less; young stems, petiole (often), pedicels, and sepals densely villous, strigose-villous, to strigose with red-brown hairs; fruit usually >1 cm long ... *S. rufohirtum*
7. Mature shrub or tree, taller than 1 m; young stems, petiole, pedicels, and sepals strigose to glabrate, occasionally sparsely villous, with whitish to tawny hairs; fruit usually <1 cm long [8]
8. Leaf blade lower surface usually persistently pubescent, sometimes glabrate, epidermal cell outlines marked by a distinct impressed groove, surface reticulate-ornamented; sepals and ovary usually densely strigose, sometimes glabrate ... *S. reclinatum* subsp. *austrofloridense*
8. Leaf blade lower surface glabrate, pubescent only along the midvein, epidermal cell outlines indistinct often, surface mostly smooth and irregularly undulating; sepals and ovary glabrate ... *S. reclinatum* subsp. *reclinatum*
9. Young stems strigose to glabrate; leaf blade with the tip acute-acuminate (rarely rounded), the lower surface glabrous or glabrate (hairs scattered along midribs); pedicels glabrous ... *S. lycioides*
9. Young stems villous to glabrate; leaf blade with the tip rounded to bluntly acute (rarely acute-acuminate), the lower surface hairy [10]
10. Pedicels lanate or glabrous; inflorescence with (2)6-25 flowers; pedicels villous to glabrate; sepals villous; stamens 2.5-2.8 mm long; styles 1-1.5 mm long ... *S. lanuginosum*
10. Pedicels glabrous or glabrate; inflorescence with 1-9 flowers; pedicels glabrate; sepals glabrous to villous; stamens 1-1.3 mm long; styles 0.8-1 mm long ... *S. thornei*

*Sideroxylon alachuense* L.C.Anderson— {AFP} Endemic. State Endangered.  
*Sideroxylon celastrinum* (Kunth)T.D.Penn.— {AFP}  
*Sideroxylon foetidissimum* Jacq.— {AFP}  
*Sideroxylon lanuginosum* Michx.— {AFP}  
*Sideroxylon lycioides* L.— {AFP} State Endangered.  
*Sideroxylon reclinatum* Michx. subsp. *austrofloridense* (Whetstone)Kartesz & Gandhi— {AFP}  
Endemic. Federally Threatened. State Endangered. See [Lange et al. \(2023\)](#).  
*Sideroxylon reclinatum* Michx. subsp. *reclinatum*— {AFP}  
*Sideroxylon rufohirtum* Herring & Judd— {AFP} Endemic.  
*Sideroxylon salicifolium* (L.)Lam.— {AFP}  
*Sideroxylon tenax* L.— {AFP}  
*Sideroxylon thornei* (Cronquist)T.D.Penn.— {AFP} State Endangered.

### Synsepalum

^ *Synsepalum dulcificum* (Schumach. & Thonn.)Baill.—

### PENTAPHYLACACEAE {AFP}

#### Ternstroemia {AFP}

^ *Ternstroemia gymnanthera* (Wight & Arn.)Bedd.— {AFP}

### CLETHRACEAE {AFP}

#### Clethra {AFP}

1. Young stems puberulent; leaf blade lower surface sparsely hairy, upper surface glabrous; petioles 2.5-3.5(6) cm long; styles 6-7 mm long, hairy in proximal 1/2; filaments 0.2-0.3(0.4) mm wide ... *C. alnifolia*

1. Young stems woolly-tomentose; leaf blade lower surface woolly-tomentose, upper surface sparsely hairy; petioles 0.5-1(1.5) cm long; styles 3.5-5 mm long, hairy throughout; filaments 0.4-0.5(0.7) mm wide ... *C. tomentosa*

*Clethra alnifolia* L.— {AFP} Name conserved with a new type, as its original type actually belonged to *C. tomentosa* ([McMillan & Hackney Blackwell 2015](#)).

*Clethra tomentosa* Lam.— {AFP} Sometimes subsumed under or treated as var. *pubescens* ([Wilbur & Hespenheide 1967](#)) of *C. alnifolia*.

### CYRILLACEAE {AFP}

1. Petiole usually indistinct or absent; leaf blade venation obscure, the underside surface often whitish; inflorescence produced before new shoot growth of current season, often interspersed with the leaves, 2-6 cm long, bracts subtending flowers caducous; petals 6-8 mm long; stamens 10; filaments basally flattened; fruits samaralike, 2-5-winged, 5-7 mm long ...  
*Cliftonia monophylla*

1. Petiole usually distinct, 1-3 mm long; leaf blade venation mostly visibly apparent, the underside surface pale green; inflorescence produced after new showth of current season, often without leaves below on the stem, 6-18 cm long, bracts subtending flowers persistent; petals 2.5-3.5 mm long; stamens 5; filaments terete; fruits berrylike, unwinged, 2-2.5 mm long ...  
*Cyrilla racemiflora*

#### Cliftonia {AFP}

**Cliftonia monophylla** (Lam.)Sarg.— {AFP}

**Cyrilla** {AFP}

**Cyrilla racemiflora** L.— {AFP} Central FL to panhandle (SE USA, Neotropics). Small-leaved forms have gone by the name *C. parvifolia*. According to Thomas (1960: 99-103), the two forms "intergrade completely in certain local populations, and there is evidence of considerable gene exchange throughout the area of overlap" (see also Godfrey & Wooten 1981; FNA, vol. 8). Thomas (1960: 103-104) also did not find *C. arida* to be distinct morphologically or by habitat. See also: <https://www.inaturalist.org/observations/19201688>

**ERICACEAE** {AFP}

1. Non-photosynthetic, mycoheterotrophic ephemeral herb; leaves non-green, scale-like [2]
1. Photosynthetic, persistent vine, subshrub, shrub, or tree; leaves green, with an expanded blade or needle-like [4]
2. Flower or fruit solitary on the stem ... *Monotropa*
2. Flower or fruit 2 or more (rarely solitary) per stem [3]
3. Stem white to red, rarely purplish red; petals free, usually hairy; ovaries (4)5(6)-locular; fruits capsular; inflorescence axes fibrous, persistent after seed dispersal ... *Hypopitys lanuginosa*
3. Stem dark purple, violet, to brownish purple; petals connate most of their length, glabrous; ovaries 1-locular; fruits baccate (fleshy); inflorescence axes not fibrous, not persistent ... *Monotropsis reynoldsiae*
4. Plant prostrate or trailing ... *Epigaea repens*
4. Plant erect, ascending, or vining [5]
5. Plant dioecious; leaves linear; flower unisexual, with 2-3 sepals and 2-3 petals, free ... *Ceratiola ericoides*
5. Plant monoecious; leaves with an expanded blade, not linear; flower bisexual or unisexual, with 4-8 sepals and 4-8 petals, sometimes connate [6]
6. Mature plant usually <50 cm tall; stem usually with <13 leaves; leaf blade often starkly pale to whitish along veins; peduncle nearly half the height of the plant ... *Chimaphila maculata*
6. Mature plant 20 cm to 35 m tall; stem usually with >13 leaves; leaf blade uniformly colored; peduncle not evident or only a very small portion of the plant height [7]
7. Ovary inferior; fruit a fleshy berry or drupe [8]
7. Ovary superior; fruit a dry capsule [9]
8. Leaf blade lower surface gland-dotted, or stipitate-glandular and margins entire; pistil 5-10-carpellate; ovary 5- or 10-locular; fruit drupaceous ... *Gaylussacia*
8. Leaf blade lower surface eglandular, or stipitate-glandular and usually at least some margins serrate; pistil 4-5-carpellate; ovary 4-5-locular; fruit a berry ... *Vaccinium*
9. Stem often persistently pilose; petals free, sticky ... *Bejaria racemosa*
9. Stem glabrous, pubescent, to pilose; petals connate for ca. ½ or more of their length, not markedly sticky [10]
10. Leaf blades 0.5-1.4 cm long ... *Kalmia hirsuta*
10. Leaf blades 2-20 cm long [11]
11. Leaf blades ferruginous-lepidote [12]
11. Leaf blades not lepidote [13]
12. Corolla urceolate (urn-shaped); capsules loculicidal ... *Lyonia*
12. Corolla rotate or not urceolate; capsules septicidal ... *Rhododendron minus* var. *chapmanii*
13. Leaf blade margins entire, the tip mostly obtuse, acute, to acuminate, sometimes stipitate-glandular [14]

13. Leaf blade margins toothed (usually at least some on plant, sometimes subtly toothed) or entire with an abrupt to tapered fine-pointed acuminate apex, if stipitate-glandular then leaf blades toothed [16]
14. Corolla urceolate (urn-shaped); capsules loculicidal ... *Lyonia*
14. Corolla rotate or not urceolate; capsules septicidal [15]
15. Branching mostly alternate and spaced; corolla radially symmetric, scarcely forming free lobes, tube indistinct; anthers included; fruit width and length subequal or shorter than wide ... *Kalmia latifolia*
15. Branching often pseudoverticillate; corolla bilaterally symmetric, with spreading free lobes, forming a tube below the lobes; anthers strongly exerted ... *Rhododendron*
16. Trees to 25(35) m tall; petioles 0.8-2.8 cm long; larger leaf blades 9-20 cm long, 3.5-6.5 cm wide; ... *Oxydendrum arboreum*
16. Vines, or shrubs to small trees to 7 m tall; petioles 0.1-1 cm long; leaf blades 5-11 cm long, 1.5-5 cm wide [17]
17. Vines or shrubs; petiole stout, thicker than the blade midrib; leaf blade margins revolute ... *Pieris phyllifolia*
17. Shrubs; petiole stout or slender; leaf blade margins not revolute or scarcely so [18]
18. Pith chambered; leaf blade secondary veins and reticulate veins similarly pronounced and scarcely differentiated; pedicels 5-13 mm long ... *Agarista populifolia*
18. Pith solid; leaf blade secondary veins pronounced and unlike obscure reticulate venation; pedicels 1-4 mm long [19]
19. Leaves persistent; petiole 5-10 mm long; leaf blade margin thickened or slightly revolute, larger blades mostly with 6-12 major secondary veins on each side; inflorescence to 4 cm long; fruit 4-6 mm wide ... *Leucothoe axillaris*
19. Leaves deciduous to semi-persistent; petiole 1-4 mm long; leaf blade margin not thickened, larger blades mostly with 4-7 major secondary veins on each side; inflorescence to 25 cm long; fruit 2-4 mm wide [20]
20. Leaf blade lower surface much paler than the upper surface; inflorescence often leafy; corolla 2-4.5 mm long, subequal to the pedicel; anther without awns; capsules with clearly thickened sutures; seeds ca. 100-300 per fruit ... *Lyonia ligustrina* var. *foliosiflora*
20. Leaf blade lower surface slightly paler than the upper surface; inflorescence not leafy; corolla 6-9 mm long, longer than the pedicel; anthers 4-awned; capsule sutures not noticeably thickened; seeds ca. 5-10 per fruit ... *Eubotrys racemosus*

### **Agarista** {AFP}

***Agarista populifolia*** (Lam.) Judd— {AFP}

### **Bejaria** {AFP}

***Bejaria racemosa*** Vent.— {AFP}

### **Ceratiola** {AFP}

***Ceratiola ericoides*** Michx.— {AFP}

### **Chimaphila** {AFP}

***Chimaphila maculata*** (L.) Pursh— {AFP}

### **Epigaea** {AFP}

***Epigaea repens*** L.— {AFP} State Endangered.

## Eubotrys {AFP}

*Eubotrys racemosus* (L.) Nutt.— {AFP}

## Gaylussacia {AFP}

1. Leaves (esp. the lower surface), hypanthium, and fruit stipitate-glandular; leaves with or without sessile glands; inflorescence bracts subequal to longer than pedicels, persistent [2]

1. Leaves, hypanthium, and fruit without stipitate glands; leaf blades with sessile glands below only; inflorescence bracts shorter than pedicels, early-deciduous (*G. frondosa* s.lat.) [3]

2. Plant 10-30(40) cm tall; lower surface of the leaves uniformly dotted with sessile glands, sometimes absent; hypanthium and fruit with stipitate glands to ca. 0.5 mm long; corolla 3-5 mm long ... *G. dumosa*

2. Plant 30-100(150) cm tall; lower surface of the leaves not gland-dotted, with stipitate glands only; hypanthium and fruit hirsute with stipitate glands to ca. 1 mm long; corolla 6.5-8.5 mm long ... *G. mosieri*

3. Twigs of current season glabrous or glabrate; leaf blade lower surface glabrous or hairy, glaucescent, sessile glands yellowish or orangish brown (panhandle; *G. frondosa* s.str.) ... *G. frondosa*

3. Twigs of current season densely hairy with short unicellular hairs; leaf blade lower surface sparsely to densely hairy, glaucous or glaucescent, sessile glands yellowish, orangish, or reddish (widespread) [4]

4. Plants 0.2-0.6(1) m tall; larger leaf blades 2-4 cm long, 1-2 cm wide, surfaces glabrous or sparsely short-hairy with the longer hairs ca. 0.1-0.25 mm long, glaucous on the lower surface, the sessile glands usually reddish or reddish brown; calyx glaucous (widespread) ... *G. nana*

4. Plants 0.75-2.0 m tall; larger leaf blades 3-6 cm long, 2-3 cm wide, surfaces semi-moderately to densely short-hairy with the longer hairs ca. 0.25-0.65 mm long, glaucescent on the lower surface, the sessile glands usually yellowish or orangish brown; calyx not glaucous (widespread) ... *G. tomentosa*

*Gaylussacia dumosa* (Andrews) A. Gray— {AFP}

*Gaylussacia frondosa* (L.) Torr. & A. Gray— {AFP}

*Gaylussacia mosieri* Small— {AFP}

*Gaylussacia nana* (A. Gray) Small—

*Gaylussacia tomentosa* (A. Gray) Pursh ex Small—

## Hypopitys {AFP}

*Hypopitys lanuginosa* (Michx.) Raf.— {AFP} State Endangered.

## Kalmia {AFP}

1. Plants to 1.2 m tall; leaf blade surfaces usually hairy, 0.5-1.4 cm long; inflorescences solitary flowers or sometimes fascicles or racemes scattered along stem in leaf axils ... *K. hirsuta*

1. Plants to 8(12) m tall; leaf blade surfaces glabrous to glabrescent (midrib often puberulent), 4-12 cm long; inflorescences terminal panicles ... *K. latifolia*

*Kalmia hirsuta* Walter— {AFP}

*Kalmia latifolia* L.— {AFP} State Threatened.

## Leucothoe {AFP}

***Leucothoe axillaris*** (Lam.)D.Don— {AFP}

**Lyonia** {AFP}

1. Leaf blade lower surface, pedicels, and calyx ferruginous-lepidote [2]
1. Leaf blade lower surface, pedicels, and calyx glabrous to hairy, not lepidote [3]
2. Irregular shrub or tree to 6(12) m tall, with branches often spreading; leaf blades not reduced in size or only slightly so towards the inflorescence apex, the blade usually revolute, the secondary veins often impressed; flowers mostly restricted to stem of previous year ... *L. ferruginea*
2. Shrub to 2(3) m tall, with branches often strict to ascending; leaf blades reduced in size towards the inflorescence apex, the blade not revolute or only slightly so, the secondary veins usually not noticeably impressed; flowers frequent on current year's shoot and some on stem of previous year ... *L. fruticosa*
3. Leaf blade margins serrulate (sometimes obscurely so); calyx lobes 0.5-1.5 mm long; corolla about as wide as long, 2-4(4.5) mm long; fruit subglobose ... *L. ligustrina* var. *foliosiflora*
3. Leaf blade margins entire; calyx lobes 2-9.5 mm long; corollas longer than wide, 5-14 mm long; fruit ovoid to ovoid-globose [4]
4. Leaf blade persistent, stiffly coriaceous, lower surface with obscure or faint venation, the margin revolute; corolla 2-5 mm wide, subtly conic, flared at the base, white, pink, to red; filaments roughened; sepals usually persistent with fruit ... *L. lucida*
4. Leaf blade deciduous, membranous, lower surface with conspicuous secondary and reticulate venation, the margin not revolute or scarcely so; corolla 4-9 mm wide, broadly cylindrical, not flared at the base, white, rarely pink; filaments hairy; sepals deciduous, usually absent from fruit ... *L. mariana*

***Lyonia ferruginea*** (Walter)Nutt.— {AFP}

***Lyonia fruticosa*** (Michx.)G.S.Torr.— {AFP}

***Lyonia ligustrina*** (L.)DC. var. ***foliosiflora*** (Michx.)Fernald— {AFP}

***Lyonia lucida*** (Lam.)K.Koch— {AFP}

***Lyonia mariana*** (L.)D.Don— {AFP}

**Monotropa** {AFP}

1. Petals 16-24 mm long, 7-12 mm of it being hairy; tip of nectar spur (at base of ovary) angled downward to upcurved towards the flower apex, angle of 45-140; longest stamen (10)14-17(18) mm long, the filament hairs 0.35-1.15 mm long; filament width distally 0.5-0.8(1) times as wide as width at base of filament; ovary (6)10-12 mm long; scrub, scrubby flatwoods, or mesic-xeric uplands, mycorrhizal with *Lactifluus deceptivus* complex, rarely with *Russula mutabilis* ... *M. brittonii*
1. Petals 13-23 mm long, 3-9 mm of it being hairy; tip of nectar spur (at base of ovary) pointed straight down to angled downward, angle of 0-50(80); longest stamen 7-15 mm long, the filament hairs 0.2-0.7(0.8) mm long; filament width distally 0.7-1.2(1.5) times as wide as width at base of filament; ovary 5-11.5 mm long; mesic habitats, mycorrhizal with *Russula* or *Lactarius* ... *M. uniflora*

***Monotropa brittonii*** Small—Endemic. Scrub, primarily.

***Monotropa uniflora*** L.— {AFP} Upland hammocks, primarily.

**Monotropsis** {AFP}

***Monotropis reynoldsiae*** (A.Gray)A.Heller— {AFP} Endemic. State Endangered.

**Oxydendrum** {AFP}

***Oxydendrum arboreum*** (L.)DC.— {AFP}

**Pieris** {AFP}

***Pieris phyllyreifolia*** (Hook.)DC.— {AFP}

**Rhododendron** {AFP} Several Asian taxa are cultivated, and some are hybrids; thus identification is muddled. Some of these taxa allegedly cultivated are keyed below.

1. Plant ferruginous-lepidote with glandular-peltate scales; leaves evergreen, often revolute; corolla upper lobe with spots; stamens 10 per flower ... *R. minus* var. *chapmanii*
1. Plant glabrous, hairy, or stipitate-glandular, not lepidote, without peltate scales; leaves evergreen or deciduous, plane; corolla upper lobe lacking spots; stamens 5 per flower [2]
2. Leaves deciduous; corolla upper lobe lacking spots; stamens 5 per flower; native, sometimes cultivated, usually forming fruit [3]
2. Leaves evergreen or nearly so; corolla upper lobe with or without spots or flecks; stamens 5 or 10 per flower; cultivated, often not forming fruit [6]
3. Leaves mostly fully developed or nearly so before flowers open, vegetative bud scales absent; flowers opening after appearance of leaves; corolla white, rarely pinkish, without blotches or spots on the upper lobe ... *R. viscosum*
3. Leaves mostly appearing simultaneous with or after flowers, vegetative bud scales often present; flowers opening before or with appearance of leaves; corolla white, pink, or yellow to orange, the upper lobe with or without contrasting or darker colored areas [4]
4. Corolla white to pink, the tube darker colored and pinkish, upper lobe without contrasting or darker colored area ... *R. canescens*
4. Corolla white, pink-tinged, the tube white to greenish or corolla yellow to orange, the tube yellow to reddish, the upper lobe often with darker or contrasting area (sometimes obscure) [5]
5. Stems, leaf blade upper surface, and fruit eglandular-hairy; flowers fragrant; corolla white, rarely pinkish, upper lobe with contrasting yellowish area ... *R. alabamense*
5. Stems, leaf blade upper surface, and fruit stipitate-glandular; flowers usually inodorous or slightly fragrant; corolla yellow, orange, to orange-red (tube often orange-red or red), upper lobe with indistinct darker yellow, orange, or red blotch ... *R. austrinum*
6. Young stems villous, glandular; corolla white (infrequently pale red), upper lobe lacking flecks; stamens 10, longer than the corolla ... *R. mucronatum*
6. Young stems strigose, eglandular; corolla variously colored, sometimes white, upper lobe with darker colored spots or flecks; stamens 5 or 10, shorter than to subequal to corolla [7]
7. Leaf blades 1.7-3.2(4.5) cm long, 0.5-1.2 cm wide; corolla pink to red; stamens (4)5(6) [8]
7. Leaf blades 1.5-5(7) cm long, 0.5-3 cm wide; corolla variously colored, including red; stamens (6)7-10 [9]
8. Pedicel white-strigose; corolla 3-4 cm long ... *R. indicum*
8. Pedicel ferruginous-strigose; corolla 1.2-2.5 cm long ... *R. obtusum*
9. Corolla pink to rose-purple, (4.5)4.8-5.2(6) cm long; stamens shorter than the corolla ... *R. pulchrum*
9. Corolla variously colored, 3.5-4(4.5) cm long; stamens subequal to corolla ... *R. simsii*

***Rhododendron alabamense*** Rehder— {AFP} State Endangered.



***Rhododendron austrinum*** (Small)Rehder— {AFP} State Endangered.

***Rhododendron canescens*** (Michx.)Sweet— {AFP} Commercially Exploited.

***Rhododendron minus*** Michaux var. ***chapmanii*** (A.Gray)W.H.Duncan & Pullen— {AFP} Endemic.  
Federally Endangered. State Endangered.

***Rhododendron viscosum*** (L.)Torr.— {AFP}

## **Vaccinium** {AFP}

1. Larger leaf blades 0.5-3(3.7) cm long [2]

1. Larger leaf blades (2.5)3-7 cm long [4]

2. Shrubs to 3 m tall; larger leaf blades (1.5)2-3(3.7) cm long, serrulate-ciliate to entire, secondary veins 3-7 per side, deciduous (diploid; panhandle and northern peninsula) ... *V. elliotii*

2. Low shrubs to 1.5 m tall; larger leaf blades <1.5(2) cm long, crenulate-serrate to entire, secondary veins 2-4 per side, persistent [3]

3. Leaf blade lower surface eglandular (or glands very rare on few leaves, marginal teeth may have glands); young stems, leaves, hypanthium, and fruit usually glaucous (diploid; widespread) ... *V. darrowii*

3. Leaf blade lower surface stipitate-glandular; young stems, leaves, hypanthium, and fruit usually not glaucous (tetraploid; widespread) ... *V. myrsinites*

4. Young stems, usually by the second- to fifth-year, roughened-verrucose (often obscure) [5]

4. Young stems not verrucose [10]

5. Leaf blade lower surface stipitate-glandular [6]

5. Leaf blade lower surface eglandular [8]

6. Plants <1.3 m tall; stipitate glands mostly with clavate- to ellipsoid-cylindrical heads (diploid) ... *V. tenellum*

6. Plants 0.3-4(7) m tall; stipitate glands mostly with obovoid to globose heads (hexaploid) [7]

7. Plants 1-4.5(7) m tall; leaf blades coriaceous, bluish or glaucous, lower surface sparsely stipitate-glandular, occasionally moderately dense, eglandular hairs 0.3-0.5(0.6) mm long; hypanthium usually glaucous; fruits 8-16 mm wide ... *V. ashei*

7. Plants 0.3-2.5 m tall; leaf blades chartaceous, green, lower surface usually moderately densely stipitate-glandular, eglandular hairs 0.4-1 mm long; hypanthium not glaucous; fruit 4-12 mm wide ... *V. virgatum*

8. Flowers 5-6 mm long; fruits 5-8 mm wide (diploid; northern Florida; *V. atrococcum*) ... *V. caesariense*

8. Flowers 6-11 mm long; fruit 6-12 mm wide [9]

9. Stems and leaves glabrous to pubescent; leaves 6-8 cm long, 2.5-4 cm wide (tetraploid; panhandle and northern peninsula; *V. australe*, *V. arkansanum*) ... *V. formosum*

9. Stems and leaves pubescent; leaves 3.5-5 cm long, 1.5-2.5 cm wide (tetraploid; widespread) ... *V. fuscum*

10. Bark often becoming flaky-rectangular; leaf blade upper surface lustrous with conspicuous venation, the lower surface light green, the blade base often acute, often stipitate glandular; hypanthium jointed with the pedicel; corolla closed in bud; anthers included (widespread) ... *V. arboreum*

10. Bark usually tight to peeling in strips; leaf blade upper surface dull with obscure venation, the lower surface glaucous or not, the blade base often rounded to subcordate, stipitate-glandular or not; hypanthium continuous with the pedicel; corolla open in bud; anthers exerted (widespread) (*V. stamineum*) [11]

11. Stems and pedicels densely stipitate-glandular (panhandle and northwestern peninsula) ... *V. stamineum* var. *glandulosum*

- 11. Stems and pedicels eglandular or sparsely stipitate-glandular [12]
- 12. Hypanthium and fruit glabrous [13]
- 12. Hypanthium and fruit pubescent [14]
- 13. Leaf blade lower surface usually whitened-glaucous; flowers solitary, scattered, subtended by slightly reduced to normal-sized leaves (widespread in Florida) ... *V. stamineum* var. *caesium*
- 13. Leaf blade lower surface not whitened-glaucous; flowers in distinct inflorescences, subtended by greatly reduced leaves (panhandle) ... *V. stamineum* var. *stamineum*
- 14. Flowers in axils of normal-sized leaves; calyx and hypanthium sparingly pubescent, eglandular (panhandle) ... *V. stamineum* var. *multiflorum*
- 14. Flowers usually in axils of greatly reduced leaves; calyx and hypanthium densely hirsute and often stipitate-glandular (panhandle, rare in peninsula) ... *V. stamineum* var. *sericeum*

***Vaccinium arboreum*** Marshall— {AFP}

***Vaccinium ashei*** Reade—

***Vaccinium darrowii*** Camp— {AFP}

***Vaccinium elliotii*** Chapm.—

***Vaccinium fuscatum*** L.— {AFP}

***Vaccinium myrsinites*** Lam.— {AFP}

***Vaccinium stamineum*** L.— {AFP}

***Vaccinium virgatum*** Aiton—

^ *Vaccinium* cv. group 'Southern Highbush'—Tetraploid; derivative of northern highbush with some elements of *V. darrowii*, *V. elliotii*, etc. Young shoots not glaucous and leaf blades subtentire.

^ *Vaccinium* cv. group 'Rabbiteye'—Hexaploid; mostly *V. ashei*, may have elements of *V. constablei*, etc. Leaf blades toothed and glaucous; stems and leaves glabrous to sparsely pubescent (vs. sparsely to moderately pubescent in wild-type *V. ashei*).

## SARRACENIACEAE {AFP}

### ***Sarracenia*** {AFP}

- 1. Pitchers with white areolae on hoods and/or distal portions of tubes [2]
- 1. Pitchers without white areolae on hoods and tubes [4]
- 2. Pitchers sprawling, decumbent, or sometimes ascending; orifices opening laterally beneath subglobose hoods; petals maroon-red ... *S. psittacina*
- 2. Pitchers erect; orifices opening terminally, from in front of erect or recurved hoods; petals maroon to red or yellow [3]
- 3. Pitchers with areas of white areolae all around distal portion of tube and throughout hood; hoods recurved adaxially, held well beyond orifices; sepals maroon; petals maroon to red ... *S. leucophylla*
- 3. Pitchers with prominently circular, white areolae distally opposite orifice; hoods convex, arching-recurved closely over orifices; sepals yellowish green; petals yellow ... *S. minor*
- 4. Pitchers urceolate, decumbent or sprawling to ascending; hoods erect or with lobes arched together over orifices, orifices gaping ... *S. rosea*
- 4. Pitchers tubiform, erect, rarely decumbent; hoods recurved adaxially, covering orifices [5]
- 5. Pitchers soft, external surface densely fine-pubescent; orifice rim yellow-green, rarely red, loosely revolute; major veins of distal pitcher tube maroon to red-purple on internal surface, indistinctly colored on external surface; major veins of hoods, if distinctly colored at all, colored mostly on adaxial proximal half of hood ... *S. rubra* subsp. *wherryi*

5. Pitchers firm, waxy, glabrous or puberulent; orifice rim green, yellow-green, to red or maroon, loosely to tightly revolute; major veins of external and internal surfaces of distal portion of tube and both surfaces of hood red, maroon, or red-purple [6]

6. Pitchers 25-100 cm long, glabrous, orifice 2-7 cm wide, hood 3(5-14) cm wide; petals yellow ... *S. flava*

6. Pitchers 20-57 cm long, usually puberulent, orifice 2.4-3.5 cm wide, hood 2-4 cm wide; petals maroon to red ... *S. rubra* subsp. *gulfensis*

***Sarracenia flava*** L.— {AFP}

***Sarracenia leucophylla*** Raf.— {AFP} State Endangered.

***Sarracenia minor*** Walter— {AFP} State Threatened.

***Sarracenia psittacina*** Michx.— {AFP} State Threatened.

***Sarracenia rosea*** Naczi et al.— {AFP} State Threatened.

***Sarracenia rubra*** Walter subsp. ***gulfensis*** D.E.Schnell— {AFP} Endemic. State Threatened.

***Sarracenia rubra*** Walt. subsp. ***wherryi*** (Case & R.B.Case)D.E.Schnell— {AFP} State Threatened.

Named hybrids:

***Sarracenia* × *bellii*** Mellich.— {AFP}

***Sarracenia* × *chelsonii*** Masters— {AFP}

***Sarracenia* × *courtii*** Anon.— {AFP}

***Sarracenia* × *formosa*** Veitch ex Mast.— {AFP}

***Sarracenia* × *gilpinii*** C.R.Bell & Case— {AFP}

***Sarracenia* × *mitchelliana*** G.Nicholson— {AFP}

***Sarracenia* × *mooreana*** Veitch— {AFP}

***Sarracenia* × *naczii*** Mellich.— {AFP}

***Sarracenia* × *wrigleyana*** S.G.— {AFP}

## STYRACACEAE {AFP}

1. Buds with scales; pith chambered; petiole 11-35 mm long; inflorescences borne on shoots of previous growing season; fertile shoots of current growing season without fully developed leaves (rarely fully developed); articulation between pedicels and flowers present; corolla lobes 4; ovaries completely inferior; fruits winged ... *Halesia*

1. Buds without scales; pith continuous; petiole 2-12 mm long; inflorescences borne on shoots of current growing season; fertile shoots of current growing season with fully developed leaves; articulation between pedicels and flowers absent; corolla lobes 5-6(8); ovaries partly inferior; fruits not winged ... *Styrax*

## *Halesia* {AFP}

1. Leaf blade 1.5-3.3 times longer than wide, margin mostly with 25-80 teeth per side; sepals 2-5 mm long; corollas glabrous, tube 7-26 mm; stamens 12-16; filaments adnate to corolla 2-3 mm; styles glabrous; fruits 4-winged, wings roughly equal ... *H. carolina*

1. Leaf blade 1.2-2.2 times longer than wide, margin mostly with 12-26 teeth per side; sepals 4-8 mm long; corollas pubescent, the free lobes half or more the flower length; stamens 7-10; filaments adnate to corolla to 1 mm; styles hairy; fruits 2- or 4-winged, if 4-winged then 2 broad wings alternate with 2 much narrower wings ... *H. diptera*

***Halesia carolina*** L.— {AFP}

***Halesia diptera*** J.Ellis— {AFP}

### **Styrax** {AFP}

1. Petiole 2-6 mm long; largest leaf blades on sterile shoots 2-5.7 cm wide, the longest arms of leaf hairs 0.1-0.2 mm long; calyx 2.5-4 mm long; corolla tube 1.5-3 mm; false-terminal racemes 2-3.5 cm; fruit capsular, dehiscent nearly or completely to base, broadly exposing seeds ... *S. americanus*

1. Petiole 4-12 mm long; largest leaf blades on sterile shoots 5-20 cm wide, the longest arms of leaf hairs 0.2-0.6 mm long; calyx 4-6 mm long; corolla tubes 3-5 mm; false-terminal racemes 3-11.5 cm; fruit nutlike, indehiscent or at most with 1-3 narrow longitudinal fissures, barely exposing seeds ... *S. grandifolius*

***Styrax americanus*** Lam.— {AFP}

***Styrax grandifolius*** Aiton— {AFP}

### **SYMPLOCACEAE** {AFP}

#### **Symplocos** {AFP}

***Symplocos tinctoria*** (L.)L'Hér.— {AFP}

### **THEACEAE** {AFP}

1. Shrubs or small trees to 4 m tall; leaves evergreen; seeds wingless ... *Camellia*

1. Shrubs or trees 2-30 m tall; leaves deciduous or evergreen; seeds winged or wingless [2]

2. Petiole gracile, ca. 1 mm thick or less; leaf blade chartaceous, 1.5-2.3 times longer than wide, often aging yellow or purplish; filaments red to purplish, anthers blue to grayish; inflorescence bracts usually persistent; capsules conic, columella absent ... *Stewartia malacodendron*

2. Petiole stout, ca. 1-2 mm thick; leaf blades coriaceous, 2.2-3.5 times longer than wide, often aging red; filaments yellow, anthers yellow to orangeish; inflorescence bracts deciduous; capsules ovoid, columella present

3. Pollen malformed ... *Gordlinia*

3. Pollen normal [4]

4. Stem and petiole pubescent; leaves deciduous, the blade usually toothed below the middle, venation conspicuous; pedicels 0.2-1.5(4) cm long; sepals deciduous; capsule dehiscence loculicidal from apex and septicidal from base; seeds reniform, apical wing relatively narrow or absent ... *Franklinia altamaha*

4. Stem and petiole glabrate; leaves evergreen, the blade toothed to near middle, venation relatively obscure; pedicels (3)5-7 cm long; sepals persistent; capsule dehiscence loculicidal from apex only; seeds ovoid, apical wing prominent ... *Gordonia lasianthus*

### **Camellia**

1. Leaf blades 2.5-3.5 times as long as wide; flowers pedicellate; bracteoles differentiated from sepals; sepals persistent, coriaceous ... *C. sinensis*

1. Leaf blades 1.8-2.6 times as long as wide; flower subsessile; bracteoles indistinct from sepals; sepals caducous, scale-like [2]

2. Petiole 7-12 mm long; leaf blades 6-12 cm long, 3-7 cm wide; petals connate basally; filaments connate into a tube; ovary glabrous; fruit rarely if ever forming in cultivars ... *C. japonica*

2. Petiole 2-5 mm long; leaf blades 3-5(7) cm long, 1-3 cm wide; petals scantily connate at base; filaments slightly connate base; ovary villous; fruit often formed ... *C. sasanqua*

- ^ *Camellia japonica* L.—
- ^ *Camellia sasanqua* Thunb.—
- ^ *Camellia sinensis* (L.)Kuntze—

**Franklinia**

^ *Franklinia alatamaha* Marshall—

**Gordlinia**

^x *Gordlinia grandiflora*—Hybrid between *Franklinia* and *Gordonia*.

**Gordonia {AFP}**

*Gordonia lasianthus* (L.)J.Ellis— {AFP}

**Stewartia {AFP}**

*Stewartia malacodendron* L.— {AFP} State Endangered.

**LAMIIDS**

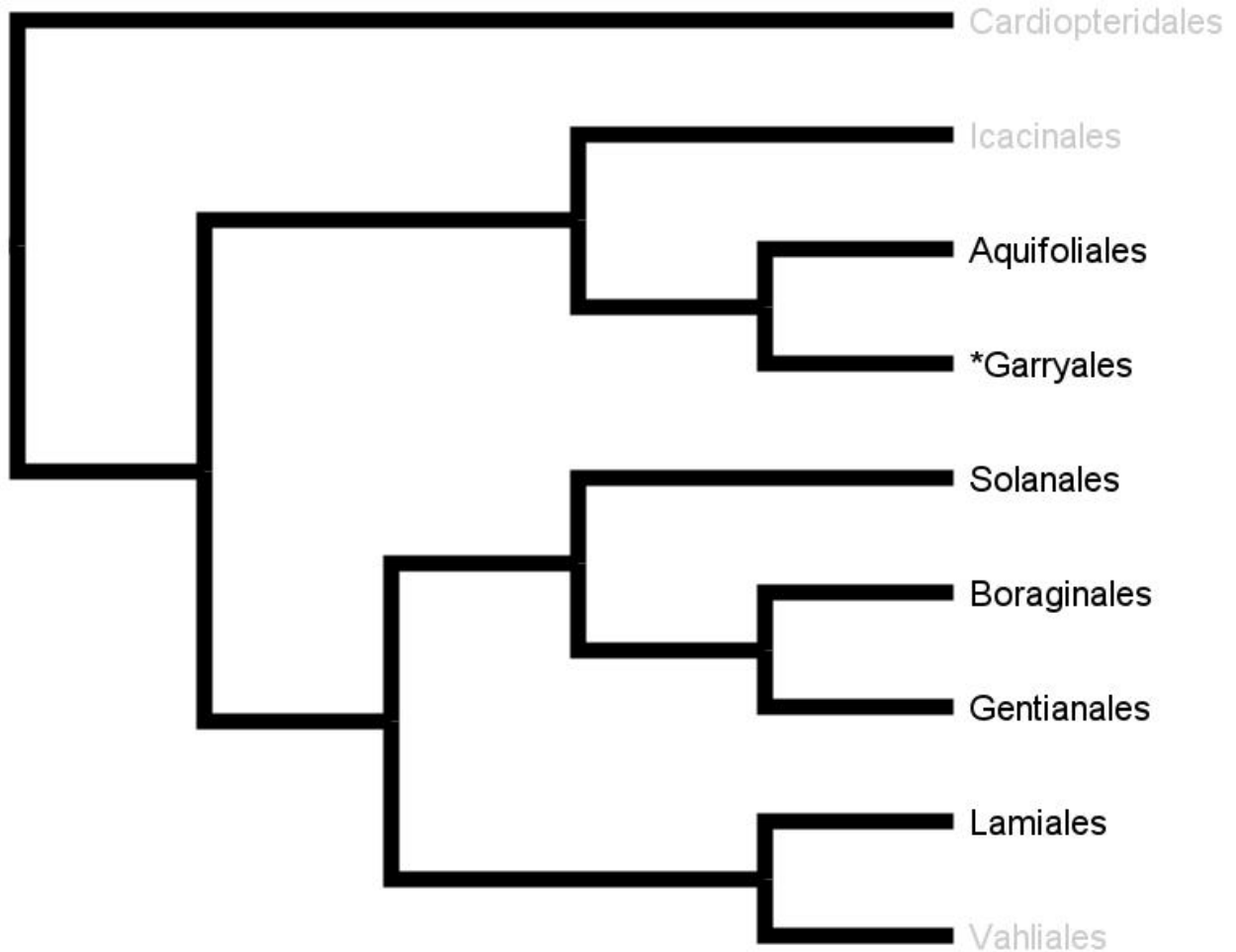


Figure: Estimated phylogeny of extant lamiids. Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## AQUIFOLIALES

### AQUIFOLIACEAE {AFP}

#### Ilex {AFP}

1. Leaf blade apex with a rigid prickle 1 mm long or longer, the margins entire or spinose like the leaf apex [2]
1. Leaf blade apex unarmed, bristle-tipped, or with a prickle less than 1 mm long, the margins entire, crenate, dentate, serrate, to spinulose-serrate [4]
2. Inflorescence sessile, many-flowered, on older part of branch ... *I. cornuta*
2. Flower singular or in many-flowered, pedunculate inflorescence, on recent growth [3]
3. Leaf blades light green, 1--2.5 cm wide, the margin distinctly revolute ... *I. opaca* var. *arenicola*
3. Leaf blades dark green, mostly 2.5--5.5 cm wide, the margin flat or only slightly revolute ... *I. opaca* var. *opaca*
4. Leaf blade entire or with few, sparse teeth mostly above the middle [5]
4. Leaf blade crenate, dentate, or serrate at or below the middle and towards the apex [10]
5. Leaf blade margin crenate-serrulate above the middle (rarely entire), the midvein often evanescent near or just above the middle ... *I. glabra*
5. Leaf blade with the margin spinulose-serrate, denticulate, or entire, the midvein conspicuous above the middle, evanescent only at the apex [6]
6. Leaf blade upper side not lustrous, the underside with prominent, conspicuous secondary (and often reticulate) venation ... *I. amelanchier*
6. Leaf blade upper side lustrous, underside with obscure secondary venation [7]
7. Leaf blade with minute black punctations on the lower surface; fruit dark red to purple-black ... *I. coriacea*
7. Leaf blade without minute black punctations on the lower surface; fruit yellow to red [8]
8. Leaf blade tip usually acuminate, rounded at the base; inflorescence sessile ... *I. krugiana*
8. Leaf blade tip acute to obtuse, the base cuneate; inflorescence pedunculate [9]
9. Leaves more than 1 cm wide; branchlets short-pilose or occasionally glabrous; secondary branches at an angle of less than 45° from main branch ... *I. cassine* var. *cassine*
9. Leaves less than 1 cm wide; branchlets minutely strigose-puberulent; secondary branches at an angle greater than 45° from the main branch ... *I. cassine* var. *myrtifolia*
10. Leaf blade margin mostly crenate [11]
10. Leaf blade margin mostly dentate to serrate, or teeth mucronulate [13]
11. Leaves evergreen, coriaceous, with a subtruncate base; without spur branches ... *I. vomitoria*
11. Leaves deciduous, subcoriaceous, with a narrow cuneate base; often with spur branches [12]
12. Leaf blades 0.4-0.9 cm wide ... *I. decidua* var. *curtissii*
12. Leaf blades 1-2.5 cm wide ... *I. decidua* var. *decidua*
13. Pedicels 10-23 mm long; calyx lobes 4; pyrene with a hard, ribbed endocarp ... *I. longipes*
13. Pedicels 2-8 mm long; calyx lobes 5-8; pyrene with a soft, smooth or hard, ribbed endocarp [14]
14. Leaf blade margin mostly finely serrate; pyrene with a soft, smooth endocarp; of hydric to mesic-hydric areas ... *I. verticillata*
14. Leaf blade margin more coarsely serrate; pyrene with a hard, ribbed endocarp; of xeric to mesic-xeric areas [15]
15. Larger leaves 2-4(5) cm long ... *I. ambigua* var. *ambigua*

15. Larger leaves (5)6-10 cm long ... *I. ambigua* var. *monticola*

***Ilex ambigua*** Torr.— {AFP}

***Ilex amelanchier*** M.A.Curtis ex Chapm.— {AFP} State Threatened.

***Ilex cumulicola*** Small— {AFP} Endemic.

^ *Ilex xattenuata* Ashe— {AFP} First found in the wild, but much more common in cultivation now.

***Ilex cassine*** L.— {AFP}

***Ilex coriacea*** (Pursh)Chapm.— {AFP}

^ *Ilex cornuta* Lindl. & Paxton— {AFP}

***Ilex decidua*** Walter— {AFP}

***Ilex glabra*** (L.)A.Gray— {AFP}

***Ilex krugiana*** Loes.— {AFP} State Threatened.

^ *Ilex latifolia* Thunb.—

***Ilex longipes*** Chapm. ex Trel.— {AFP}

***Ilex myrtifolia***—{AFP} Interfertile with *I. cassine*.

***Ilex opaca*** Aiton— {AFP}

^ *Ilex paraguariensis* A.St.-Hil.— Historically cultivated; has been recently misapplied to *I. cassine*.

^ *Ilex rotunda* Thunb.—

***Ilex verticillata*** (L.)A.Gray— {AFP}

***Ilex vomitoria*** Aiton— {AFP}

## SOLANALES

### CONVOLVULACEAE {AFP}

1. Plant parasitic; stems yellowish to orange; leaves absent or reduced to scales ... *Cuscuta*

1. Plant photosynthetic; stems usually green distally; leaves with expanded blades present [2]

2. Stem prostrate, rooting at nodes; leaf blade base cordate and 7-20 mm wide or long; corolla subequal to shorter than the calyx, deeply 5-lobed, the sinuses >½ the corolla lobe length; fruit deeply 2-lobed ... *Dichondra*

2. Stem prostrate, twining, to erect, rarely rooting at nodes; leaf blade base cordate and usually >20 mm wide or long or leaf blade not cordate; corolla longer than the calyx, unlobed or to moderately 5-lobed, the sinuses <½ the corolla lobe length [3]

3. Flowers 5-7 mm long, numerous in elongate panicles ... *Poranopsis paniculata*

3. Flowers 5-80 mm long, solitary or in cymes [4]

4. Styles 2 per flower, free or fused only at the base; generally all trailing to procumbent and leaves small, to 40 mm wide [5]

4. Style 1 per flower; many species twining vines, some trailing or shrubs, and leaves small to large, to 250 mm wide [7]

5. Calyx 15-28 mm long; corolla 80 mm wide or long; fruit 12-20 mm wide or long ... *Bonamia grandiflora*)

5. Calyx 2-9(11) mm long; corolla 7-20(25) mm wide and long; fruit 2-9 mm wide or long [5]

6. Each style 2-cleft or 2-fid for ½ or more of its length; stigmas 4, linear to subclavate ... *Evolvulus*

6. Each style not split or scarcely so; stigmas 2, capitate or peltate ... *Stylisma*

7. Stigma or the lobes elongated (cylindric to linear) [8]

7. Stigma or the lobes capitate or globose [10]

- 8. Stems hairy, hairs usually branched, glandular, or stellate, sometimes simple ... Jacquemontia
- 8. Stems glabrous to hairy, hairs unbranched, eglandular, not stellate [9]
- 9. Sepals 12-34 mm long; stigma lobes linear to oblong, apices blunt; ovary 1-locular ...  
Calystegia
- 9. Sepals 3-5 mm long; stigma lobes cylindric to spatulate, apices acute; ovary 2-locular ...  
Convolvulus arvensis
- 10. Anthers twisted after dehiscence; pollen usually 3-9-colpate [11]
- 10. Anthers straight after dehiscence; pollen rugate or echinate [12]
- 11. Leaves unlobed, not compound (the blade basally cordate); inflorescence usually with 3-20  
flowers in an umbelliform cluster ... Camonea umbellata
- 11. Leaves compound or palmately lobed; inflorescence with 2-9 flowers in cymes or flower  
solitary ... Distimake
- 12. Sepals accrescent, completely enclosing undehisced fruit or nearly so; corolla 25-30 mm  
long ... Aniseia martinicensis
- 12. Sepals not accrescent, not completely enclosing fruit; corolla 20-80(15) mm long ...  
Ipomoea

### Aniseia {AFP}

\**Aniseia martinicensis* (Jacq.)Choisy— {AFP}

### Bonamia {AFP}

*Bonamia grandiflora* (A.Gray)Hallier f.— {AFP} Endemic. Federally Threatened. State  
Endangered.

### Calystegia {AFP}

- 1. Stems erect to trailing, occasionally sparsely twining, the flowers produced in the basal  
nodes ... *C. catesbeiana*
- 1. Stems strongly twining, the flowers produced in the distal nodes ... *C. sepium* subsp.  
*limnophila*

*Calystegia catesbeiana* Pursh— {AFP} State Endangered.

*Calystegia sepium* (L.)R.Br. subsp. *limnophila* (Greene)Brummitt— {AFP}

### Camonea {AFP}

\**Camonea umbellata* (L.)A.R.Simões & Staples— {AFP}

### Convolvulus {AFP}

\**Convolvulus arvensis* L.— {AFP}

### Cuscuta {AFP}

- 1. Styles united and appearing as one for most of their length [2]
- 1. Styles 2, distinct [3]
- 2. Calyx lobes entire; style <1 mm long ... *C. exaltata*
- 2. Calyx lobes minutely erose; style >1 mm long ... *C. japonica*
- 3. Corolla lobe with a flap-like subapical appendage ... *C. boldinghii*
- 3. Corolla lobe without a subapical appendage [4]
- 4. Corolla (and sometimes the calyx and pedicel) papillate; capsule with a thickened and raised  
stylopodium ... *C. indecora*



4. Corolla not papillate; capsule lacking an evident stylopodium [5]
5. Flower densely bracteate, bracts erose-fimbriate to roughened entire; usually parasitic on woody species ... *C. compacta*
5. Flowers with 0-2 entire bracts; parasitic on herbaceous or woody species [6]
6. Corolla lobes acute at the tip [7]
6. Corolla lobes obtuse to rounded at the tip [9]
7. Calyx lobe acute at the tip; corolla lobe narrowly deltate; capsule circumscissile dehiscent ... *C. umbellata*
7. Calyx lobe obtuse at the tip; corolla deltate; capsule indehiscent [8]
8. Flower 2.1-4.6(5) mm long; calyx rounded, enclosing the corolla tube, 1-2.1 mm long, lobes ovate-deltate, not auriculate; corolla tube 1.1-2.5 mm long; anthers 0.4-0.7 mm long; fruit 1.3-2.8 mm long, 1.9-3.9 mm wide ... *C. campestris*
8. Flower 1.4-2.1(2.5) mm long; calyx angled, loose around the corolla tube, 0.3-1.1 mm long, lobes broadly ovate-rhombic, auriculate; corolla tube 0.5-1.2 mm long; anthers 0.2-0.35 mm long; fruit 1.9-2.4 mm long, 1.2-2.5 mm wide ... *C. pentagona*
9. Calyx enclosing corolla tube; capsule circumscissile dehiscent; usually parasitic on woody species ... *C. americana*
9. Corolla tube exerted from calyx lobes; capsule indehiscent; parasitic on herbaceous or woody species [9]
10. Corolla lobes, when reflexed, not or barely meeting calyx lobe tips; capsule conic, longer than broad ... *C. gronovii*
10. Corolla lobes, when reflexed, conspicuously overlapping calyx lobe tips; capsule depressed globose, length and width subequal or broader than long ... *C. obtusiflora* var. *glandulosa*

***Cuscuta americana*** L.— {AFP}

++***Cuscuta boldinghii*** Urb.— {AFP} Disturbed areas. Perhaps a recent introduction.

***Cuscuta campestris***—Type from Virginia. Had been subsumed in *C. pentagona*. Its occurrence in Florida and relationship with *C. pentagona* rather unclear.

***Cuscuta compacta*** Juss. ex Choisy— {AFP}

***Cuscuta exaltata*** Engelm.— {AFP}

***Cuscuta gronovii*** Willd. ex Schult.— {AFP}

***Cuscuta indecora*** Choisy— {AFP}

\****Cuscuta japonica*** Choisy— {AFP}

***Cuscuta obtusiflora*** Kunth var. ***glandulosa*** Engelm.— {AFP}

***Cuscuta pentagona*** Engelm.— {AFP}

***Cuscuta umbellata*** Kunth— {AFP}

**Dichondra** {AFP}

***Dichondra repens*** J.R.Forst. & G.Forst.— {AFP} It has been proposed that *D. carolinensis* and *D. micrantha* should be considered synonyms of the earlier species name *D. repens* (Delgado 2019).

**Distimake** {AFP}

1. Leaves simple, entire to deeply palmately lobed, but not compound; corolla yellow or white with a purple throat [2]
1. Leaves palmately compound, the leaflets 5; corolla white [3]
2. Leaf lobes with the margin sinuate-dentate; corolla white with a purple throat, 3-4 cm long; fruit 1-3 cm long ... *D. dissectus*

2. Leaf lobes with the margin entire; corolla yellow, 5-6 cm long; fruit 3-6 cm long ... *D. tuberosus*

3. Leaf blade margin entire ... *D. aegyptius*

3. Leaf blade margin serrulate [4]

4. Stem and leaves with glandular trichomes ... *D. cissoides*

4. Stem and leaves glabrous to pilose, lacking glandular trichomes ... *D. quinquefolius*

\**Distimake aegyptius* (L.)A.R.Simões & Staples— {AFP}

\*\**Distimake cissoides* (Lam.)A.R.Simões & Staples— {AFP} At times claimed to be native, but nearly all habitat occurrences in exclusively disturbed areas argues it's likely an old introduction.

\**Distimake dissectus* (Jacq.) A.R.Simões & Staples— {AFP}

\**Distimake quinquefolius* (L.)A.R.Simões & Staples— {AFP}

\**Distimake tuberosus* (L.) A.R.Simões & Staples— {AFP}

### **Evolvulus** {AFP}

1. Peduncle and pedicel together 7-20 mm long, usually clearly exceeding the subtending leaf, the peduncle 5-18 mm long, longer than the pedicel [2]

1. Peduncle and pedicel together 1-6 mm long, usually subequal to shorter than the subtending leaf, the peduncle 0-3 mm long, subequal to shorter than the pedicel [3]

2. Lower surface of leaf blade pubescent to villous ... *E. alsinoides*

2. Lower surface of leaf blade glabrous ... *E. convolvuloides*

3. Leaves generally linear, 3-20 times longer than wide ... *E. sericeus*

3. Leaves mostly ovate, oblong, or elliptic, 1-3 times longer than wide [4]

4. Stems decumbent, ascending, to erect; larger leaves 8-40 mm long; corolla blue to purple, 12-18 mm wide ... *E. glomeratus* subsp. *grandiflorus*

4. Stems prostrate; larger leaves 3-8 mm long; corolla white, 5-9 mm wide ... *E. grisebachii*

*Evolvulus alsinoides* (L.)L.— {AFP}

*Evolvulus convolvuloides* (Willd. ex Schult.)Stearn— {AFP} State Endangered.

^ *Evolvulus glomeratus* Nees & Mart. subsp. *grandiflorus* (Parodi)Ooststr.— {AFP}

*Evolvulus grisebachii* Peter— {AFP} State Endangered.

*Evolvulus sericeus* Sw.— {AFP}

**Ipomoea** {AFP}: Within the genus *Ipomoea*, some species are known to be infected by an ascomycete related to *Periglandula*. The endophytic fungus produces ergot alkaloids which likely protect the seed, seedling, and mature plant from herbivory. It appears the fungal alkaloids can be transported by the plants to certain tissues (Amor-Prats & Harborne 1993; Beaulieu et al. 2013).

1. Stems densely white-tomentose and leaf blades pinnately veined; fruit indehiscent ... *I. nervosa*

1. Stems glabrous to pubescent, or if densely tomentose then leaf blades palmate-pinnately veined; fruit dehiscent or circumscissile [2]

2. Leaves pinnately divided into linear segments ... *I. quamoclit*

2. Leaves entire or with broad lobes, or palmately dissected [3]

3. Leaves palmately dissected, appearing palmately compound [4]

3. Leaves entire or with broad lobes, the sinuses not reaching the petiole (nearly reaching the petiole sometimes in *I. batatas* or *I. imperati*) [5]
4. Leaves of axillary buds developed and stipulelike ... *I. cairica*
4. Leaves of axillary buds not developed ... *I. wrightii*
5. Leaf blade distally oblong to broadly rounded, the apex truncate, emarginate, to broadly obtuse [6]
5. Leaf blade distally broadly to narrowly deltoid and gradually narrowed to an acute, acuminate, or mucronulate tip [8]
6. Leaves chartaceous ... *I. asarifolia*
6. Leaves somewhat fleshy, semi-succulent [7]
7. Leaf blade not lobed, with conspicuous reticulate venation between the secondary veins; corolla pinkish to lavender throughout, darker in the throat ... *I. pescaprae* subsp. *brasiliensis*
7. Leaf blade sometimes lobed, with inconspicuous or faint reticulate venation between the secondary veins; corolla white with yellow to purple throat ... *I. imperati*
8. Plant an erect shrub, the flowering portions of the stem mostly > 4 mm in width; leaves lanceolate ... *I. carnea* subsp. *fistulosa*
8. Plant herbaceous, repent, clambering, or twining, the flowering portions of the stem mostly < 4 mm wide, if thicker, then leaves not lanceolate [9]
9. Leaf blade tomentose abaxially ... *I. macrorhiza*
9. Leaf blade glabrous to pilose abaxially [10]
10. Plant with filiform prickles ... *I. setosa*
10. Plant without prickles or prickles not filiform [11]
11. Calyx lobe body obtuse with a subapical filiform prolonged tip; corolla red, rarely white ... *I. hederifolia*
11. Calyx lobe tip terminal, not subapical; corolla white, light blue, or purple [12]
12. Calyx lobe tip linear to filiform, typically subequal to the body in length [13]
12. Calyx lobe tip obtuse, acute, to acuminate, less than half the length of the body [14]
13. Plant glabrate; corolla white ... *I. alba*
13. Plant densely pilose; corolla light blue, the throat white to pale yellow ... *I. hederacea*
14. Leaf blade lanceolate, the base broadly to shallowly acute or rounded-truncate to truncate-acute; corolla red (rarely white) ... *I. microdactyla*
14. Leaf blade not lanceolate, the base cordate to sagittate, or truncate; corolla white to purple [15]
15. Plant repent or stems floating [16]
15. Plant twining, stems sinuous [18]
16. Sepals with bristle-like tips ... *I. batatas*
16. Sepals without bristle-like tips [17]
17. Leaf blade apex deltoid, with an acute to acuminate tip ... *I. aquatica*
17. Leaf blade apex rounded, acute to obtuse with a mucro ... *I. asarifolia*
18. Midvein region green or darker, strongly contrasting with margin of sepal [19]
18. Midvein region not pronouncedly darker or scarcely darker than margin of sepal [20]
19. Stem without prickles; sepal tip obtuse to acute; fruit circumscissile at base, with 1-2 seeds ... *I. corymbosa*
19. Stem sometimes with deltate prickles; sepal tip caudate-acuminate; fruit not circumscissile, with 1-4 seeds ... *I. muricata*
20. Sepal tips rounded, obtuse, sometimes mucronate [21]
20. Sepal tips acute to acuminate [23]
21. Leaf blades sagittate; corolla purple to lavender ... *I. sagittata*
21. Leaf blades cordate; corolla white or white with a purple throat [22]

22. Corolla with a purple throat; sepals 12-15 mm long ... *I. pandurata*  
 22. Corolla without a purple throat; sepals 15-25 mm long ... *I. violacea*  
 23. Plant usually with some leaves sagittate ... *I. tenuissima*  
 23. Plant mostly without sagittate leaves [24]  
 24. Pedicel without papillae or subtly papillate; corolla (3.5)4-8 cm long [25]  
 24. Pedicel often subtly papillate; corolla 0.5-5 cm long [27]  
 25. Stems sometimes fleshy (i.e. sweet potato), sometimes rooting; sepals with bristle-like tips ... *I. batatas*  
 25. Stems not fleshy, not rooting; sepals merely acute to acuminate at the tip [26]  
 26. Pedicel shorter than the calyx ... *I. indica*  
 26. Pedicel subequal to longer than the calyx ... *I. purpurea*  
 27. Corolla 0.5-2.5 cm long; sepals glabrous; pedicel usually to 6 mm long (rarely to 11 mm) ... *I. leucantha*  
 27. Corolla 1.5-5 cm long; sepals ciliate-margined; pedicels 5-14 mm long [28]  
 28. Longest sepals 5-8 mm long, oblong to narrowly elliptic-oblong; corolla 1.8-2 cm long; largest dimension (length or width) of fruit 5-6 mm ... *I. triloba*  
 28. Longest sepals 8-14 mm long, glabrous or ciliate-margined; corolla 0.5-4 cm long; largest dimension (length or width) of fruit 7-13 mm long [29]  
 29. Corolla pinkish to lavender (rarely white), 2.5-5 cm long; sepals ovate-lanceolate to lanceolate-acuminate, 8-14 mm long; largest dimension (length or width) of fruit 7--10 mm; pedicels 6 mm or more long ... *I. cordatotriloba*  
 29. Corolla white to pale pink, 1.5-3 cm long; sepals lanceolate, 10-15 mm long; corolla; largest dimension (length or width) of fruit 10-13 mm; pedicel to 7 mm long ... *I. lacunosa*

***Ipomoea alba*** L.— {AFP}

\****Ipomoea aquatica*** Forssk.— {AFP}

\****Ipomoea asarifolia*** (Desr.)Roem. & Schult.— {AFP}

\****Ipomoea batatas*** (L.)Lam.— {AFP}

\****Ipomoea cairica*** (L.)Sweet— {AFP}

^ *Ipomoea carnea* Jacq. subsp. *fistulosa* (Mart. ex Choisy)D.F.Austin— {AFP}

***Ipomoea cordatotriloba*** Dennst.— {AFP}

\****Ipomoea corymbosa*** (L.)Roth ex Roem. & Schult.— {AFP}

\****Ipomoea hederacea*** Jacq.— {AFP}

***Ipomoea hederifolia*** L.— {AFP}

***Ipomoea imperati*** (Vahl)Griseb.— {AFP}

***Ipomoea indica*** (Burm.)Merr.— {AFP}

***Ipomoea lacunosa*** L.— {AFP}

***Ipomoea leucantha*** Jacq.— {AFP}

***Ipomoea macrorhiza*** Michx.— {AFP}

***Ipomoea microdactyla*** Griseb.— {AFP} State Endangered.

\****Ipomoea muricata*** (L.)Jacq.— {AFP}

\****Ipomoea nervosa*** (Burm.f.)J.R.I.Wood & Scotland— {AFP}

***Ipomoea pandurata*** (L.)G.Mey.— {AFP}

***Ipomoea pes-caprae*** (L.)R.Br. subsp. ***brasiliensis*** (L.)Ooststr.— {AFP} St. John (1970) treated this taxon at the species rank and characterized it as pantropical (absent from northern Indian Ocean) with leaf blades mostly longer than wide, unlobed or with lobe sinus less than 1/5 the length of the blade, lobes ascending, outer sepals 5-13 mm long, and cymes 1-20 flowered. *Ipomoea pes-caprae* subsp. *pes-caprae* is restricted to the northern Indian Ocean and has leaf blades wider than long, the lobe sinus 1/3-1/5 of the length of the blade, lobes

divergent, outer sepals 7-12 mm long, and cymes 1-2 flowered. The two taxa apparently do not hybridize, or perhaps only rarely, based on analysis of seven DNA loci (Miryeganeh et al. 2014). Others treat *I. brasiliensis* as a synonym of *I. pes-caprae* and state "some intermediates occur and the issue is not yet fully resolved" (Wood et al. 2020).

\**Ipomoea purpurea* (L.)Roth— {AFP}

\**Ipomoea quamoclit* L.— {AFP}

*Ipomoea sagittata* Poir.— {AFP}

\**Ipomoea setosa* Ker Gawl.— {AFP}

*Ipomoea tenuissima* Choisy— {AFP} State Endangered.

\**Ipomoea tiliifolia* (Desr.)Roem. & Schult.— {AFP}

\**Ipomoea triloba* L.— {AFP}

*Ipomoea violacea* L.— {AFP}

\**Ipomoea wrightii* A.Gray— {AFP}

### Jacquemontia {AFP}

1. Inflorescence subtended by foliaceous bracts, 1-2.5 cm long; sepals 8-15 mm long, densely long-hirsute ... *J. tamnifolia*

1. Inflorescence subtended by reduced bracts, 0.1-0.8 cm long; sepals 2-5 mm long, glabrous, pubescent, or ciliolate [2]

2. Inflorescence 0.4-0.8 cm long ... *J. verticillata*

2. Inflorescence 1-10 cm long [3]

3. Inflorescence a densely flowered corymbose cyme, the pedicels nearly inconspicuous, the peduncle 1-10 cm long; corolla blue to pinkish ... *J. pentanthos*

3. Inflorescence a sparsely flowered cyme, the pedicels clearly evident, the peduncle 0.5-2.5 cm long; corolla white [4]

4. Outer sepals acute or mucronate ... *J. havanensis*

4. Outer sepals rounded to obtuse [5]

5. Lower surface of outer sepals glabrous; of calcareous pinelands ... *J. curtissii*

5. Lower surface of outer sepals ciliolate or pubescent; of coastal dunes ... *J. reclinata*

*Jacquemontia curtissii* Peter ex Hallier f.— {AFP} Endemic. State Threatened.

*Jacquemontia havanensis* (Jacq.)Urb.— {AFP} State Endangered.

*Jacquemontia pentanthos* (Jacq.)G.Don— {AFP} State Endangered.

*Jacquemontia reclinata* House ex Small— {AFP} Endemic. Federally Endangered. State Endangered.

*Jacquemontia tamnifolia* (L.)Griseb.— {AFP}

\**Jacquemontia verticillata* (L.)Urb.— {AFP} Hillsborough Co. (waif).

### Poranopsis {AFP}

\**Poranopsis paniculata* (Roxb.)Roberty— {AFP}

### Stylisma {AFP}

1. Stems <31 cm long, often ¼ or more of the length of scaly buried stems; longest leaves <15(20) mm long, <2.6 mm wide; corolla 1-2 times long as the sepals ... *S. abdita*

1. Stems >40 cm long, usually leafy throughout or <½ the length of scaly buried stems; longest leaves >14 mm long, >1.9 mm wide; corolla >2 times long as the sepals [2]

2. Sepals glabrous to pubescent [3]

2. Sepals moderately to densely villous [4]

- 3. Cotyledonar petioles fused; leaves 0.2-0.5 cm wide, 6-22 times longer than wide; bracteoles alternate or unequal; inflorescence of 1(-5) flowers ... *S. patens* var. *angustifolia*
- 3. Cotyledonary petioles free; leaves 1-3 cm wide, 1.5-4 times longer than wide; bracteoles subopposite and equal; inflorescence of (1)3-7(12) flowers ... *S. humistrata*
- 4. Petioles 1-3 mm long; corolla 1-1.5 cm long, pink, maroon, lavender, or red; filaments glabrous or rarely with scattered hairs near base; styler base with short hairs ... *S. aquatica*
- 4. Petioles 0-10 mm long; sepals 6-9 mm long, 3-4 mm wide; corolla 1.4-2.5 cm long, white; filaments villous towards base; styler base with short to long hairs [5]
- 5. Cotyledonar petioles fused; petioles 0-4(6) mm long; leaves 3-7 times longer than wide, 0.3-1.2 cm wide; inflorescence of 1(-5) flowers; bracteoles alternate or unequal ... *S. patens* var. *patens*
- 5. Cotyledonary petioles free; petioles 3-10 mm long; leaves 1.5-3.5 times longer than wide, (0.6)1-2 cm wide; inflorescence of 1-5 flowers; bracteoles subopposite and equal ... *S. villosa*

***Stylisma abdita*** Myint— {AFP} Endemic. State Endangered.

***Stylisma angustifolia*** Nash— {AFP}

***Stylisma aquatica*** (Walter)Raf.— {AFP}

***Stylisma humistrata*** (Walter)Chapm.— {AFP}

***Stylisma patens*** (Desr.)Myint— {AFP}

***Stylisma villosa*** (Nash)House— {AFP}

## HYDROLEACEAE {AFP}

### Hydrolea {AFP}

- 1. Flowers in axillary fascicles or cymes; ovary and fruit glabrous ... *H. quadrivalvis*
- 1. Flowers in terminal corymbs or leafy panicles; ovary and fruit glabrous to glandular-pubescent [2]
- 2. Stems and often leaves usually densely glandular-pubescent, sometimes glabrous; sepals 6-14 mm long ... *H. capsularis*
- 2. Stems and leaves pubescent, with few to no glandular hairs; sepals 4.5-9 mm long [3]
- 3. Stems without axillary thorns or rarely with 1 at a node; leaf blades lanceolate, 0.3-1 cm wide; style 5-10 mm long ... *H. corymbosa*
- 3. Stems with or without axillary thorns; leaf blades ovate, 1-2.5 cm wide; style 10-15 mm long ... *H. ovata*

\****Hydrolea capsularis*** (L.)Druce— {AFP} Although the name *H. spinosa* is widely used, the basionym of *Hydrolea capsularis* was published in 1756 and has priority over *H. spinosa*.

***Hydrolea corymbosa*** J.Macbr. ex Elliott— {AFP}

***Hydrolea ovata*** Nutt. ex Choisy— {AFP}

***Hydrolea quadrivalvis*** Walter— {AFP}

## SOLANACEAE {AFP}

- 1. Fruits berries, sometimes hardened ... Key A
- 1. Fruits capsules ... Key B

Key: Fruits berries

1. Corolla >15 cm long ... Solandra

1. Corolla <16 cm long [2]

2. Inflorescence of of panicles or cymose, subumbellate, to umbellate clusters [3]

- 2. Inflorescence of solitary flowers or in fascicles of 2-8 [4]
- 3. Inflorescence of panicles; corolla tubular ... *Cestrum*
- 3. Inflorescence of cymose, subumbellate, to umbellate clusters; corolla rotate, campanulate, to stellate ... *Solanum*
- 4. Shrubs; leaves linear-spatulate to linear-oblongate, succulent ... *Lycium carolinianum*
- 4. Herbs or shrubs; leaves chartaceous, not linear [5]
- 5. Calyx not enclosing the fruit [6]
- 5. Calyx accrescent and more than double in size in fruit, partly to completely enclosing the fruit, the major ribs of the fruit formed from the sepal lobe midribs and sometimes with a distinct rib forming between the sepal lobes [7]
- 6. Erect herb or shrub; flower and fruit 1-8 at a node; corolla rotate to campanulate ... *Capsicum*
- 6. Sprawling, scandent, or vine-like herb; flower and fruit solitary at the node; corolla urceolate ... *Salpichroa organifolia*
- 7. Calyx lobes with sagittate to cordate base, the lobes accrescent and surrounding the fruit ... *Nicandra*
- 7. Calyx lobes lacking lobed bases, the calyx tube accrescent and surrounding the fruit [8]
- 8. Plants tap-rooted perennials, 60-75(100) cm tall; flowers and fruits in fascicles of 2-6; fruiting calyx not inflated ... *Calliphysalis*
- 8. Plants tap-rooted annuals or rhizomatous perennials, 5-200 cm tall; flowers and fruits solitary; fruiting calyx inflated ... *Physalis*

#### Key B: Fruits capsules

- 1. Shrub or small tree; leaf blade to 40 cm long; corolla >15 cm long ... *Brugmansia*
- 1. Herbs or shrubs; leaf blade to 22 cm long; corolla <16 cm long [2]
- 2. Leaves 2-6(10) mm long ... *Calibrachoa parviflora*
- 2. Leaves 1-22 cm long [3]
- 3. Corollas with 5 long-acuminate lobes; fruits sometimes with prickles or tubercles ... *Datura*
- 3. Corolla lobes not long-acuminate; fruits without prickles or tubercles [4]
- 4. Leaf blade margins toothed or lobed; fruit circumscissile fruit ... *Hyoscyamus albus*
- 4. Leaf blade margins generally entire; fruit with 2-4 valves [5]
- 5. Corolla bilaterally symmetric; stamens 4, sometimes 5; calyx enclosing fruit ... *Browallia americana*
- 5. Corolla bilaterally or radially symmetric; stamens 5 [6]
- 6. Flowers and fruits in cymose, pseudoracemose, or pseudoglomerulate clusters; calyx lobes deltate or triangular ... *Nicotiana*
- 6. Flowers and fruits solitary; calyx lobes linear ... *Petunia*

#### **Browallia** {AFP}

\**Browallia americana* L.— {AFP}

**Brugmansia** {AFP} A key to all known species is provided since several are in cultivation, including numerous hybrids.

- 1. Flowers not noticeably scented; corolla tubular, abruptly expanded into the limb, the limb spreading to tightly recurved; seeds reniform, not or only slightly corky [2]
- 1. Flowers scented (nocturnally); corolla funnelform, gradually expanded into the limb, the limb spreading; seeds angular to flattened, corky or not [3]

- 2. Flowers mostly all pendent; calyx usually with 2 or more slits, the tube inflated; fruit smooth, calyx often persistent ... *B. sanguinea*
- 2. Flowers subhorizontal, descending, or some pendent; calyx usually with 1 slit, the tube mostly nearly appressed; fruit rugose, calyx usually deciduous ... *B. vulcanicola*
- 3. Flower 12-17 cm long; style hairy ... *B. arborea*
- 3. Flower 15-50 cm long; style glabrous [4]
- 4. Flower pendent; calyx long acuminate and slit on one side ... *B. versicolor*
- 4. Flowers subhorizontal, descending, or some pendent; calyx bluntly acute, with 1 or more slits [5]
- 5. Flower 15-25 cm long, the calyx nearly completely enclosing the unflared portion of the corolla tube; corolla lobe tips long-acuminate to caudate-acuminate ... *B. aurea*
- 5. Flower 25-40 cm long, the calyx much shorter than the unflared portion of the corolla tube; corolla lobe tips various [6]
- 6. Corolla lobe tips caudate-acuminate ... *B. insignis*
- 6. Corolla lobe tips acute to short-acuminate ... *B. suaveolens*

^ *Brugmansia arborea* (L.) Lagerh.—

^ *Brugmansia insignis* (Barb.Rodr.) Lockwood ex R.E.Schult.—

^ *Brugmansia suaveolens* (Humb. & Bonpl. ex Willd.) Bercht. & J.Presl— {AFP}

## Brunfelsia

^ *Brunfelsia pauciflora* (Cham. & Schltl.) Benth.—

## Calibrachoa {AFP}

\* *Calibrachoa parviflora* (Juss.) D'Arcy— {AFP}

## Calliphysalis {AFP}

*Calliphysalis carpenteri* (Riddell) Whitson— {AFP} State Endangered.

## Capsicum {AFP}

1. Flower solitary at the node (very rarely 2) after the first flowering node; corollas white, bluish white, to rarely violet, not as waxy ... *C. annuum* var. *glabriusculum*

1. Flowers 2-6 at the node after the first flowering node (very rarely 1); corollas greenish white, waxy ... *C. frutescens*

*Capsicum annuum* L. var. *glabriusculum* (Dunal) Heiser & Pickersgill— {AFP}

^ *Capsicum chinense* Jacq.—

*Capsicum frutescens* L.— {AFP}

## Cestrum {AFP}

1. Calyx lobes mostly rounded to obtuse; corolla white to greenish white, lobes reflexed; fruit purplish black ... *C. diurnum*

1. Calyx lobes mostly acute; corolla greenish white, white, yellowish, or orange, the lobes erect to spreading; fruit purplish black or white [2]

2. Corolla white to greenish white; fruit white ... *C. nocturnum*

2. Corolla yellowish to orange; fruit purplish black ... *C. parqui*

\* *Cestrum diurnum* L.— {AFP}



\****Cestrum nocturnum*** L.— {AFP}

^ ***Cestrum parqui*** L'Her.— {AFP}

**Datura** {AFP} Two species included in the key (*D. ferox* and *D. quercifolia*) might be expected.

1. Leaf blade margins sinuate-dentate to pinnately lobed; corolla 4-11 cm long, with 5 long-acuminate lobe tips alternating with shallow sinuses or notches or a nearly entire margin between; capsules erect, prickly, dehiscent by 4 valves [2]

1. Leaf blade margins entire to irregularly sinuate-dentate; corolla 10-26 cm long, with 10 short-acuminate to acute lobe tips (equal or unequal); capsules pendent (curved pedicel), prickly or tuberculate, irregularly dehiscent [4]

2. Leaf blade elliptic to narrowly ovate, usually pinnately lobed, sometimes sinuate-dentata; capsule prickles ca. 5-25 on each of the 4 valves, 1.5-7 mm wide at base, some 10-30 mm long ... *D. quercifolia*

2. Leaf blade broadly ovate, usually sinuate-dentate, sometimes pinnately lobed; capsules various [3]

3. Corolla 4-6 cm long; capsule prickles ca. 5-25 on each of the 4 valves, 1.5-7 mm wide at base, some (10)15-30 mm long ... *D. ferox*

3. Corolla (5)6-11 cm long; capsule prickles ca. 30-70 on each of the 4 valves, mostly 0.5-3 mm wide at base, <10(15) mm long ... *D. stramonium*

4. Stems glabrescent, sparsely hairy; corolla white, yellow, or purple, sometimes with a 2nd or 3rd corolla; capsules tuberculate, tubercles mostly blunt (few sharp like a prickle), 1-4 mm wide and long ... *D. metel*

4. Stems usually villous-pubescent or canescent, sometimes glabrate; corolla white, sometimes lavender or purple-tinged, singular; capsules prickly, the prickles acicular, 3-10 mm long, 1-3 mm wide at base [5]

5. Leaf blade lower surface and calyx villous; corolla limb lobules subequal to acuminate lobes ... *D. inoxia*

5. Leaf blade lower surface and calyx canescent; corolla limb lobules shorter than acuminate lobes ... *D. wrightii*

\****Datura inoxia*** Mill.— {AFP}

\****Datura metel*** L.— {AFP}

***Datura stramonium*** L.— {AFP}

\****Datura wrightii*** Regel— {AFP}

**Hyoscyamus** {AFP}

\****Hyoscyamus albus*** L.— {AFP}

**Lycium** {AFP}

***Lycium carolinianum*** Walter— {AFP}

**Nicandra** {AFP}

\****Nicandra physalodes*** (L.)Gaertn.— {AFP}

**Nicotiana** {AFP}

1. Shrub or tree; leaf blades glabrous ... *N. glauca*

1. Annual or short-lived perennial; leaf blades viscid-pubescent or hispid [2]

- 2. Cauline leaves petiolate; corolla yellow to greenish yellow ... *N. rustica*
- 2. Cauline leaves sessile or subsessile; corolla white, grayish, greenish-gray tinged, greenish white, pink, or red [3]
- 3. Cauline leaves large, scarcely reduced below inflorescence; inflorescence compact; corolla pale greenish white to pink or red, throat ~5 mm wide; stamens inserted below middle of tube; stems viscid-pubescent ... *N. tabacum*
- 3. Cauline leaves reduced towards inflorescence, rosette leaves sometimes present; inflorescence rather elongate; corolla white, grayish, or greenish-gray tinged, throat 1-6 mm wide; stamens inserted just below mouth of tube; stems tuberculate, sparsely pubescent or hispid, usually not viscid [4]
- 4. Calyx 1.5-2.5 cm long; corolla 4-12 cm long; fruit 1.1-1.6 cm long ... *N. longiflora*
- 4. Calyx 0.8-1.3 cm long; corolla 1.5-3.5 cm long; fruit 0.8-1.1 cm long ... *N. plumbaginifolia*

^ *Nicotiana glauca* Graham— {AFP}

^ *Nicotiana longiflora* Cav.— {AFP}

\* ***Nicotiana plumbaginifolia*** Viv.— {AFP}

^ *Nicotiana rustica* L.—

^ *Nicotiana tabacum* L.— {AFP}

### Petunia {AFP}

- 1. Corolla white, tube long and slender (abruptly expanded into limb, measuring 2.8-5.2 cm long, limb 2.5-5.5 cm wide); anthers and pollen yellow ... *P. axillaris*
- 1. Corolla white, pink, purple, to red, tube funnellform (more gradually expanded into limb); anthers and pollen blue, violet, or yellow [2]
- 2. Corolla rose-purple (drying deep violet), tube 1-3 cm long, limb 1-4 cm wide; anthers and pollen blue to violet ... *P. integrifolia*
- 2. Corolla white, pink, purple, to red, tube 1.1-5.5 cm long, limb 1.3-7 cm wide; anthers and pollen blue, violet, or yellow ... *P. ×atkinsiana*

^ *Petunia axillaris* (Lam.) Britton et al.—

^ *Petunia ×atkinsiana* (Sweet) D. Don ex W. H. Baxter— {AFP}

^ *Petunia integrifolia* (Hook.) Schinz & Thell.—

### Physalis {AFP}

- 1. Pubescence of stellate or dendritic hairs, especially on leaf margins and the calyx [2]
- 1. Pubescence of simple hairs only or glabrous [4]
- 2. Petiole 0.2-1 times as long as the leaf blade; leaf blades broadly elliptic to ovate, 1.5-4(7.5) cm wide ... *P. walteri*
- 2. Petiole absent or to 0.1 times as long as the leaf blade; leaf blades linear-lanceolate to narrowly spatulate, 0.2-1.5(2) cm wide [3]
- 3. Plant pubescent only on leaf margins and calyx; petiole absent; leaf blades linear-lanceolate, 0.2-0.8(1) cm wide; western to east-central panhandle ... *P. angustifolia*
- 3. Plant pubescent only on leaf margins and calyx or throughout; petiole absent or to 0.1 times as long as the leaf blade; leaf blades linear-lanceolate to spatulate, 0.2-1.5(2) cm wide; eastern panhandle, gulf coast, southern counties ... *P. elliotii*
- 4. Annuals with taproots; anthers 1-3 mm, pale yellow and blue-tinged to blue; long fruiting calyx 5- or 10-angled or ribbed [5]

4. Perennials with rhizomes (these sometimes deeply buried and rarely seen); anthers 2-4.5 mm long, yellow or sometimes blue-tinged; fruiting calyx 10-angled or ribbed [7]
5. Plants glabrous to sparsely pubescent, eglandular; petiole 0.3-0.7 times as long as blade; corolla lacking dark spots or only tinged purple; fruiting calyx 10-ribbed ... *P. angulata*
5. Plants glabrous to villous, eglandular or glandular; petiole 0.2-1 times as long as blade; corolla with 5 dark purple-black spots or smudges; fruiting calyx 5-angled [6]
6. Plants glabrous to sparsely pubescent, eglandular; leaf blade margins with >9 teeth per side; fruiting pedicel (10)15-35 mm ... *P. cordata*
6. Plants glabrous to densely pubescent, eglandular or glandular; leaf blade margins with <10 teeth per side; fruiting pedicel 5-15 mm long ... *P. pubescens*
7. Hairs divergent and retrorse, to 1.5 mm long ... *P. virginiana*
7. Hairs divergent or antrorse, to 2 mm long [8]
8. Plants eglandular, glabrous to sparsely strigose, hairs to 0.5 mm long; leaf blades ovate, elliptic, lanceolate, to oblanceolate ... *P. longifolia*
8. Plants eglandular or glandular, glabrous to densely pubescent, hairs to 2 mm long; leaf blades ovate-lanceolate, ovate, to orbicular [9]
9. Rhizomes slender, shallow; leaf blades 1.5-6(6.5) cm long, 1-5 cm wide ... *P. arenicola*
9. Rhizomes stout, deeply buried (rarely seen); leaf blades (2)4-11(13) cm long, 3-9(10) cm wide ... *P. heterophylla*

***Physalis angulata*** L.— {AFP}

***Physalis angustifolia*** Nutt.— {AFP}

***Physalis arenicola*** Kearney var. ***arenicola***— {AFP}

***Physalis arenicola*** Kearney var. ***ciliata*** (Rydb.)Waterf.— {AFP}

***Physalis cordata*** Mill.— {AFP}

***Physalis elliotii*** Kunze—

***Physalis heterophylla*** Nees— {AFP}

***Physalis longifolia*** Nutt.— {AFP}

^ *Physalis peruviana* L.—

***Physalis pubescens*** L.— {AFP}

***Physalis virginiana*** Mill.— {AFP}

***Physalis walteri*** Nutt.— {AFP}

**Salpichroa** {AFP}

\****Salpichroa organifolia*** (Lam.)Thell.— {AFP}

**Solandra**

^ *Solandra maxima* (Sessé & Moc.)P.S. Green —

**Solanum** {AFP}

1. Leaf blade pinnately lobed throughout (sinuses at least ½ or more to midrib) or leaf compound ... Key A

1. Leaf blade entire to shallowly lobed (sinus <½ way to midrib, rarely few basal lobes deeply lobed), or lobes few at the leaf base only [2]

2. Mature plant with stiff prickles on stems or leaves (includes *S. elaeagnifolium*, *S. torvum*, which occasionally may appear to lack prickles) ... Key B

2. Mature plant without prickles on stems or leaves, or these few, rare, and weak (includes *S. americanum* s.lat., *S. bahamense*, *S. donianum*, *S. melongena*, all of which rarely have prickles in Florida) ... Key C

Key A: Leaves compound or pinnately lobed

1. Plant with stiff prickles on stems or leaves [2]
1. Plant without prickles on stems or leaves [4]
2. Stem with only stellate hairs [3]
2. Stem with mostly simple, usually glandular hairs, sometimes a few stellate hairs [4]
3. Stellate hairs mostly with 4 lateral arms; corolla white to pale blue or violet, actinomorphic; anthers subequal; fruit yellow, greenish, or mottled, calyx slightly accrescent and only sparsely prickly at most; seeds yellow ... *S. carolinense* var. *floridanum*
3. Stellate hairs mostly with 6-10 lateral arms; corolla yellow, zygomorphic; anthers strongly unequal; fruit brown, accrescent calyx tightly adhering and densely prickly; seeds dark brown ... *S. rostratum*
4. Corolla violet or blue, zygomorphic; anthers strongly unequal; fruit brown, dry, accrescent calyx tightly covering with dense radiating prickles; seeds black to dark brown ... *S. citrullifolium*
4. Corolla white to pale blue, actinomorphic; anthers subequal; fruit red, fleshy, accrescent calyx loosely covering with spacious prickles; seeds yellowish ... *S. sisymbriifolium*
5. Woody vine, glabrate; inflorescence branched ... *S. seaforthianum*
5. Erect or lax herb, moderately to densely pubescent; inflorescence unbranched or rarely forked [6]
6. Forming underground tubers; leaflets entire; anthers opening by terminal pores; corolla white, pink, to pale blue; fruit yellow; seed glabrous; potato ... *S. tuberosum*
6. Without tubers; leaflets toothed, at least some; corolla yellow; anthers opening by longitudinal slits; fruit yellow, red, to dark purple; seed pubescent; tomato [7]
7. Leaflet margins deeply lobed along whole margin; foliage when crushed without citrus odour; fruit >2 cm wide, usually; corolla shallowly stellate, the lobes divided 1/3 to 1/2 way to base; stems robust with occasional long trichomes up to 3 mm long ... *S. lycopersicum*
7. Leaflet margins shallowly lobed mainly towards the base; foliage when crushed with citrus odour; fruit <2 cm wide; corolla deeply stellate, the lobes divided almost to the base; stems slender with occasional long trichomes up to 2.2 mm long ... *S. pimpinellifolium*

Key B: Prickles present; leaf blades mostly unlobed or with few lobes

1. Stem and upper leaf blade surface of simple hairs or glabrous (lower blade surface with stellate hairs in *S. viarum*) [2]
1. Stem and upper leaf blade surface with stellate hairs [3]
2. Pubescence eglandular or plant glabrate; fruit orange to red; seed winged ... *S. capsicoides*
2. Pubescence glandular and eglandular; fruit yellow or mottled green; seed unwinged ... *S. viarum*
3. Stems glabrate to sparsely stellate-pubescent ... *S. tampicense*
3. Stems moderately to densely stellate-pubescent [4]
4. Leaves sessile (rarely petiole to 1 cm) ... *S. jamaicense*
4. Leaves petiolate, longer petioles 1-10 cm long [4]
5. Pubescence silvery- or bright white-canescens, especially on leaf blade lower surface ... *S. elaeagnifolium*
5. Pubescence not silvery or bright-white canescens [6]
6. Leaves to 35 cm wide; fruit hirsute, the trichomes 2-5 mm long ... *S. candidum*
6. Leaves to 18(20) cm wide; fruit glabrous or sparsely pubescent, trichomes 0.3-1 mm long [7]

- 7. Shrub or small tree 1-4 m tall; inflorescence with simple, glandular hairs ... *S. torvum*
- 7. Herb to 1.2 m tall; inflorescence with stellate hairs [8]
- 8. Leaf blade lower surface with stellate trichomes with mostly 4 lateral arms; calyx 5-7 mm long; corolla 2-3 cm wide ... *S. carolinense* var. *carolinense*
- 8. Leaf blade lower surface with stellate trichomes with mostly 6-8 lateral arms; calyx 8-12 mm long; corolla 3-4 cm wide ... *S. dimidiatum*

Key C: Prickles absent, or few and weak; leaf blades mostly unlobed or with few lobes

- 1. Sprawling, scrambling, or climbing vine; often some leaves with 1-3 basal lobes ... *S. dulcamara*
- 1. Herb or shrub; leaves without basal lobes [2]
- 2. Plant with stellate trichomes, sometimes few or sparse [3]
- 2. Plant glabrous or with simple trichomes [9]
- 3. Herb; fruit 15-50 cm long; eggplant ... *S. melongena*
- 3. Shrub or small tree; fruit to 3 cm long or wide [4]
- 4. Ovary and fruit pubescent [5]
- 4. Ovary and fruit glabrous or glabrate [7]
- 5. Young stem often with highly reduced, stipule-like leaves; corolla purple ... *S. mauritianum*
- 5. Young stem without stipule-like leaves; corolla white [6]
- 6. Leaf blade mostly ovate to ovate-elliptic, acute to rounded-truncate at the base; calyx and corolla densely stellate with short-armed trichomes ... *S. erianthum*
- 6. Leaf blade mostly narrowly lanceolate to lanceolate-elliptic, tapering at the base; calyx and corolla shaggy with long-armed trichomes ... *S. umbellatum*
- 7. Inflorescence axillary, of 1-3 flowers; fruit 12-18 mm long or wide ... *S. pseudocapsicum*
- 7. Inflorescence terminal, of (3)5-20(30) flowers; fruit 3-8 mm long or wide [8]
- 8. Not rhizomatous; leaf blades coriaceous, often lustrous, elliptic to elliptic-lanceolate; corolla white to violet, the lobes linear-lanceolate; anther adaxial surface with stellate hairs ... *S. bahamense*
- 8. Rhizomatous; leaf blades chartaceous, dull, broadly elliptic to ovate-lanceolate; corolla white, the lobes lanceolate; anther adaxial surface without stellate hairs ... *S. donianum*
- 9. Young stems densely villous, sometimes glandular ... *S. villosum*
- 9. Young stems glabrous, appressed-pubescent, to pilosulous (sometimes glandular in *S. nigrum*) [10]
- 10. Shrub or small tree, 1-3 m tall; fruit yellow, orange, or red [11]
- 10. Herbs; fruit green, white, purple, to purplish black [12]
- 11. Stem often with a reduced leaf in the axil of a larger leaf; leaf blade mostly broadly elliptic to ovate, not glaucous ... *S. diphyllum*
- 11. Stem lacking reduced leaves in the axils; leaf blade narrowly lanceolate to elliptic, glaucous ... *S. glaucophyllum*
- 12. Fruit with 0(2) sclerotic granules; anthers 2-3 mm long [13]
- 12. Fruit with (0)2-9 sclerotic granules; anthers 0.7-3 mm long [15]
- 13. Plant sometimes glandular; inflorescence raceme-like; pedicels mostly spreading; seeds 1.8-2 mm long, 1.5-1.6 mm wide ... *S. nigrum*
- 13. Plant eglandular; inflorescence umbel-like; pedicels mostly recurved to reflexed; seeds 1-1.5 mm long, 0.8-1.5 mm wide [14]
- 14. Fruiting peduncle sharply reflexed downward; style extending to 1.5 mm beyond anther cone; calyx lobes appressed in fruit ... *S. chenopodioides*
- 14. Fruiting peduncle recurved to reflexed; style extending (1)2-2.5 mm beyond anther cone; calyx lobes reflexed in fruit ... *S. pseudogracile*

15. Anthers 2-3 mm long; calyx lobes appressed to spreading in fruit; seeds 1.2-1.5 mm long ... *S. nigrescens*

15. Anthers 0.7-1.5 mm long; calyx lobes and seeds various [14]

16. Pedicels mostly erect to spreading; fruit lustrous, with (0)2-4(6) sclerotic granules, the calyx lobes reflexed; seeds 1-1.5 mm long ... *S. americanum*

16. Pedicels mostly reflexed or recurved; fruit dull or slightly lustrous, with 6-9 sclerotic granules, the calyx lobes appressed to spreading; seeds 1.5-2 mm long ... *S. emulans*

***Solanum americanum*** Mill.— {AFP}

***Solanum bahamense*** L.— {AFP}

\****Solanum candidum*** Lindl.— {AFP}

\****Solanum capsicoides*** All.— {AFP}

***Solanum carolinense*** L. var. ***carolinense***— {AFP}

***Solanum carolinense*** L. var. ***floridanum*** Chapm.— {AFP}

***Solanum chenopodioides*** Lam.— {AFP}

\****Solanum citrullifolium*** A.Br.— {AFP}

***Solanum dimidiatum*** Raf.— {AFP}

\****Solanum diphyllum*** L.— {AFP}

***Solanum donianum*** Walp.— {AFP} State Threatened.

\****Solanum dulcamara*** L.— {AFP}

\****Solanum elaeagnifolium*** Cav.— {AFP}

***Solanum erianthum*** D.Don— {AFP}

\****Solanum glaucophyllum*** Desf.— {AFP}

\****Solanum jamaicense*** Mill.— {AFP}

^ ***Solanum lycopersicum*** L.— {AFP}

\****Solanum mauritianum*** Scop.— {AFP}

^ ***Solanum melongena*** L.— {AFP}

^ ***Solanum pimpinellifolium*** L.—

\****Solanum pseudocapsicum*** L.— {AFP}

^ ***Solanum quitoense*** Lam.—

\****Solanum rostratum*** Dunal— {AFP}

\****Solanum seaforthianum*** Andrews— {AFP}

\****Solanum sisymbriifolium*** Lam.— {AFP}

\****Solanum tampicense*** Dunal— {AFP}

\****Solanum torvum*** Sw.— {AFP}

^ ***Solanum tuberosum*** L.— {AFP}

\****Solanum umbellatum*** Mill.— {AFP}

\****Solanum viarum*** Dunal— {AFP}

\****Solanum villosum*** Mill.— {AFP}

^ ***Solanum wrightii*** Benth.— {AFP}

**Solandra** {AFP}

^ ***Solandra grandiflora*** Sw.— {AFP}

**SPHENOCLEACEAE** {AFP}

**Sphenoclea** {AFP}

\****Sphenoclea zeylanica*** Gaertn.— {AFP}

## BORAGINALES

### BORAGINACEAE {AFP}

1. Leaves palmately or pinnately lobed or divided (basal leaves sometimes simple and unlobed or undivided) ... Hydrophylloideae or Hydrophyllaceae
1. Leaves simple, undivided and unlobed [2]
2. Annual, prostrate to decumbent; inflorescence a solitary flower; fruit usually many-seeded (Namioideae or Namaceae) ... *Nama jamaicensis*
2. Annual or perennial, usually erect, rarely prostrate to decumbent; inflorescence usually many-flowered, rarely a solitary flower; fruit usually with 1-4 seeds, rarely to 8 [3]
3. Inflorescence elongate, racemiform, scorpioid, of densely clustered flowers directly adjacent or overlapping (flowers distant and not overlapping in the vine *Myriopus*); flowers small, the corolla 1.5-6 mm wide and long; style terminal and undivided, the stigma basal and roughly circular with a sterile, sometimes 2-lobed apex ... Heliotropioideae or Heliotropiaceae
3. Inflorescence usually cymose, thyrsoid, umbellate, dichasial, monochasial, or racemiform, the flowers typically distant and not overlapping, or flowers solitary; flowers large to small, the corolla 1.5-14 mm wide or long; style gynobasic and embedded or terminal, undivided to divided [4]
4. Herbs; style gynobasic; fruit dry nutlets ... Boraginoideae or Boraginaceae s.str.
4. Woody vine, shrub, or tree; fruit drupaceous [5]
5. Stigmatic branches 4; fruit white, pink, orange, to red; ovules orthotropous; cotyledons plicate ... Cordioideae or Cordiaceae
5. Stigmatic branches 2; fruit orange to red; ovules anatropous; cotyledons not plicate ... Ehretoideae or Ehretiaceae

#### Key to Boraginoideae or Boraginaceae s.str.

1. Fruit with hooked bristles [2]
1. Fruit without hooked bristles [3]
2. Leaves hirsute; corolla white; fruit with persistent style inconspicuous ... *Andersonglossum virginianum*
2. Leaves sericeous; corolla bluish; fruit with persistent style conspicuous ... *Cynoglossum zeylanicum*
3. Calyx with unciniate trichomes ... *Myosotis macrosperma*
3. Calyx without unciniate trichomes [4]
4. Annual; corolla white to bluish; fruit verrucose-tuberculate ... *Buglossoides arvensis*
4. Perennial; corolla white to yellow or orange; fruit smooth, shiny, with pits or rugose ... *Lithospermum*

#### Key to Cordioideae or Cordiaceae

1. Trees; inflorescence corymbose-cymose ... *Cordia*
1. Shrubs; inflorescence spicate or capitate ... *Varronia*

#### Key to Ehretoideae or Ehretiaceae

1. Leaf blade entire ... *Bourreria*
1. Leaf blade toothed ... *Ehretia*

#### Key to Heliotropioideae or Heliotropiaceae

1. Vine; flowers distant and not overlapping ... *Myriopus volubilis*

1. Prostrate to erect herb or shrub, or vines; flowers densely clustered adjacent or overlapping [2]
2. Flowers bracteate; anthers coherent at apex; fruit of 4 1-seeded nutlets ... *Euploca*
2. Flowers ebracteate; anthers free; fruit of 2 2-seeded nutlets ... *Heliotropium*

Key to Hydrophyloideae or Hydrophyllaceae

1. Overall leaf blade mostly as wide as or wider than long; flowers usually solitary ... *Nemophila aphylla*
1. Overall leaf blade mostly much longer than wide; inflorescence of several flowers ... *Phacelia dubia*

### **Andersonglossum** {AFP}

***Andersonglossum virginianum*** (L.) J.I.Cohen— {AFP} State Endangered.

### **Bouerreria** {AFP}

1. Largest leaf blades 0.5-1.7 cm wide, scabrid on the upper surface; inflorescence of 1-5(10) flowers; calyx 4-7 mm long; anthers even with corolla opening or just barely exerted; style 2-4(5) mm long ... *B. havanensis*
1. Largest leaf blades 2-6 cm wide, scabrid to glabrous on the upper surface; inflorescence of 5-30 flowers; calyx 6-10 mm long; anthers and sometimes the distal part of filament exerted from corolla; style (5)6-11(13) mm long [2]
2. Mature leaf blade usually glabrous on the upper surface, rarely scabrid with dilated multicellular bases, the larger blades 3-6 cm wide with 4-9 primary lateral veins per side, the blade base cuneate-attenuate, the apex acute, mucronulate to obtuse (occasionally a few emarginate) ... *B. succulenta*
2. Mature leaf blades scabrid on upper surface, the trichomes with dilated multicellular bases, the larger blades 2-3 cm wide with 3-5 primary lateral veins per side, the blade base acute-subtruncate, the apex retuse to obtuse ... *B. virgata*

***Bouerreria havanensis***— {AFP} State Endangered.

***Bouerreria succulenta*** Jacq.— {AFP} State Endangered.

***Bouerreria virgata***— {AFP} State Endangered. Long known as *B. radula*. Sparsely persisting on Key West, as remnants of what certainly were larger populations.

### **Buglossoides** {AFP}

\****Buglossoides arvensis*** (L.) I.M. Johnst.— {AFP}

### **Cordia** {AFP}

1. Upper leaf blade surface glabrous; corolla white, the tube 4-6 mm long ... *C. dichotoma*
1. Upper leaf blade surface scabrous; corolla orange, the tube 20-30 mm long ... *C. sebestena*

^ ***Cordia dichotoma*** G.Forst.— {AFP}

\*\* ***Cordia sebestena*** L.— {AFP} There is uncertainty about its nativity in south Florida (Tomlinson 1974, 1980; Bradley & Gann in Jones & Gamble 1999; Hammer 2000). The accounts by Audobon (1834, vol. 2:448), Melvill (1882:108, 1884:148), Millspaugh (1907:237), and Browne (1917:16) indicate it was also cultivated in south Florida.

### **Cynoglossum** {AFP}



\**Cynoglossum zeylanicum* (Lehm.) Brand— {AFP}

### Ehretia {AFP}

1. Tree to 8 m; leaf blade regularly serrate throughout the margin, surface glabrate ... E. acuminata

1. Shrub to 3 m; leaf blade apically coarsely toothed, some blades may be entire, surface scabrous ... E. microphylla

\**Ehretia acuminata* R.Br.— {AFP}

\**Ehretia microphylla* Lam.— {AFP}

### Euploca {AFP}

1. Stems 5-15(30) cm long; inflorescence leafy, the bracts not markedly differentiated from other leaves, the flowers sometimes appearing solitary, internodes plainly visible ... E. fruticosa

1. Stems 10-60 cm long; inflorescence bracteate, the bracts markedly smaller than cauline leaves [2]

2. Plant canescent, the hairs dense, laxly-appressed, 0.4-1 mm long; leaf blades obovate to narrowly oblanceolate, often distinctly petiolate; corolla 1.5-2 mm long ... E. procumbens

2. Plant strigose, the hairs sparse to moderate, stiffly appressed, 0.2-0.5; leaves linear-lanceolate to narrowly oblanceolate, mostly sessile to subsessile; corolla 4-6 mm long [3]

3. Stems erect, often strict ... E. polyphylla var. polyphylla

3. Stems spreading-decumbent or prostrate (coastal strand, pine rocklands, Pinellas and Martin Cos. southward, and Polk Co.) ... E. polyphylla var. horizontale)

*Euploca fruticosa* (L.) J.I.M. Melo & Semir— {AFP} State Endangered.

*Euploca polyphylla* (Lehm.) J.I.M. Melo & Semir— {AFP}

\**Euploca procumbens* (Mill.) Diane & Hilger— {AFP}

### Heliotropium {AFP}

1. Woody shrubs or vines; fruit a fleshy drupe or drupaceous and corky [2]

1. Herbs to subshrubs; fruit of dry nutlets, not drupaceous [4]

2. Plant glabrate ... H. laevigatum

2. Plant pubescent [3]

3. Plant grayish or silvery-canescens; leaves sessile, linear-spatulate; fruit corky, yellowish to brownish ... H. gnaphalodes

3. Plant green and hirsute to hispidulous; leaves petiolate, the blade lanceolate to ovate; fruit fleshy, white ... H. verdcourtii

4. Leaves glabrous, succulent ... H. curassavicum

4. Leaves variously hairy, chartaceous [5]

5. Leaves sessile ... H. amplexicaule

5. Leaves petiolate or the blade with an attenuate or decurrent base [6]

6. Leaf base rounded to acute or cuneate ... H. europaeum

6. Leaf base attenuate or decurrent, rarely cuneate [7]

7. Stem glabrate to hispidulous, hairs <1 mm long; leaves ovate-lanceolate to lanceolate; corolla 2.5-3.5 mm long ... H. angiospermum

7. Stem hispid, some hairs >1 mm long; leaves ovate to broadly ovate; corolla 3.5-5 mm long ... H. indicum

\**Heliotropium amplexicaule* Vahl— {AFP}

*Heliotropium angiospermum* Murray— {AFP}

*Heliotropium curassavicum* L.— {AFP}

\**Heliotropium europaeum* L.— {AFP}

*Heliotropium gnaphalodes* L.— {AFP} State Endangered. Previously placed in the genus *Argusia* or *Tournefortia*.

\**Heliotropium indicum* L.— {AFP}

\**Heliotropium laevigatum* (Lam.)Feuille— {AFP}

*Heliotropium verdcourtii* Craven— {AFP} State Endangered.

### Lithospermum {AFP}

1. Mid-stem leaf blades linear, 0.5-3 mm wide; with cleistogamous and chasmogamous flowers, chasmogamous corolla 15-40 mm long, cleistogamous corolla (0)2-6 mm long ... *L. incisum*

1. Mid-stem leaf blade linear-lanceolate, lanceolate, ovate, to obovate, 3.5-20 mm wide; flowers chasmogamous, corolla 4-25 mm long [2]

2. Leaf blade lateral veins not readily apparent; corolla heterostylous ... *L. carolinense*

2. Leaf blade with conspicuous lateral veins extending through much of the blade length; corolla not heterostylous [3]

3. Fleshy fusiform roots several at the base of the plant; corolla 4-7 mm long, lobes spreading, style 2-3 mm long, included ... *L. tuberosum*

3. Mostly one taproot at the base of the plant; corolla 8-14 mm long, lobes erect to appressed, style 10-19 mm long, exserted ... *L. virginianum*

*Lithospermum carolinense* (J.F.Gmel.)MacMill.— {AFP}

*Lithospermum incisum* Lehm.— {AFP}

*Lithospermum tuberosum* Rugel ex DC.— {AFP}

*Lithospermum virginianum* L.— {AFP}

### Myosotis {AFP}

*Myosotis macrosperma* Engelm.— {AFP}

### Myriopus {AFP}

*Myriopus volubilis* (L.)Small— {AFP}

### Nama {AFP}

\*\**Nama jamaicensis* L.— {AFP}

### Nemophila {AFP}

*Nemophila aphylla* (L.)Brummitt— {AFP}

### Phacelia {AFP}

\**Phacelia dubia* (L.)Trel. ex Branner & Coville— {AFP}

### Varronia {AFP}

1. Leaf blade entire, rarely with a few teeth ... *V. bahamensis*

1. Leaf blade margin regularly toothed, teeth sometimes subtle [2]

2. Leaf blade finely crenate to finely dentate; inflorescence spicate ... *V. curassavica*

2. Leaf blade coarsely dentate; inflorescence capitate ... *V. globosa*

*Varronia bahamensis* (Urb.) Millsp.— {AFP}

\**Varronia curassavica* Jacq.— {AFP}

*Varronia globosa* Jacq.— {AFP} State Endangered.

## GENTIANALES

### APOCYNACEAE {AFP}

Key, partly, to subfamilies

1. Flower without a corona, without a gynostegium, stamens distinct; pollen free, sometimes in tetrads; fruits follicles, capsules, drupes, or berries ... Apocynoideae, Periplocoideae, and Rauvolfioideae

1. Flower with a corona of 5 hoods each with an appendage-like horn and with the 5 anthers fused to the stigma as a column-like gynostegium; pollen massed into rigid pollinia; fruits follicles ... Asclepiadoideae

1. Leaves alternate, pseudowhorled, or rarely subopposite ... Key A

1. Leaves opposite or whorled [2]

2. Leaves whorled, 3 or more leaves at least at some nodes ... Key B

2. Leaves opposite, rarely whorled [3]

3. Erect to decumbent stiff herbs, shrubs, or trees ... Key C

3. Twining, scrambling, or clambering vines, or weak trailing herbs [4]

4. Flower to 100 mm long, without a corona, without a gynostegium, stamens distinct; pollen free, sometimes in tetrads; fruits follicles ... Key D

4. Flower to 13 mm wide or long, with a corona of 5 hoods each with an appendage-like horn and with the 5 anthers fused to the stigma as a column-like gynostegium; pollen massed into rigid pollinia; fruits follicles, capsules, drupes, or berries ... Key E

Key A: Leaves alternate

1. Herbs [2]

1. Shrubs to trees [3]

2. Inflorescence racemose; flower without a corona, without a gynostegium; seed lacking coma (tuft of hairs) ... *Amsonia*

2. Inflorescence umbelliform; flower with a corona of 5 hoods each with an appendage-like horn and with the 5 anthers fused to the stigma as a column-like gynostegium; seed with a coma (conspicuous tuft of hairs) ... *Asclepias*

3. Stems stout, 5-20 mm wide near the apex; leaves usually clustered near the stem apex ... *Plumeria*

3. Stems slender to moderately thick, 1-6 mm wide near the apex; leaves usually scattered along the distal portion of the stem [4]

4. Leaf blades linear to linear-oblongate, attenuate towards the base, the petiole indistinct, the blade mostly 9-12 cm long; corolla 5-7 cm long ... *Thevetia peruviana*

4. Leaf blades elliptic to obovate, acute to rounded at the base with a distinct petiole, the blade 3-7 cm long; corolla 0.6-1 cm long ... *Vallesia antillana*

Key B: Leaves whorled

1. (Key B) Herbs; leaves 0.5-6 mm wide ... *Asclepias verticillata*

1. Woody vines, shrubs, or trees; leaves (some or all) 6-50 mm wide [2]
2. Corolla 4-12 cm long, yellow to red-violet; fruit spiny ... *Allamanda*
2. Corolla 0.4-6 cm long; fruit not spiny [3]
3. Fruit a follicle [4]
3. Fruit a drupe [5]
4. Leaf blade secondary veins 1-15 mm apart; corolla lobes 3-7 mm long ... *Alstonia*
4. Leaf blade secondary veins 0.5-1.5 mm apart; corolla lobes 15-25 mm long ... *Nerium*
5. Leaf coriaceous, the blade secondary veins numerous and dense, straight or nearly so; fruit 3-4 cm long, red ... *Ochrosia*
5. Leaf chartaceous, the blade secondary veins several but widely spaced, curvaceous; fruit 0.5-1 cm long, red maturing black ... *Rauvolfia*

Key C: Erect to decumbent; leaves opposite

1. Herbs, or <1.2 m tall if shrubby [2]
1. Shrubs to trees, >1 m tall when mature [5]
2. Flower with a corona of 5 hoods each with an appendage-like horn and with the 5 anthers fused to the stigma as a column-like gynostegium ... *Asclepias*
2. Flower without a corona, without a gynostegium [8]
3. Leaf blades 2-10 mm wide; corolla yellow to yellowish white ... *Angadenia berteroi*
3. Leaf blades 10-60 mm wide, at least the larger ones; corolla white to pink to red [9]
4. Mature plants usually 0.8-2.5 m tall; corolla 1-7 mm wide; fruit 12-21 cm long; seed with a coma (conspicuous tuft of hairs) ... *Apocynum*
4. Mature plants 0.2-1 m tall; corolla 1.5-3.5 cm wide; fruit 1-3 cm long; seeds without a coma ... *Catharanthus roseus*
5. Leaf blades 6-14 cm wide ... *Calotropis*
5. Leaf blades 0.1-6 cm wide [6]
6. Stems with axillary spines ... *Carissa*
6. Stems without spines [12] ... *Tabernaemontana*

Key D: Vine or trailing herb; leaves opposite; flowers small

1. Leaf blades <3 cm long, <1 cm wide ... *Angadenia berteroi*
1. Leaf blades (all or some) >3 cm long, >1 cm wide [2]
2. Corolla pale green, yellowish, to yellow (sometimes with red lines) [3]
2. Corolla white, pink, bluish, or purplish [4]
3. Stem and leaves glabrous to densely pubescent; leaves persistent; leaf blade margins often revolute; corolla 3.5-5.5 cm long; fruit 12-18 cm long ... *Pentalinon*
3. Stem and leaves glabrous to sparsely pubescent; leaves deciduous; leaf blade margin plane or not revolute; corolla 0.5-1 cm long; fruit 1-2.3 cm long ... *Thyrsanthella*
4. Corolla 0.5-3.5 cm long [5]
4. Corolla 3.5-8 cm long [6]
5. Leaf blade elliptic to obovate; corolla white; fruit 10-15 cm long ... *Trachelospermum*
5. Leaf blade elliptic, lanceolate, to ovate; corolla blue, purple, violet, rarely white; fruit 2-6 cm long ... *Vinca*
6. Leaf blade tip obtuse to short-acuminate, without a mucro; pollen shed onto translators; fruit 3-sided, fusiform ... *Cryptostegia*
6. Leaf blade tip usually mucronate or apiculate to spinose; translators absent; fruit terete or compressed [7]
7. Leaf blades elliptic-ovate to orbiculate; calyx lobes 1.5-5 mm long; corolla lobes with a distinct narrow limb at the base and expanded blade at the apex, the limbs not overlapping

adjacent limbs or only slightly so, the lobe blade margin often ruffled, undulate, or somewhat irregular ... Echites

7. Leaf blades elliptic to oblanceolate or oblong, rarely broadly elliptic-obovate; calyx lobes 5-6 mm long; corolla lobes lacking a distinct limb, basal part of the lobes overlapping adjacent lobes, the lobe margin mostly entire ... Rhabdadenia

Key E: Vine or trailing herb; leaves opposite; flowers large

1. Leaves 1-3 mm wide [2]

1. Leaves 4-100 mm wide, at least the larger ones [4]

2. Leaf blade gradually narrowed to the base without a distinct petiole, the base about as thick as the stem (stems usually with leaves); peduncle 1-4 cm long ... *Pattalia palustre*

2. Leaf blade usually distinct from the petiole, the petiole distinctly thinner than the stem (stems sometimes nearly leafless); peduncle 0-1 cm long [3]

3. Stems leafy; leaf blade narrowly lanceolate, gradually narrowed towards the apex; peduncle 2.5-10 mm long; corolla lobes pubescent on the inner surface; corona lobes narrow ...

*Metastelma blodgettii*

3. Stems leafy or nearly leafless; leaf blade linear, rounded to abruptly acuminate or apiculate at the apex; peduncle 0-3 mm long; corolla lobes glabrous on the inner surface; corona lobes broad ... *Orthosia scoparia*

4. Plant with long eglandular and minute glandular trichomes [5]

4. Plant with eglandular trichomes [6]

5. Interpetiolar colleters absent; fruit angled, smooth, not muricate ... *Gonolobus*

5. Interpetiolar colleters present; fruit muricate, not angled ... *Matelea*

6. Distal leaf blades 3-7 cm wide, conspicuously cordate to lobate or hastate at the base [7]

6. Distal leaf blades 1.5-4(5.5) cm wide, truncate, rounded, to scarcely subcordate or rarely cordate at the base [8]

7. Interpetiolar colleters absent; basal leaf blades cordate at the base, distal ones deltate or hastate at the base ... *Araujia odorata*

7. Interpetiolar colleters present; leaf blade bases cordate ... *Cynanchum laeve*

8. Stems appearing leafy, with numerous leaves; leaf blades 1-2 cm long ... *Metastelma bahamense*

8. Leaf blades 2-10 cm long [8]

9. Stems often with few leaves or with long internodes exceeding the leaves; wet habitats ... *Funastrum clausum*

9. Stems leafy, the internodes generally shorter to slightly exceeding the leaves; upland habitats ... *Leptadenia lanceolata*

## Adenium

^ *Adenium obesum* (Forssk.) Roem & Schult.—

## Allamanda {AFP}

1. Corolla reddish or violet (cultivated only) ... *Allamanda blanchetii*

1. Corolla yellow [2]

2. Leaf blade lateral veins mostly flat to slightly raised near midvein on lower surface; corolla tube below stamen insertion 2-4 cm long; colleters absent between calyx base and corolla tube base; seeds winged ... *A. cathartica*

2. Leaf blade lateral veins mostly prominently raised on lower surface; corolla tube below stamen insertion 1-1.8 cm long; colleters present between calyx base and corolla tube base; seeds not winged ... *A. schottii*

^ *Allamanda blanchetii* A.DC.—

\* ***Allamanda cathartica*** L.— {AFP} Occasionally naturalized; frequently cultivated.

^ *Allamanda schottii* Pohl— {AFP}

### **Alstonia** {AFP}

1. Nodes with 3-4 leaves, rarely more; lateral veins curving or branching well before the leaf blade margin, the veins generally 5-15 mm apart from one another ... *A. macrophylla*

1. Nodes with 3-10 leaves, usually some with 5 or more; lateral veins straight to very slightly curved to the leaf blade margin, uniting with the marginal vein ca. within 1 mm of the margin, the veins generally 1-5 mm apart from one another ... *A. scholaris*

\* ***Alstonia macrophylla*** Wall. ex G.Don— {AFP}

\* ***Alstonia scholaris*** (L.)R.Br.— {AFP}

### **Amsonia** {AFP}

1. Petioles (1)2-5(6) mm long; leaf blades (4)8-18(23) mm wide ... *A. rigida*

1. Petioles 0-4 mm long, usually absent in distal leaves; leaf blades 0.3-10 mm wide [2]

2. Distal leaf blades 3-10 mm wide, margins slightly to strongly revolute ... *A. ciliata* var. *ciliata*

2. Distal leaf blades 0.3-1(2.4) mm wide, margins revolute ... *A. ciliata* var. *filifolia*

***Amsonia ciliata*** Walter— {AFP}

***Amsonia rigida***— {AFP}

### **Angadenia** {AFP}

***Angadenia berteroi*** (A.DC.) Miers— {AFP} State Threatened.

### **Apocynum** {AFP}

***Apocynum cannabinum*** L.— {AFP} Oddly disjunct in southern peninsula.

### **Araujia** {AFP}

\* ***Araujia odorata*** (Hook. & Arn.)Fontella & Goyder— {AFP}

**Asclepias** {AFP} The floral corona segments are also called hoods, and corona appendages known as horns.

1. Leaves mostly or all alternate, especially distally, occasionally some subopposite to opposite especially on proximal nodes ... Key A

1. Leaves opposite, subopposite, or whorled ... Key B

Key A: Leaves alternate

1. Sap clear; corolla reddish orange to orange, rarely yellow in Florida [2]

1. Sap white; corolla white, pink, purple, to greenish [4]

2. Leaf blade base usually hastate with cripstate-revolute margins ... *A. tuberosa* subsp. *rolfsii*

2. Leaf blade base cuneate, obtuse, rounded, truncate, to subcordate, the margins plane [3]

- 3. Leaf blade base truncate or obtuse to cordate, the apex acute to attenuate ... *A. tuberosa* subsp. interior
- 3. Leaf blade base cuneate to subcordate, the apex rounded to acute ... *A. tuberosa* subsp. *tuberosa*
- 4. Leaf blades ovate to lance-oblong ... *A. viridis*
- 4. Leaf blades linear to linear-lanceolate [5]
- 5. Basal branches often ascending to erect; leaves not secund; stems with 1-many inflorescence nodes of 1-3 umbels; corona segments compressed and laminar, appendages absent; fruiting pedicel upcurved ... *A. longifolia*
- 5. Basal branches often spreading; leaves sometimes secund; stems with 1 inflorescence node of 1-3 umbels; corona segments cupulate, the appendages exerted; fruiting pedicel straight and erect ... *A. michauxii*

Key B: Leaves opposite or whorled

- 1. Corolla lobes erect at anthesis [2]
- 1. Corolla lobes reflexed at anthesis [3]
- 2. Leaves 2-6 mm wide; corolla greenish yellow ... *A. pedicellata*
- 2. Leaves 15-30 mm wide; corolla greenish white ... *A. viridis*
- 3. Corolla lobes yellow, orange, orange-red, to scarlet [4]
- 3. Corolla lobes white, pink, purple, to greenish [5]
- 4. Leaves 16-70 times longer than wide, usually <1 cm wide ... *A. lanceolata*
- 4. Leaves 4-10 times longer than wide, usually >1 cm wide, at least larger ones ... *A. curassavica*
- 5. Leaves oblong to ovate [6]
- 5. Leaves linear to lanceolate [13]
- 6. Leaves sessile or subsessile; umbels pedunculate, the peduncle subequal to longer than the pedicels [7]
- 6. Leaves petiolate, or if subsessile, the umbels sessile [9]
- 7. Leaves broadly cuneate at base; corolla greenish yellow ... *A. connivens*
- 7. Leaves auriculate-clasping at base; corolla purple or purplish green [8]
- 8. Leaves elliptic; corolla lobes 9-11 mm long ... *A. amplexicaulis*
- 8. Leaves ovate-deltoid; corolla lobes 5-6 mm long ... *A. humistrata*  
... *A. cinerea*
- 9. Umbel peduncle subequal to longer than the pedicels [10]
- 9. Umbel peduncle shorter than the pedicels [11]
- 10. Larger leaves usually <4 cm long; inflorescence lateral; corona hood narrowly lanceolate ... *A. curtissii*
- 10. Larger leaves usually >5 cm long; inflorescence terminal; corona hood broadly rounded ... *A. variegata*
- 11. Corolla lobes 6-7 mm long, corona appendage absent or obscure ... *A. viridiflora*
- 11. Corolla lobes 9-10 mm long, corona appendage present [12]
- 12. Longest petioles usually <4 mm long; corona segments longer than the appendage ... *A. obovata*
- 12. Longest petioles usually >4 mm long; corona segments shorter than the appendage ... *A. tomentosa*
- 13. Leaves whorled ... *A. verticillata*
- 13. Leaves opposite to subopposite [14]
- 14. Corona segments shorter than the gynostegium [15]
- 14. Corona segments longer than the gynostegium [17]
- 15. Corona appendage present ... *A. cinerea*

- 15. Corona appendage absent [16]
- 16. Larger leaves <1.5 mm wide; corolla lobes spreading, 6-8 mm long ... *A. feayi*
- 16. Larger leaves >1.5 mm wide; corolla lobes reflexed, 2-5 mm long ... *A. longifolia*
- 17. Inflorescence umbels terminal ... *A. michauxii*
- 17. Inflorescence umbels terminal and from the upper leaf axils [18]
- 18. Leaves 1-2 mm wide ... *A. viridula*
- 18. Leaves 5-10 mm wide [19]
- 19. Leaves sessile or subsessile ... *A. rubra*
- 19. Leaves petiolate [20]
- 20. Leaf blade base rounded to short-tapering; corolla dull rose-purple ... *A. incarnata*
- 20. Leaf blade base long tapering; corolla white to pale pink ... *A. perennis*

***Asclepias amplexicaulis*** Sm.— {AFP}

***Asclepias cinerea*** Walter— {AFP}

***Asclepias connivens*** Baldwin— {AFP}

\****Asclepias curassavica*** L.— {AFP} Naturalized and also cultivated.

***Asclepias curtissii*** A.Gray— {AFP} Endemic. State Endangered.

***Asclepias feayi*** Chapm. ex A.Gray— {AFP} Endemic.

***Asclepias humistrata*** Walter— {AFP}

***Asclepias incarnata*** L.— {AFP}

***Asclepias lanceolata*** Walter— {AFP}

***Asclepias longifolia*** Michx.— {AFP}

***Asclepias michauxii*** Decne.— {AFP}

***Asclepias obovata*** Elliott— {AFP}

***Asclepias pedicellata*** Walter— {AFP}

***Asclepias perennis*** Walter— {AFP}

***Asclepias rubra*** L.— {AFP}

***Asclepias tomentosa*** Elliott— {AFP}

***Asclepias tuberosa*** L.— {AFP}

***Asclepias variegata*** L.— {AFP}

***Asclepias verticillata*** L.— {AFP}

***Asclepias viridiflora*** Raf.— {AFP} State Endangered.

***Asclepias viridis*** Walter— {AFP}

***Asclepias viridula*** Chapm.— {AFP} State Threatened.

### **Calotropis** {AFP}

1. Corolla lobes 10-15 mm long, mostly narrowly deltate-oblong and spreading to recurved; staminal corona segments 5-12.5 mm long, shorter than the gynostegial head ... *C. gigantea*

1. Corolla lobes 6-8 mm long, mostly ovate and erect to spreading; staminal corona segments 1-4 mm long, subequal to longer than the gynostegial head ... *C. procera*

^ *Calotropis gigantea* (L.)W.T. Aiton —

^ *Calotropis procera* (Aiton)W.T.Aiton— {AFP}

### **Carissa** {AFP}

1. Leaf blade apex often mucronate or spinose, the lateral veins all mostly spreading-divergent and straight; left side of corolla lobe upper surface overlapping atop adjacent lobe ... *C. macrocarpa*



1. Leaf blade apex rounded to acuminate, the proximal veins of leaf blade ascending-arcuate and a few distal veins at a different angle, spreading-divergent and somewhat straight; right side of corolla lobe upper surface overlapping atop adjacent lobe ... *C. spinarum*

\**Carissa macrocarpa* (Eckl.) A. DC.— {AFP}

\**Carissa spinarum* G. Lodd.—

### Catharanthus {AFP}

\**Catharanthus roseus* (L.) G. Don— {AFP} Endemic to Madagascar (Plaizier 1981; Snoeijer 1996; van Bergen 1996).

### Chthamalia

*Chthamalia pubiflora* Decne.— {AFP} State Endangered.

*Cryptostegia* {AFP} The differences between the two species are still a bit muddled and clear assignment of plants is not always possible.

1. Stem, leaf blade, and fruit glabrous; calyx lobes (13)14-20 mm long, margins partly revolute; corona lobes deeply bifurcate to bifid only at the apex; translator spathes orbiculate, obtuse at apex; fruit 8-14(16) cm long ... *C. grandiflora*

1. Stem, leaf blade, and fruit glabrous or hairy; calyx lobes 5.7-13(14) mm long, margins plane; corona lobes entire; translator spathes lanceolate to ovate, acute at apex; fruit 5-9(10) cm long ... *C. madagascariensis*

\**Cryptostegia grandiflora* R. Br.— {AFP}

\**Cryptostegia madagascariensis* Bojer ex Decne.— {AFP}

### Cynanchum {AFP}

*Cynanchum laeve* (Michx.) Pers.— {AFP}

### Echites {AFP}

*Echites umbellatus* Jacq.— {AFP}

### Funastrum {AFP}

*Funastrum clausum* (Jacq.) Schltr.— {AFP}

### Gomphocarpus

^ *Gomphocarpus physocarpus* E. Mey.—

### Gonolobus {AFP}

1. Pubescence of stem internodes evenly distributed, not in lines; calyx colleters 1 per sinus, calyx lobes 0.2-1 mm wide; corolline corona (faucal annulus) glabrous; fruit ovoid, <1/2 as wide as long ... *G. suberosus*

1. Pubescence of stem internodes in 2 lines, or glabrate; calyx colleters 2 per sinus, calyx lobes 1.3-2 mm wide; corolline corona (faucal annulus) with unicellular hairs 0.1-0.3 mm long; fruit broadly ovoid to suborbicular, >1/2 as wide as long ... *G. taylorianus*

**Gonolobus suberosus** (L.)R.Br.— {AFP}

\***Gonolobus taylorianus** W.D.Stevens & Montiel— {AFP}

## Hoya

^ *Hoya carnos*a (L.f.)R.Br.—

^ *Hoya pubicalyx* Merr.—

## Huernia

^ *Huernia schneideriana* A. Berger—

## Leptadenia {AFP}

\***Leptadenia lanceolata** (Poir.)Goyder— {AFP}

## Mandevilla

^ *Mandevilla sanderi* Woodson—

## Matelea {AFP}

1. Trailing to weakly climbing herb; leaf blade 0.5-4 cm long; of sandhills ... *Chthamalia pubiflora*

1. Elongate, climbing vines; leaf blade 3-17 cm long (at least larger ones); of hammocks and forests [1]

2. Corolla pale green to yellow-green, lobes strongly reticulate-veined with darkened lines; coronas yellow to pale green (rarely maroon) [3]

2. Corolla white or maroon, lobes not reticulate-veined; coronas whitish to cream or dark purple [4]

3. Corolla lobes ovate, the free margins overlapping at the base; ... *M. alabamensis*

3. Corolla lobes oblong, the free margins scarcely or not overlapping ... *M. flavidula*

4. Corolla white ... *M. baldwyniana*

4. Corolla maroon ... *M. floridana*

***Matelea alabamensis*** (Vail)Woodson— {AFP} State Endangered.

***Matelea baldwyniana*** (Sweet)Woodson— {AFP} State Endangered.

***Matelea flavidula*** (Chapm.)Woodson— {AFP} State Endangered.

***Matelea floridana*** (Vail)Woodson— {AFP} State Endangered.

## Metastelma {AFP}

1. Leaves 1-3 mm wide; corolla lobe upper surface puberulent ... *M. blodgettii*

1. Leaves 5-15 mm wide, at least the larger ones; corolla lobe upper surface villous ... *M. northropiae*

***Metastelma blodgettii*** A.Gray— {AFP} State Threatened.

***Metastelma northropiae*** Schltr.— {AFP}

## Nerium {AFP}

^ *Nerium oleander* L.— {AFP} Commonly cultivated, but also occasionally naturalized.

## Ochrosia {AFP}

\****Ochrosia elliptica*** Labill.— {AFP}

## Orthosia {AFP}

**Orthosia scoparia** (Nutt.)Liede & Meve— {AFP}

## Pachypodium

^ *Pachypodium lamerei* Drake—

## Pattalias {AFP}

**Pattalias paluster** (Pursh)Fishbein— {AFP}

## Pentalinon {AFP}

**Pentalinon luteum** (L.)B.F.Hansen & Wunderlin— {AFP}

## Plumeria {AFP}

1. Leaf blade abruptly spatulate, expanded in the distal portion ... *P. pudica*

1. Leaf blade oblong to elliptic [2]

2. Leaf blade apex usually rounded to emarginate; inflorescence branches densely congested; corolla white ... *P. obtusa*

2. Leaf blade apex usually acute to acuminate; inflorescence branches spreading; corolla with at least some pink, red, orange, or yellow, very rarely only white ... *P. rubra*

^ *Plumeria obtusa* L.— {AFP}

^ *Plumeria pudica* Jacq.—

^ *Plumeria rubra* L.—

## Rauvolfia {AFP}

^ *Rauvolfia tetraphylla* L.— {AFP}

## Rhabdadenia {AFP}

**Rhabdadenia biflora** (Jacq.)Müll.Arg.— {AFP}

## Stapelia

^ *Stapelia gigantea* N.E.Br.—

## Tabernaemontana {AFP}

1. Calyx lobes glabrous; corolla lobes 7-14 mm long; seeds 10-50 ... *T. alba*

1. Calyx lobes usually ciliate; corolla lobes 15-27 mm long; seeds 2-10 ... *T. divaricata*

^ *Tabernaemontana alba* Mill.— {AFP}

^ *Tabernaemontana divaricata* (L.)R.Br. ex Roem. & Schult.— {AFP}

## Thevetia {AFP}

^ *Thevetia peruviana* (Pers.)K.Schum.— {AFP}

## Thyrsanthella {AFP}

**Thyrsanthella difformis** (Walter)Pichon— {AFP}

## Trachelospermum {AFP}

^ *Trachelospermum jasminoides* (Lindl.) Lem.— {AFP} Commonly cultivated, rarely forming fruit; sparingly naturalizing.

## Vallesia {AFP}

*Vallesia antillana* Woodson— {AFP} State Endangered.

## Vinca {AFP}

1. Petiole 5-15 mm long; leaf blade 2-6 cm wide, margins ciliate; calyx lobes ciliate, 7-15 mm long; corolla lobes 15-20 mm long; seeds 7-10 mm long ... *V. major*

1. Petiole 1-2(10) mm long; leaf blade 0.5-2.5 cm wide, margins not ciliate; calyx lobes not ciliate, 3-4 mm long; corolla lobes 10-15 mm long; seeds 5-7 mm long ... *V. minor*

\**Vinca major* L.— {AFP}

\**Vinca minor* L.— {AFP}

## Wrightia

^ *Wrightia antidysenterica* J.Graham—

## GELSEMIACEAE {AFP}

### Gelsemium {AFP}

1. Leaf blade lower surface with small patch of spreading trichomes at base; pedicel mostly ebracteate in the upper half, the bracts not or scarcely overlapping the sepals; flower generally lacking fragrance; base of the corolla lobe usually overlapping adjacent corolla lobe; sepal tip acuminate, sepals usually persistent in fruit; fruit 9-16 mm long, beak 2.4-4.2 mm long; seed not winged; of bottomlands ... *G. rankinii*

1. Leaf blade lower surface glabrous to slightly scabridulous at base; pedicel usually bracteate in the upper half, the bracts imbricate with the sepals; flower pleasantly fragrant; sepal tip obtuse to acute, sepals not persistent in fruit; base of the corolla lobes usually not overlapping adjacent lobe; fruit 14-25 mm long, beak 1-2 mm long; seed winged; of uplands to lowlands ... *G. sempervirens*

*Gelsemium rankinii* Small— {AFP}

*Gelsemium sempervirens* (L.) J.St.-Hil.— {AFP}

## GENTIANACEAE {AFP}

1. Leaves scale-like, 0.5-5 mm long [2]

1. Leaves linear to expanded, larger ones 5-100 mm long, these sometimes placed as bracts subtending flowers [3]

2. Stem green to purplish; corolla narrowly campanulate, lobes 4, longer than the tube ... *Bartonia*

2. Stem whitish to pale yellowish; corolla salverform, lobes 5, shorter than the tube ... *Voyria parasitica*

3. Stem leaves scale-like, much smaller than those subtending flower; flower subtended by 2 foliaceous bracts or leaves and the calyx absent ... *Obolaria virginica*

3. Stem leaves foliaceous, larger than to subequal to those below the flower; calyx of 4-12(14) sepals, some or all connate at least at the base [4]

4. Corolla lobes shorter than the tube, with tooth-like or fringed projections between the lobes ... *Gentiana*

4. Corolla lobes longer than the tube, lacking projections between the lobes [5]

5. Stem and leaves often blue-green, strongly glaucous; flowers 5-merous; style not cleft or split ... *Eustoma exaltatum*

5. Stem and leaves green and non-glaucous or blue-green and glaucous; flowers 5-12-merous; style apically split at least 1 mm ... *Sabatia*

### **Bartonia** {AFP}

1. Inflorescence often unbranched with a solitary flower, or with up to 8(10) flowers; petal spreading; corolla lobes (4)5-11 mm long, 2.5-3.5 times as long as the calyx; flowering Nov-Apr ... *B. verna*

1. Inflorescence usually with 3-40 flowers, rarely 1-2; petals usually erect to ascending, sometimes spreading; corolla lobes 2-4 mm long, 1-2 times as long as the calyx; flowering Jul-Nov(Mar) [2]

2. Leaves and branching mostly opposite, the nodes numerous and crowded at the base of the stem; corolla lobes oblong, apically apiculate, erose to entire; stigmas connivent, style slender; fruit dehiscent medially below the style ... *B. virginica*

2. Leaves and branching mostly alternate, the nodes few and sparse at the base of the stem; corolla lobes lanceolate, apex acute not apiculate, entire; stigmas spreading, style stout; fruit dehiscent apically by separation from the style [3]

3. Stem stiff or stout, often thickened distally, purple; filaments usually purple; anthers often purple, sometimes yellow, 0.5-1 mm long ... *B. paniculata* subsp. *iodandra*

3. Stem lax, slender, sometimes twining, mostly green; filaments green to yellow; anthers usually yellow, 0.5 mm long ... *B. paniculata* subsp. *paniculata*

***Bartonia paniculata*** (Michx.)Muhl.— {AFP}

***Bartonia verna*** (Michx.)Raf. ex Barton— {AFP}

***Bartonia virginica*** (L.)Britton et al.— {AFP}

### **Centaurium**

\****Centaurium pulchellum*** (Sw.)Hayek ex Hand.-Mazz. et al.— {AFP}

### **Eustoma** {AFP}

***Eustoma exaltatum*** (L.)Salisb. ex G.Don— {AFP}

### **Gentiana** {AFP}

1. Leaves 2-8 mm wide, lacking basal lateral veins; flower solitary; corolla white, externally sometimes suffused with purple, internally with green or yellow in the throat ... *G. pennelliana*

1. Leaves 7-24 mm wide, usually a pair of basal lateral veins apparent; flowers 1-5; corolla bluish to purplish or white with bluish or purplish coloration [2]

2. Leaves obovate, widest above the middle; corolla appendages obliquely deltoid; seeds not winged ... *G. villosa*

2. Leaves elliptic to ovate, widest near the middle or base; corolla appendages bifid, lacinate; seeds winged [3]

3. Leaves mostly ovate, widest near the base; calyx lobes longer than the tube; corolla lobes spreading usually 2-4 mm longer than the appendages ... *G. catesbaei*

3. Leaves mostly elliptic, widest near the middle; calyx lobes subequal to shorter than the tube; corolla lobes usually incurved, rarely exceeding the appendages by more than 2 mm ... *G. saponaria*

***Gentiana catesbaei*** Walter— {AFP}

***Gentiana pennelliana*** Fernald— {AFP} Endemic. State Endangered.

***Gentiana saponaria*** L.— {AFP}

***Gentiana villosa*** L.— {AFP}

**Obolaria** {AFP}

***Obolaria virginica*** L.— {AFP}

**Sabatia** {AFP}

1. Sepals and petals with 7-14 lobes [2]

1. Sepals and petals with 5-7 lobes [5]

2. Flowers sessile or pedicel to 2.5 mm long ... *S. gentianoides*

2. Flowers pedicellate, the pedicel 8-80 mm long [3]

3. Leaves succulent, linear in distal half of stem, basal ones often present at flowering and dissimilar from distal ones; calyx lobes subulate, succulent ... *S. decandra*

3. Leaves chartaceous, distally lanceolate, elliptic, to linear, basal ones often absent at flowering and similar to distal ones; calyx lobes linear, chartaceous [4]

4. Not or only weakly stoloniferous; internodes mostly >1.25 times as long as subtending leaves; mostly brackish areas ... *S. dodecandra*

4. Stoloniferous; internodes mostly <1.25 times as long as subtending leaves; mostly freshwater areas ... *S. foliosa*

5. Upper branches or peduncles opposite [6]

5. Upper branches or peduncles alternate [10]

6. Stem terete; calyx lobes 0.1-3(4) mm long; leaves and distal stem glaucous [7]

6. Stem 4-angled, at least distally; calyx lobes (4)5-15 mm long; not glaucous or only slightly so [8]

7. Calyx lobes erect to spreading, subequal to shorter than the tube ... *S. macrophylla* var. *macrophylla*

7. Calyx lobes recurved, longer than the tube ... *S. macrophylla* var. *recurvans*

8. Pedicels 0.5-6 cm long; corolla pink, rarely white ... *S. angularis*

8. Pedicels 0.2-1 cm long; corolla white [8]

9. Stem subterete proximally, not winged ... *S. difformis*

9. Stem 4-angled and winged proximally, wings 0.1-0.5 mm ... *S. quadrangula*

10. Calyx lobes oblanceolate to spatulate, foliaceous ... *S. calycina*

10. Calyx lobes linear, subulate, filiform, to setaceous, not foliaceous [11]

11. Calyx lobes setaceous to subulate, 3-8 mm long, <½ as long as corolla; corolla white ... *S. brevifolia*

11. Calyx lobes linear, (4)6-25(30) mm long, >½ as long as corolla; corolla pink [12]

12. Perennial, stems 1-many, often the stems and branches erect and densely clustered in the basal part of the plant, distal branches strict to divaricate; leaves generally wider than the adjacent stem; calyx lobes usually >0.8 times as long as corolla; corolla lobes 6-24 mm long ... *S. campanulata*

12. Annual or biennial, stems single to uncommonly multiple, the branches primarily divaricate to ascending and slightly arching; leaves narrower to wider than the stem; calyx lobes usually <0.8 times as long as corollas [13]

13. Stems single and usually unbranched below the middle; leaves 0.5-2(5) mm wide, linear to linear-lanceolate or linear-oblong and narrowly acute at the tip, usually subequal to narrower than the adjacent stem, thick and rugose, venation obscure; corolla lobes (13)17-30 mm long; of inland areas ... *S. grandiflora*

13. Stems single to multiple, and often some plants branched below the middle; leaves (1)2-10(15) mm wide, linear-oblong to narrowly elliptic with rounded to obtuse apices (at least in proximal half), usually wider than the adjacent stem (at least in proximal half), thin and smooth, venation often visible on larger leaves; corolla lobes 5-20 mm long; of coastal areas ... *S. stellaris*

***Sabatia angularis*** (L.)Pursh— {AFP}

***Sabatia brevifolia*** Raf.— {AFP}

***Sabatia calycina*** (Lam.)A.Heller— {AFP}

***Sabatia campanulata*** (L.)Torr.— {AFP}

***Sabatia decandra*** (Walter)R.M.Harper— {AFP}

***Sabatia difformis*** (L.)Druce— {AFP}

***Sabatia dodecandra*** (L.)Britton et al.— {AFP}

***Sabatia foliosa*** Fernald— {AFP} Sometimes included under *S. dodecandra*.

***Sabatia gentianoides*** Elliott— {AFP}

***Sabatia grandiflora*** (A.Gray)Small— {AFP}

***Sabatia macrophylla*** Hook.— {AFP}

***Sabatia quadrangula*** Wilbur— {AFP}

***Sabatia stellaris*** Pursh— {AFP}

**Voyria** {AFP}

***Voyria parasitica*** (Schltdl. & Cham.)Ruyters & Maas— {AFP} State Endangered.

**LOGANIACEAE** {AFP}

1. Trees or shrubs; fruit a berry with a hardened exocarp ... *Strychnos*

1. Herbs; fruit a small capsule ... [2]

2. Leaf blades pinninerved; inflorescence pedunculate; corolla 2-3 mm long; style not articulated; fruit emarginate to acuminate, separating into 2 hornlike structures, lacking a woody remnant ... *Mitreola*

2. Leaf blades often appearing trinerved or triplinerved at the base; inflorescence sessile; corolla 5-50 mm long; style articulated; fruit cleft into 2 rounded lobes apically, a woody cuplike remnant persistent after dehiscence ... *Spigelia*

**Mitreola** {AFP}

1. Cauline leaves petiolate, to 7(8) cm long, the petiole 1-15(30) mm long, the base abruptly narrowed-decurrent, the apex acute-acuminate, distal leaves usually spreading to ascending ... *M. petiolata*

1. Cauline leaves sessile to subsessile, to 2.5(3.3) cm long, petiole to 1 mm long, the base mostly rounded to truncate, the apex abruptly acute, distal leaves ascending to erect-appressed [2]

2. Leaves lanceolate-elliptic to linear, 3-5 times longer than wide; capsule horns papillose-warty on inner and outer faces; seeds iridescent, alveolate-reticulate ... *M. angustifolia*

2. Leaves ovate to elliptic, 1.3-2 times longer than wide; capsule horns lightly tuberculate mostly on inner faces; seeds lustrous but not iridescent, smooth ... *M. sessilifolia*

***Mitreola angustifolia*** (Torr. & A.Gray)J.B.Nelson— {AFP}

***Mitreola petiolata*** (J.F.Gmel.)Torr. & A.Gray— {AFP}

***Mitreola sessilifolia*** (J.F.Gmel.)G.Don— {AFP}

### **Spigelia** {AFP}

1. Annual; stem below inflorescence with 1-3 nodes, mostly leafless; inflorescence with 22-45 flowers, subtended by a pseudowhorl of leaves, these leaves the largest on the plant ... *S. anthelmia*

1. Perennial, rhizomatous; stem below inflorescence leafy with several nodes; inflorescence with 2-17 flowers, subtended by a pair of leaves or occasionally a pseudowhorl, these leaves smaller, subequal, or not much larger than cauline leaves [2]

2. Rhizomes stout; cauline leaf blades 4-12 cm long, 1-5 cm wide; corolla (3)4-5 cm long, externally scarlet (rarely white), internally yellow to greenish (rarely pink) ... *S. marilandica*

2. Rhizomes slender; cauline leaf blades 2-6(7) cm long, 1-2 cm wide; corolla (0.7)1-3 cm long, white or pink [3]

3. Inflorescence elongate, with (2)3-8 flowers; corolla 25-30 mm long ... *S. gentianoides*

3. Inflorescence subsessile with 2 flowers; corolla (7)10-17 mm long ... *S. loganioides*

***Spigelia anthelmia*** L.— {AFP}

***Spigelia gentianoides*** Chapm. ex A.DC.— {AFP} Federally Endangered. State Endangered.

***Spigelia loganioides*** (Torr. & A.Gray ex Endl. & Fenzl)A.DC.— {AFP} Endemic. State Endangered.

***Spigelia marilandica*** (L.)L.— {AFP}

### **Strychnos** {AFP}

^ *Strychnos spinosa* Lam.— {AFP}

### **RUBIACEAE** {AFP}

1. Herbs, sometimes suffrutescent or vine-like; leaf blades 0.1-3 cm wide ... Key A

1. Woody vines, subshrubs, shrubs, or trees; leaf blades 0.1-25 cm wide ... Key B

Key A: Herbs; leaf blades small

1. Leaves whorled, 4-8 per node [2]

1. Leaves opposite, 2 per node [3]

2. Inflorescence axillary or terminal, pedunculate or flowers pedicellate ... *Galium*

2. Inflorescence terminal with sessile flowers subtended by a whorl of leaves ... *Sherardia arvensis*

3. Leaf blades 1-5 mm long ... *Oldenlandiopsis callitrichoides*

3. Leaf blades (3)5-50 mm long [4]

4. Flowers pedicellate, pedicel (2)3-15 mm long [5]

4. Flowers sessile to subsessile, pedicel 0-3 mm long [7]

5. Calyx lobes, corolla lobes, and stamens usually 5 ... *Pentodon pentandrus*

5. Calyx lobes, corolla lobes, and stamens 4 [6]

6. Seeds crateriform (with a ventral depression and a linear hilar ridge within or a ventral subglobose cavity lacking a hilar ridge), or if noncrateriform then leaves linear ... *Houstonia*



- 6. Seeds noncrateriform (leaves linear-lanceolate, elliptic, to ovate) ... *Oldenlandia*
- 7. Leaves distinctly petiolate, the petiole 2-10 mm long, the blade 1.3-5 times as long as the petiole; fruit a drupe or berry [8]
- 7. Leaves sessile or subsessile, the petiole 0-3 mm long, the blade 10 times or more the length of the petiole; fruit a capsule [9]
- 8. Leaf blade 2-6.5 cm long; inflorescence of separate flowers, the ovaries not fused; fruit blue or purplish, with the remnant of one calyx and one corolla scar ... *Coccocypselum hirsutum*
- 8. Leaf blade 0.8-2 cm long; inflorescence a pair of flowers with the ovaries fused; fruit red, with remnants of 2 calyces and 2 corolla scars ... *Mitchella repens*
- 9. Leaf blade lacking conspicuous secondary veins [10]
- 9. Leaf blade with conspicuous lateral veins [14]
- 10. Carpels with 2 or more seeds [11]
- 10. Carpels 1-seeded [12]
- 11. Stipules with inconspicuous marginal teeth to 2 mm long; leaves ovate to elliptic, 3-11 mm wide; flowers both axillary and terminal ... *Edrastima uniflora*
- 11. Stipules with conspicuous marginal teeth to 5 mm long; leaves linear to narrowly elliptic, 1-3(5) mm wide; flowers all axillary ... *Oldenlandia boscii*
- 12. Fruit not separating into 2 parts ... Spermaceae
- 12. Fruit separating into 2 parts [13]
- 13. Stipular bristles flattened-linear, to 5 mm long, shorter than the flower and fruit; corolla lobe upper surface hirsute; fruit 5-9 mm long ... *Diodia*
- 13. Stipular bristles filiform, to 8 mm long, longer than the flower and fruit; corolla lobe upper surface glabrous; fruit 2-3(4.5) mm long ... *Hexasepalum teres*
- 14. Inflorescence sessile or pedunculate, <6 flowers in the inflorescence; fruit separating into 2 parts ... *Diodia*
- 14. Inflorescence sessile with 6-50 sessile flowers densely clustered at one stem node (only one or some flowers may be open at a time); fruit not separating into 2 parts [15]
- 15. Calyx and corolla lobes 4 or 5-6 ... *Richardia*
- 15. Calyx and corolla lobes 4 [16]
- 16. Stem or leaf base frequently hispid or pilose; calyx lobes to 2 mm long, conspicuously exserted; carpels opening transversely ... *Mitracarpus hirtus*
- 16. Stem or leaf base glabrate, pubescent, hispid, or pilose; calyx lobes to 1.5 mm long, conspicuously exserted or not; carpels opening longitudinally ... Spermaceae

Key B: Woody; leaf blades small to large

- 1. Flowers sessile in dense heads [2]
- 1. Flowers pedicellate [4]
- 2. Leaves opposite or whorled; fruit dry ... *Cephalanthus occidentalis*
- 2. Leaves opposite; fruit fleshy [3]
- 3. Only a few flowers open simultaneously; style short-exserted; stigma bilobed, the lobes strap-like; mature fruit white to yellow ... *Morinda*
- 3. All or nearly all flowers open simultaneously; style long-exserted; stigma conic or cylindrical; mature fruit brown to red ... *Nauclea latifolia*
- 4. Fruit a capsule [5]
- 4. Fruit a berry [7]
- 5. Inflorescence with some sepals petaloid and greatly enlarged, white to pink to reddish ... *Pinckneya bracteata*
- 5. Sepals green, not petaloid, not enlarged [6]
- 6. Plant glabrous or glabrate ... *Exostema caribaeum*

6. Plant hirsute, villous, or pilose, especially on younger parts ... *Pentas lanceolata*
7. Leaves 1-10 mm wide with inconspicuous lateral veins or the lateral veins extending to the leaf apex, margins revolute or plane [8]
7. Leaves 3-150 mm wide, usually with conspicuous lateral veins extending to the margin or evanescent, the margins usually plane [9]
8. Scrambling shrub or vine-like; internodes mostly >7 mm long, leaves distributed along the stem ... *Ernodea*
8. Erect shrub; internodes <7 mm long, leaves often densely clustered at the stem apex ... *Strumpfia maritima*
9. Axillary spines present or absent; mature main stems usually axillary fascicles of leaves or with short shoots of a scarcely elongated stem of densely clustered nodes where the leaves arise [10]
9. Axillary spines absent; stems lacking short shoots [11]
10. Leaves 3-10 mm long; corolla lobes 4; fruit 2-4 mm long ... *Catesbaea parviflora*
10. Leaves 5-50 mm long; corolla lobes 5; fruit 6-13 mm long ... *Randia aculeata*
11. Inflorescence axillary [12]
11. Inflorescence terminal, new stems sometimes produced laterally below the inflorescence and well exerted beyond the inflorescence [15]
12. Stipules 5-12 mm long; leaves 6-15 cm long; fruit 5-8 cm long ... *Casasia clusiifolia*
12. Stipules 0.5-8 mm long; leaves 1-17 cm long; fruit 0.3-1 cm long [13]
13. Leaves with a fetid or unpleasant odor; base of the corolla lobes and inside of the tube pink to purple; fruit orangeish, brown, or blackish ... *Paederia*
13. Leaves with an insignificant or neutral odor; corolla lobes and tube white, yellow, to green inside; fruit white or red [14]
14. Sprawling or vine-like, sometimes shrubby; stems and leaves glabrous to glabrate; inflorescence of elongate racemes or panicles; fruit white ... *Chiococca*
14. Shrubs or trees, rarely sprawling; stems and leaves pubescent; inflorescence a pedunculate capitulate cyme; fruit red ... *Guettarda*
15. Leaves opposite or whorled; inflorescence racemose; corolla yellow to reddish orange, the outer surface pubescent ... *Hamelia patens*
15. Leaves opposite; inflorescence subcapitate; corolla white to greenish, the outer surface glabrous [16]
16. Stipules usually stiff-pointed or spinose; corolla tube 6-45 mm long ... *Ixora*
16. Stipules chartaceous or coriaceous, rounded to acute; corolla tube 1-4 mm long [17]
17. Leaf blade secondary veins plane, not impressed; stigma with 5-10 lobes, the ovary of 5-10(22) locules; fruit with 5-10 seeds ... *Erithalis fruticosa*
17. Leaf blade secondary veins often impressed with the blade tissue raised between the veins; stigma with 2 lobes, the ovary of 2 carpels; fruit with 2 seeds ... *Psychotria*

### **Casasia** {AFP}

***Casasia clusiifolia*** (Jacq.) Urb.— {AFP}

### **Catesbaea** {AFP}

***Catesbaea parviflora*** Sw.— {AFP} State Endangered.

### **Cephalanthus** {AFP}

***Cephalanthus occidentalis*** L.— {AFP}

## Chiococca {AFP}

1. Mature plant 1–4 m tall (very rarely shorter esp. at its northern limit), compact or scandent shrubs to high-climbing vines, rarely rooting where stems touch the ground; the central stem 1.2–5.4 cm wide at the plant base, becoming much wider than distal stems, strongly rigid, often trunk-like; bark of older stems becoming light gray below newer green (rarely purplish) growth; leaves to 10 cm long and 4 cm wide, the petiole usually distinct and to 15 mm long, the secondary veins 3–6 on each side of the midrib, the secondary veins often relatively conspicuous on the upper surface and discolorous (whitish to yellow-green) from the green blade surface, reticulate veins sometimes apparent, the upper blade surface lustrous; peduncle, rachis, pedicel, and ovary usually green (rarely purplish); peduncle 7–25 mm long, the peduncle+rachis 2–9 cm long; calyx and corolla (4)5-merous; corolla yellow to whitish ... *C. alba*

1. Mature plant 0.1–3.5 m tall, sprawling, procumbent, to scandent subshrubs to vines, commonly rooting where stems touch the ground; the central stem 0.1–1(2) cm wide at the plant base, not much wider than distal portions of the stems, weakly stiffened; bark of older stems becoming dark purplish gray to gray-black below newer green to purplish growth or if gray then the mature plant <1 m tall; leaves to 6 cm long and 1.8 cm wide, the petiole often indistinct or to 4 mm long, the secondary veins unapparent or 1–3 on each side of the midrib and sometimes concolorous with the blade surface, reticulate veins usually unapparent, the upper blade surface dull; peduncle, rachis, pedicel, and ovary green to purplish; peduncle 2–10 mm long, the peduncle+rachis 0.5–4 cm long; calyx and corolla 4–5-merous; corolla yellow to purplish [2]

2. Plant 0.1–3.5 m tall, sprawling or climbing, vine-like; longer stems usually >1.5 m long; larger leaves >3 cm long, >13 mm wide, mostly 2.5–5 cm long; inflorescence peduncle+rachis 0.5–4 cm long ... *C. parvifolia*

2. Plant 0.1–0.5(1) m tall, sprawling subshrub; longer stems <1(1.5) m long; larger leaves <3.1(3.8) cm long, <13 mm wide, mostly 1–3 cm long; inflorescence peduncle+rachis 0.5–2 cm long; of pine rocklands ... *C. pinetorum*

***Chiococca alba*** (L.) Hitchc.— {AFP} Peninsula. Well-drained hammocks. Possibly those of the upper west peninsula are nearer to populations of Texas.

***Chiococca parvifolia*** Wulfschl. ex Griseb.— {AFP} Southern peninsula. Mesic to wet hammocks, swamps, pinelands, and prairies.

***Chiococca pinetorum*** Britton ex Millsp.— {AFP} Miami-Dade & Monroe Co. keys. Pine rocklands.

## Coccocypselum {AFP}

\****Coccocypselum hirsutum*** Bartl. ex DC.— {AFP}

## Diodia {AFP}

1. Leaves 15–36 mm long at mid-stem; corolla tube 4–7.5 mm long; fruit 4–6(6.5) mm long ... *D. harperi*

1. Leaves 30–65 mm long at mid-stem; corolla tube 6.5–9 mm long; fruit 6.5–9 mm long ... *D. virginiana*

***Diodia harperi*** Small— Usually subsumed under *D. virginiana* but sometimes accepted as a species (Fernald & Griscom 1937; Sorrie 2016) and hesitantly done so here.

***Diodia virginiana*** L.— {AFP}

## Edrastima {AFP}

*Edrastima uniflora* (L.) Raf.— {AFP}

## Erithalis {AFP}

*Erithalis fruticosa* L.— {AFP} State Threatened.

## Ernodea {AFP}

1. Leaf blade with 1(2) vein(s) (very rarely 3), 1-2.4 mm wide, (5)7-50 times longer than wide; corolla usually white ... *E. cokeri*

1. Leaf blade with 3-7 veins, sometimes some blades with 1 vein or appearing 1-veined, sometimes the lateral veins subtle, 2.5-9.4 mm wide, 2-14(20) times longer than wide; corolla white to red ... *E. littoralis*

*Ernodea cokeri* Britton ex Coker— {AFP} State Endangered.

*Ernodea littoralis* Sw.— {AFP}

## Exostema {AFP}

*Exostema caribaeum* (Jacq.) Roem. & Schult.— {AFP} State Endangered.

## Galium {AFP}

1. Leaves 5–8 per stem node, at least on some or most nodes [2]

1. Leaves 4 per stem node (rarely more) [4]

2. Leaves 4-6 per stem node; ovary and fruit glabrous or with few uncinatate trichomes ... *G. tinctorium*

2. Leaves 6 or 8 per stem node; ovary and fruit moderately to densely uncinatate-hispid [3]

3. Annual; leaves mostly 8 per stem node; leaves 2.5-15 times longer than wide ... *G. aparine*

3. Perennial; leaves mostly 6 per stem node; leaves 2.3-4 times longer than wide ... *G. triflorum*

4. Ovary and fruit moderately to densely uncinatate-hispid [5]

4. Ovary and fruit glabrous or with few uncinatate trichomes [6]

5. Stems to 40(60) cm tall; 3-6 nodes with green leaves per main stem; inflorescence relatively short, few-flowered ... *G. circaezans*

5. Stems to 110 cm tall; 6-20 nodes with green leaves per main stem; inflorescence elongate, diffuse, compound ... *G. pilosum*

6. Fruit dry [7]

6. Fruit fleshy [8]

7. Stem angles glabrous, somewhat rounded; leaves 4 per node (rarely 5); corolla lobes 4, apex acute ... *G. obtusum* subsp. *filifolium*

7. Stem angles glabrous to scabrid, somewhat sharp; leaves 4-6 per node; corolla lobes 3-4, apex obtuse ... *G. tinctorium*

8. Leaves mostly 2-3 times longer than wide; fruit blue ... *G. bermudense*

8. Leaves mostly 5-7 times longer than wide; fruit black ... *G. uniflorum*

*Galium aparine* L.— {AFP}

*Galium bermudense* L.— {AFP}

*Galium circaezans* Michx.— {AFP}

*Galium obtusum* Bigel. subsp. *filifolium* (Wiegand) Puff— {AFP}

*Galium pilosum* Aiton— {AFP}

*Galium tinctorium* L.— {AFP}

***Galium triflorum*** Michx.— {AFP}

***Galium uniflorum*** Michx.— {AFP}

### **Guettarda** {AFP}

1. Upper surface of leaf blade not scabrous, the trichomes not bullate, secondary and tertiary venation prominulous or slightly impressed on; tertiary venation flat or slightly prominulous on leaf blade underside, sparse to moderately covered in trichomes and the surface visible; leaf blade usually <4 cm long ... *G. elliptica*

1. Upper surface of leaf blade scabrous, the trichomes bullate at the base, secondary and tertiary venation often impressed; tertiary venation prominent on leaf blade underside, densely pubescent and obscuring the surface; leaf blade usually >3 cm long ... *G. scabra*

***Guettarda elliptica*** Sw.— {AFP}

***Guettarda scabra*** (L.)Vent.— {AFP}

### **Hamelia** {AFP}

1. Dense, compact shrub; leaves 2-4 per node; petioles and midrib pale greenish; leaf blades glabrous to pubescent, often lustrous, 4.5-9 cm long, 1.5-3.6 cm wide; inflorescence with 20-50 flowers; corolla tubes yellow to orange, with a distinct basal constriction; non-native, primarily cultivated ... *H. patens* var. *glabra*

1. Open shrub; leaves 2-3 per node; petioles and midribs reddish; leaf blades pubescent (esp. lower surface), relatively dull, mostly 6-18 cm long, 3-8 cm wide; inflorescence mostly with 20-30 flowers; corolla tubes pubescent, yellow-orange to red, with a subtle basal constriction; native and cultivated ... *H. patens* var. *patens*

***Hamelia patens*** Jacq. var. ***glabra***—Commonly cultivated; native primarily to northern South America; rarely escapes if at all.

***Hamelia patens*** Jacq. var. ***patens***— {AFP} Hammocks, and commonly cultivated.

### **Hexasepalum** {AFP}

***Hexasepalum teres*** (Walter)J.H.Kirkbr.— {AFP}

### **Houstonia** {AFP}

1. Leaf blade 0.2-2(8) mm wide, 10-40 times longer than wide; seeds not crateriform (at most with a shallow indistinct depression) [2]

1. Leaf blade 2-20 mm wide (at least larger ones), 1.5-15 times longer than wide; seeds crateriform with an obvious ventral depression or cavity [3]

2. Corolla 3-5(6) mm long; capsule subglobose, 1.2-2.5 mm long, 1-1.3 times longer than wide ... *H. nigricans* var. *floridana*

2. Corolla (2.5)3-8 mm long; capsule turbinate, 1.5-4.5 mm long, 1.3-2 times longer than wide ... *H. nigricans* var. *nigricans*

3. Leaves 15-45 mm long (at least larger ones) [4]

3. Leaves 2-15 mm long [5]

4. Lower or median cauline leaves 0.3-8.5 mm wide, linear to elliptic ... *H. longifolia*

4. Basal or median cauline leaves 3-35(45) mm wide, ovate to narrowly lanceolate ... *H. purpurea*

4. Annual; stems erect to spreading, not rooting at nodes, internodes 2-5 per stem [5]

4. Perennial; stems prostrate, sometimes rooting at nodes, internodes usually >4 per stem [6]

- 5. Calyx lobes 0.8-1.2 times as long as corolla tube; corolla white, 2-5.5 mm long, the tube 0.8-2.5 mm long ... *H. micrantha*
- 5. Calyx lobes 0.2-1.2 times as long as corolla tube; corolla purple, violet, pink, to white, 3.5-10(12.5) mm long, the tube 2-5.5 mm long ... *H. pusilla*
- 6. Plants short-hirsute ... *H. procumbens* var. *hirsuta*
- 6. Plants glabrous to sparsely pubescent ... *H. procumbens* var. *procumbens*

***Houstonia longifolia*** Gaertn.— {AFP}

***Houstonia micrantha*** (Shinners)Terrell— {AFP}

***Houstonia nigricans*** (Lam.)Fernald var. ***floridana*** (Standl.)Terrell— {AFP}

***Houstonia nigricans*** (Lam.)Fernald var. ***nigricans***— {AFP}

***Houstonia procumbens*** (J.F.Gmel.)Standl. var. ***hirsuta*** (W.H.Lewis)D.B.Ward— {AFP}

***Houstonia procumbens*** (J.F.Gmel.)Standl. var. ***procumbens***— {AFP}

***Houstonia purpurea*** L.— {AFP}

***Houstonia pusilla*** Schoepf— {AFP}

### **Ixora** {AFP}

- 1. Petiole 0-4 mm long; leaf blade 1.3-2.1 times longer than wide; corolla tube orange to red, 15-45 mm long ... *I. coccinea*
- 1. Petiole 2-7 mm long; leaf blade 2.5-4 times longer than wide; corolla tube white, 3-7 mm long ... *I. pavetta*

^ *Ixora coccinea* L.— {AFP}

\****Ixora pavetta*** Andrews— {AFP}

### **Mitchella** {AFP}

***Mitchella repens*** L.— {AFP}

### **Mitracarpus** {AFP}

\****Mitracarpus hirtus*** (L.) DC.— {AFP}

### **Morinda** {AFP}

- 1. Erect shrub or tree; leaves broadly elliptic to ovate, 7-30 cm long; compound fruit 5-10 cm long ... *M. citrifolia*
- 1. Weak to vine-like shrub; leaves elliptic-lanceolate to narrowly oblanceolate; compound fruit 1-2.5 cm long ... *M. royoc*

^ *Morinda citrifolia* L.— {AFP}

*Morinda royoc* L.— {AFP}

### **Nauclea** {AFP}

^ *Nauclea latifolia* Sm.— {AFP}

### **Oldenlandia** {AFP}

- 1. Flowers sessile ... *O. boscii*
- 1. Flowers pedicellate [2]
- 2. Annual, erect, spreading, to decumbent; leaves 8-35(40) mm long ... *O. corymbosa*
- 2. Perennial, creeping or prostrate; leaves 4 mm long ... *O. salzmannii*

***Oldenlandia boscii*** (DC.)Chapm.— {AFP}

\****Oldenlandia corymbosa*** L.— {AFP}

\****Oldenlandia salzmannii*** (DC.)Benth. & Hook.f. ex B.D.Jacks.— {AFP}

### Oldenlandiopsis {AFP}

\****Oldenlandiopsis callitrichoides*** (Griseb.)Terrell & W.H.Lewis— {AFP}

### Paederia {AFP}

1. Corolla tube tubular, gradually narrowed into ovary; fruit strongly laterally compressed ... P. cruddasiana

1. Corolla tube campanulate, rounded and constricted at base above the calyx; fruit globose ... P. foetida

\****Paederia cruddasiana*** Prain— {AFP}

\****Paederia foetida*** L.— {AFP}

### Pentas {AFP}

^ ***Pentas lanceolata*** (Forssk.)Deflers— {AFP}

### Pentodon {AFP}

***Pentodon pentandrus*** (Schumach. & Thonn.)Vatke— {AFP}

### Pinckneya {AFP}

***Pinckneya bracteata*** (W.Bartram)Raf.— {AFP} State Threatened.

### Psychotria {AFP}

1. Leaf blade broadly rounded to widely acute at the apex, sometimes with an abrupt acumen, with scattered dark dots visible on the lower surface (hosting symbiotic bacteria) ... P. punctata

1. Leaf blade narrowly acute and becoming acuminate at the apex, without scattered dots on the lower surface [2]

2. Plant densely hispid-puberulent, especially along the veins of the lower leaf surface, with stiff hairs to 0.1 mm, without domatia; leaf blades typically glaucous bluish green; flowering June-October ... P. tenuifolia

2. Plant glabrate to moderately pilose, especially pilose with wavy hairs 0.3--0.7 mm long around vein axils of the lower leaf surface (domatia); leaf blades typically lustrous light to dark green; flowering mostly March-July, less often in other months [3]

3. Leaf blades green to dark green, the veins flat or slightly impressed relative to the upper surface, tertiary veins obscure on the lower surface; calyx lobes conspicuous ... P. ligustrifolia

3. Leaf blades light green to green, the veins impressed relative to the upper surface, tertiary veins conspicuous on the lower surface; calyx lobes inconspicuous, minute ... P. nervosa

^ ***Psychotria alba*** Ruiz & Pav.—

***Psychotria ligustrifolia*** (Northr.)Millsp.— {AFP} State Endangered.

***Psychotria nervosa*** Sw.— {AFP}

\****Psychotria punctata*** Vatke— {AFP}

***Psychotria tenuifolia*** Sw.— {AFP}

^ ***Psychotria viridis*** Ruiz & Pav.—

## Randia {AFP}

*Randia aculeata* L.— {AFP}

## Richardia {AFP}

1. Corolla 4-merous; fruit units (mericarps, appearing seed-like, the actual seed within and alveolate) smooth ... *R. humistrata*

1. Corolla 5-merous; fruit units (mericarps, appearing seed-like, the actual seed within and alveolate) tuberculate or hirsute [2]

2. Fruit units (mericarps) hirsute, the inner surface broad with a median keel ... *R. brasiliensis*

2. Fruit units (mericarps) tuberculate, the inner surface with a narrow groove [3]

3. Corolla 12-20 mm long ... *R. grandiflora*

3. Corolla 5-7 mm long ... *R. scabra*

\**Richardia brasiliensis* Gomes— {AFP}

\**Richardia grandiflora* (Cham. & Schltdl.) Steud.— {AFP}

\**Richardia humistrata* (Cham. & Schltdl.) Steud.— {AFP}

\**Richardia scabra* L.— {AFP}

## Sherardia {AFP}

\**Sherardia arvensis* L.— {AFP}

## Spermacoce {AFP}

1. Stems and leaves copiously short-pilose, pilose, or hispid [2]

1. Stems and leaves glabrous to sparingly pubescent [3]

2. Stems conspicuously winged, the wings 0.3-0.5 mm wide; leaves 1.5-4 times longer than wide, with 4-8 lateral veins; trichomes white to red ... *S. latifolia*

2. Stems not winged; leaves (2.5)3-6 times longer than wide, with 1-3(4) lateral veins; trichomes white ... *S. tetraquetra*

3. Calyx lobes 1-2 mm wide, 1.5-2.3 mm long; fruit glabrous; leaves with evident lateral veins ... *S. glabra*

3. Calyx lobes 0.2-0.7 mm wide, 0.3-1.5 mm long; fruit pubescent or glabrous [4]

4. Stem nodes usually with a pair of leaves only; calyx lobes 4, 0.2-0.4 mm wide [5]

4. Stem nodes commonly with sessile axillary fascicles of reduced leaves; calyx lobes 2-4, 0.4-0.7 mm wide [7]

5. Stems, leaves, calyx-lobes, and-or flower buds generally plain green without red coloration; leaves usually lacking evident lateral veins; calyx lobes (0.7)1-1.3 mm long, conspicuous, enclosing the corolla or exerted beyond the corolla ... *S. prostrata*

5. Stems, leaves, calyx-lobes, and-or flower buds commonly suffused with red or pink, sometimes plain green without red; leaves commonly with evident lateral veins; calyx lobes 0.3-0.8 mm long, inconspicuous, the corolla exerted beyond the calyx lobes [6]

6. Stem glabrous; corolla lobes 0.5-1 mm long, only slightly longer than the calyx lobes; fruit 1-2 mm long, glabrous to pubescent ... *S. keyensis*

6. Stem usually pubescent below the nodes; corolla lobes 2-4 mm long, more than 2 times longer than the calyx lobes; fruit 2-3 mm long, pubescent ... *S. remota*

7. Leaves 0.8-2 cm wide, 2-4(4.5) times longer than wide ... *S. dasycephala*

7. Leaves 0.1-1 cm wide, (3.5)4-10 times longer than wide [8]



8. Corolla lobes 0.4–0.8 mm wide, 0.4–1 mm long; anthers 0.4–0.7 mm long; fruit (including persistent calyx lobe) 1.5–2.5 mm long ... *S. verticillata*

8. Corolla lobes 0.8–1.2 mm wide, 1–2.5 mm long; anthers 0.8–1.1 mm long; fruit (including persistent calyx lobe) 2.5–5 mm long [8]

9. Stems and branches many from the base of the plant, weakly lax to erect; deltoid prickles (0.1–0.5 mm long) along leaf blade midvein usually absent or 1–2 at the blade base; corolla lobe 1.5–2.5 mm long; fruit (including persistent calyx lobe) 2.5–4 mm long, dehiscent, somewhat open or cylindrical, usually 2-seeded ... *S. neoterminalis*

9. Stems single or many (especially when mowed) from the base of the plant, typically few to unbranched in the basal 1/2 of the plant, mostly erect (unless mowed); corolla lobe 1–1.5 mm long; fruit (including persistent calyx lobe) 4–5 mm long, indehiscent, flattened, usually 1-seeded with the other locule abortive ... *Borreria diacrodonta*

\**Spermacoce densiflora* (DC.) Alain— {AFP}

\**Borreria diacrodonta* L.M.Miguel & E.L.Cabral—Southern peninsula (native to Brazil).  
Disturbed, well-drained sands.

*Spermacoce glabra* Michx.— {AFP}

*Spermacoce keyensis* Small— {AFP}

\**Spermacoce latifolia* Aubl.— {AFP}

*Spermacoce neoterminalis* Govaerts— {AFP} Endemic.

*Spermacoce prostrata* Aubl.— {AFP}

*Spermacoce remota* Lam.— {AFP}

*Spermacoce tetraquetra* A.Rich.— {AFP}

\**Spermacoce verticillata* L.— {AFP}

*Strumpfia* {AFP}

*Strumpfia maritima* Jacq.— {AFP} State Endangered.

## LAMIALES

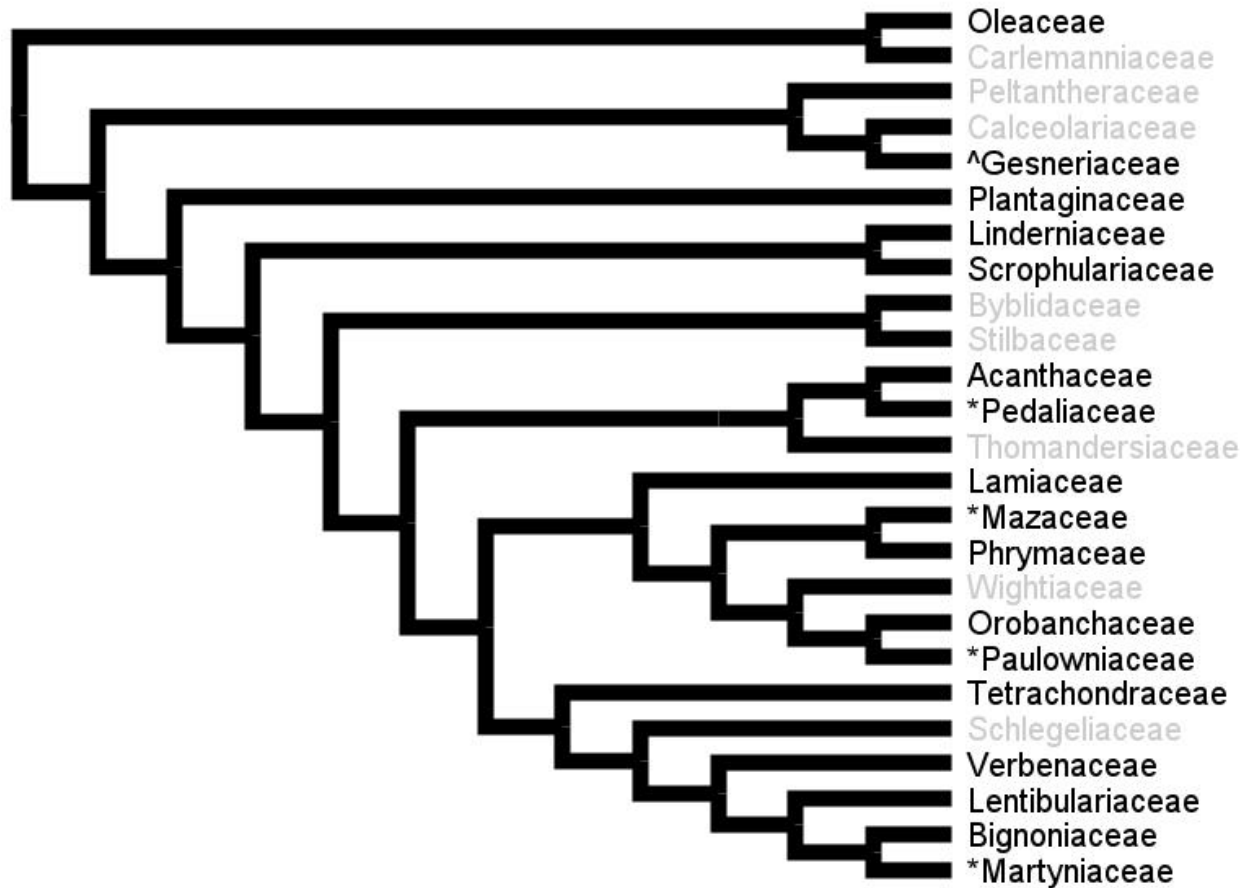


Figure: Estimated phylogeny of extant Lamiales. Black font=contains taxa native to Florida; Asterisk=introduced to Florida; Gray font=not native, not included.

## OLEACEAE {AFP}

- 1. Leaves compound [2]
- 1. Leaves simple [3]
- 2. Trees; leaves compound; corolla absent or not showy (in Florida species); fruit a samara ... Fraxinus
- 2. Vines or shrubs; corolla showy, evident; fruit a berry ... Jasminum
- 3. Leaf blade underside densely whitish or grayish tomentose ... Olea europaea
- 3. Leaf blade underside generally greenish, glabrous to pubescent [4]
- 4. Flowers without a corolla ... Forestiera
- 4. Flowers with 4-9-lobed corollas [5]
- 5. Petioles 2-3 mm wide, lignescent; leaf blade base truncate and distinct from petiole ... Noronhia emarginata
- 5. Petioles 1-2 mm wide, not lignescent; leaf blade base rounded, cuneate, or acute, usually at least partly attenuate with the petiole [6]
- 6. Vines or mostly low or weak shrubs; corolla lobes 4-9, 8-25 mm long ... Jasminum
- 6. Trees or mostly tall or robust shrubs; corolla lobes 4, 1-4 mm long [6]
- 7. Inflorescence terminal ... Ligustrum
- 7. Inflorescence axillary [8]

8. Leaf blades mostly with obscure secondary venation; inflorescence bracts scale-like, 1-2 mm long; corolla lobes 1-4 mm long ... *Cartrema*

8. Leaf blades mostly with readily apparent secondary venation, often the reticulum visible on the underside; inflorescence bracts foliaceous, 7-20 mm long; corolla lobes 7-30 mm long ... *Chionanthus*

### ***Cartrema* {AFP}**

1. Mature fruit 7-15 mm wide; of xeric to hydric sites ... *C. americanum*

1. Mature fruit 14-25 mm wide; of xeric sites ... *C. floridanum*

***Cartrema americanum*** (L.) G.L.Nesom— {AFP}

***Cartrema floridanum*** (Chapm.) G.L.Nesom— {AFP} Endemic.

### ***Chionanthus* {AFP}**

1. Leaf blades 1-2(2.2) times longer than wide, the apex broadly rounded and often retuse or notched ... *C. retusus*

1. Leaf blades (1.9)2-4 times longer than wide, the apex rounded to acute [2]

2. Corolla lobes 7-15 mm long; anther tip abruptly obtuse to rounded; fruit 2-2.5 cm long; of xeric sites ... *C. pygmaeus*

2. Corolla lobes 15-30 mm long; anther tip acuminate; fruit 1-2 cm long; of xeric to hydric sites ... *C. virginicus*

***Chionanthus pygmaeus*** Small— {AFP} Endemic. Federally Endangered. State Endangered.

***Chionanthus virginicus*** L.— {AFP}

### ***Forestiera* {AFP}**

1. Leaf blade glabrous, the margins entire [2]

1. Leaf blade glabrous or pubescent at least near the base or on the veins, the margins toothed, at least some, sometimes only subtly [3]

2. Leaves (3.5)3.8-14 times longer than wide ... *F. segregata* var. *pinetorum*

2. Leaves 2-3(3.5) times longer than wide ... *F. segregata* var. *segregata*

3. Petiole 7-20 mm long; leaf blades mostly lanceolate to ovate-lanceolate, the apex long-acute to long-acuminate; peduncle 8-11(14) mm long; pedicel 1-2 mm long; fruits 11-12 mm long ... *F. acuminata*

3. Petiole 0-6(7) mm long; leaf blades mostly ovate, elliptic, to rhombic, the apex rounded, short-acute, to abruptly short-acuminate; peduncle 0-5 mm long; pedicel 4-7(10) mm long; fruits 6-9 mm long [4]

4. Young stems evenly pubescent; petiole moderately pubescent; flowering Jan-Feb, before emergence of leaves, fruiting Mar-May ... *F. godfreyi*

4. Young stems pubescent in 2 longitudinal lines; petiole glabrous to sparsely pubescent; flowering Jun-Oct, with mature leaves present, fruiting Jul-Nov ... *F. ligustrina*

***Forestiera acuminata*** (Michx.)Poir.— {AFP}

***Forestiera godfreyi*** L.C.Anderson— {AFP} State Endangered.

***Forestiera ligustrina*** (Michx.)Poir.— {AFP}

***Forestiera segregata*** (Jacq.)Krug & Urb.— {AFP}

***Fraxinus* {AFP}** See treatment by [Campbell \(2017\)](#).

1. Stem sometimes with flaking waxy surface, especially 2nd year; terminal buds dark reddish-brown to blackish, mostly obtuse-deltoid and apiculate, about as wide as twig; leaf-scar often broadly U-shaped and deeply concave along upper edge; leaflet upper surface plain green to olive or bluish when dried, lower surface whitish or uniformly fine-textured bluish-silvery (with dense minute 1–10 µm wide waxy papillae and reticulating ridges visible at 25X), the ultimate veinlets usually somewhat obscured; leaves turning golden yellow, pinkish, reddish or purplish in fall, their hairs usually whitish; fruit with wing decurrent only to distal 1/3 of body or less, the wings 3-7(10) mm wide with 3-5 veins on each side of the wing, the body plump and sub-terete, distinctly thicker than the surrounding wing, or in *F. pauciflora* the fruit more like the second leaf below; of well-drained mesic hammocks and forests, or hydric sites in *F. pauciflora*; Americana group [2]

1. Stem without flaking waxy surface; terminal buds brown to reddish-brown, usually acute and longer than wide, often narrower than twig when viewed on edge; leaf-scar nearly hemispheric and slightly convex or truncate to slightly concave along upper edge; leaflet upper surface dark green to dull orange-brown or reddish green when dried, lower surface pale to medium green beneath (without minute waxy reticulating papillae), the ultimate veinlets usually prominent; leaves turning yellowish or orange-brown in fall, their hairs often slightly yellowish to reddish; fruit with wing decurrent to middle or below of body, the wings 8-22 mm wide with 5-19 veins on each side of the wing, the body relatively flattened, not much thicker than surrounding wing; mesic-hydric to hydric hammocks, forests, and swamps; Pennsylvanica Group [4]

2. Fruit wings 8-22 mm wide with 5-19 veins on each side of the wing, the body relatively flattened, not appreciably thicker than surrounding wing; mesic-hydric to hydric hammocks, forests, and swamps; tetraploid ... *F. pauciflora*

2. Fruit wings 3-7(10) mm wide with 3-5 veins on each side of the wing, the body plump and sub-terete, distinctly thicker than the surrounding wing; of well-drained mesic hammocks and forests [3]

3. Young stems and rachises usually glabrous; petiole bases deeply notched (mostly 30-50% of width) around buds, the margins often sharply angled; upper leaflet surfaces usually plain yellowish-green, lower surfaces usually with hairs restricted to midrib and proximal parts of primary veins, sometimes more widespread to dense; fruit 25-38(45) mm long, 3-5.5(7) mm wide, body mostly 6-11 mm long, 1.5-2.5 mm wide; diploid, rarely tetraploid or pentaploid ... *F. americana*

3. Young stems and rachis densely pubescent to glabrate; petiole bases slightly notched (mostly 0-20% of width) around buds, the margins usually blunt; upper leaflet surfaces usually somewhat bluish-green, lower surfaces with hairs often widespread and usually dense along veins, sometimes glabrate; fruit mostly 30-50 mm long, 5-7 mm wide, body mostly 10-15 mm long, 2-4 mm wide; tetraploid or hexaploid ... *F. biltmoreana* var. *subcoriacea*

4. Shrub to tree, to 20 m, single to multi-trunked; petiolules <1 cm long; leaflets usually 5 (occasionally 3 or 7), 1.8-4 cm wide, thin textured, obtuse to acute; fruit 7-20 mm wide, broadly elliptic to narrowly oblanceolate or spatulate, the body lateral edges indistinct from the wing [5]

4. Large tree, to 30 m, generally with a single trunk; petiolules 0.5-2 cm long; leaflets usually 7 (occasionally 5), 2.5-7 cm wide, firm textured, of uniform shape, acute to acuminate; fruit 4-12 mm wide, rhombic to narrowly spatulate or linear, the body edges distinct, slightly thicker than surrounding wing [6]

5. Fruit 35-46 mm long, (10)12-20(22) mm wide, rhombic to broadly elliptic, elliptic-obovate, oblong-obovate, or rhombic-ovate, the body usually >½ the length, wings 2-3, lateral veins (11)13-19 on each side of the wing; diploid or tetraploid ... *F. caroliniana*

5. Fruit (25)30-50(54) mm long, 6-10(12) mm wide, obovate-oblongate. narrowly obovate, to narrowly elliptic-obovate, the body usually  $< \frac{1}{2}$  the length, wings 2, lateral veins 5-9 on each side of the wing; diploid ... *F. cubensis*

6. Young stems and leaves usually densely pubescent, infrequently glabrous; leaflets mostly 9-15 cm long, 3.5-7 cm wide, usually truncate to rounded at base, the distal pair of petiolules (3)4-14(20) mm long; female flowers with calyx (1)2.5-5(7) mm long; anthers with slender terminal cusp 0.5-1 mm long; fruit (32)42-65(74) mm long, (5.5)6-11(12) mm wide, wing decurrent to 50-100% below apex of body, apex usually emarginate with a notch ca. 1 mm, the mature body usually 18-30 mm long, 2.5-4.5 mm wide, plump with obscure ridges and channels, pale to dark reddish-brown; octoploid ... *F. profunda*

6. Young stems and leaves glabrous to moderately pubescent; leaflets mostly 7.5-11 cm long, 2.5-5 cm wide, usually cuneate, the distal pair of petiolules (0)1-5(9) mm long; female flowers with calyx 0.5-2(2.5) mm long; anthers with an apiculate tip 0.2-0.4 mm long; fruit 25-50(60) mm long, 3-8(11) mm wide, the wing decurrent to 20-50% below apex of body, the apex usually rounded to slightly emarginate with a notch rarely to 1 mm, the mature body usually 12-22 mm long, 1-2.5 mm wide, not plump, with distinct ridges and channels, pale yellowish-brown to dark brown but rarely reddish; diploid [7]

7. Young stems, rachises, and leaflets glabrous or glabrate, except along midrib on lower leaflet surfaces; leaflets mostly 3.5-4.5 cm wide, often weakly serrate, especially those of vigorous shoots; fruit mostly 4-5 mm wide ... *F. pennsylvanica* var. *subintegerrima*

7. Young stems, rachises, and lower leaflet surfaces densely pubescent; leaflets mostly 4-5 cm wide, usually subentire; fruit mostly 5-6 mm wide ... *F. pennsylvanica* var. *pennsylvanica*

***Fraxinus americana*** L.— {AFP}

***Fraxinus biltmoreana*** Beadle—

***Fraxinus caroliniana*** Mill.— {AFP}

***Fraxinus cubensis*** Griseb.—Unclear if truly specifically distinct.

***Fraxinus pauciflora*** Nutt.—

***Fraxinus pennsylvanica*** Marshall— {AFP}

***Fraxinus profunda*** (Bush)Bush—

**Jasminum** {AFP} All species below have been cultivated to some degree.

1. Leaves compound with 3-7 leaflets, occasionally a few leaves simple [2]

1. Leaves simple [4]

2. Leaflets 5-9 per leaf ... *J. grandiflorum*

2. Leaflets (1-)3 per leaf [3]

3. Young stems pubescent to glabrate; leaflets broadly rounded to truncate at the base with a distinct petiolule 2-20 mm long; corolla white ... *J. fluminense*

3. Young stems glabrous; leaflets cuneate to attenuate at the base and sessile to subsessile; corolla yellow ... *J. mesnyi*

4. Young stems glabrous [5]

4. Young stems pubescent to villous [6]

5. Leaf blades broadly ovate to orbicular, broadly rounded at the tip with an abrupt acumen; calyx lobes deltoid, 2-3 mm long ... *J. dichotomum*

5. Leaf blades ovate to lanceolate, acute towards the acuminate tip; calyx lobes linear to filiform, 5-7 mm long ... *J. laurifolium*

6. Young stems densely villous; leaf blades ovate-deltoid to lanceolate, pubescent below; inflorescence of 5-14 flowers, subsessile; pedicels 1-3 mm long ... *J. multiflorum*
6. Young stems pubescent; leaf blades broadly elliptic to ovate, with tufts of pubescence in the vein axils; inflorescence of a solitary pedicellate flower or 3(-5) flowers with a 5-20 mm long peduncle; pedicels 5-10 mm long ... *J. sambac*

- \* *Jasminum dichotomum* Vahl— {AFP}
- \* *Jasminum fluminense* Vell.— {AFP}
- ^ *Jasminum grandiflorum* L.— {AFP}
- ^ *Jasminum laurifolium* Roxb. ex Hornem.— {AFP}
- \* *Jasminum mesnyi* Hance— {AFP}
- ^ *Jasminum multiflorum* (Burm.f.) Andrews— {AFP}
- ^ *Jasminum sambac* (L.) Aiton— {AFP}

### Ligustrum {AFP}

1. Leaves of fertile stems (4)5-13(15) cm long, at least the larger ones, coriaceous, evergreen [2]
1. Leaves of fertile stems 1.5-5(6.5) cm long, thinly coriaceous, deciduous to evergreen [3]
2. Larger leaves 5-9 cm long, the apex obtuse to abruptly acuminate, lateral veins generally obscure and concolorous with the blade surface; corolla tube subequal to lobes, tube scarcely exerted from the calyx ... *L. japonicum*
2. Larger leaves 7-13 cm long, the apex acute to acute-acuminate, the lateral veins generally evident on both sides and discolorous from the blade surface; corolla tube ca. 2 times longer than the lobes, conspicuously exerted from the calyx ... *L. lucidum*
3. Stem glabrous to rarely hirtellous in lines, often glossy; corolla tube (1.5)2-3 times longer than the lobes ... *L. ovalifolium*
3. Stems hirtellous, puberulent, to substrigose, evenly or in 2 lines, dull; corolla tube subequal to the lobes [4]
4. Leaf blade (2.8)3-4.6(5) times longer than wide; pedicels 0-1.5(2) mm long ... *L. quihoui*
4. Leaf blade (1.5)1.6-2.5(3) times longer than wide; pedicels 1.5-4 mm long ... *L. sinense*

- \* *Ligustrum japonicum* Thunb.— {AFP}
- \* *Ligustrum lucidum* W.T. Aiton— {AFP}
- \* *Ligustrum ovalifolium* Hassk.— {AFP}
- \* *Ligustrum quihoui* Carrière— {AFP}
- \* *Ligustrum sinense* Lour.— {AFP}

### Noronhia {AFP}

- ^ *Noronhia emarginata* (Lam.) Poir.— {AFP}

### Osmanthus

- ^ *Osmanthus fragrans* Lour.—

### GESNERIACEAE {AFP}

#### Achimenes

- ^ *Achimenes grandiflora* (Schiede) DC.—

#### Chrysothemis

- ^ *Chrysothemis pulchella* (Donn ex Sims) Decne.—

## Episcia

^ *Episcia cupreata* (Hook.) Hanst.—

## Seemannia

^ *Seemannia sylvatica* (Kunth) Hanst.—

## PLANTAGINACEAE {AFP}

1. Perianth absent ... Callitriche
1. Perianth present [2]
2. Leaves all basal ... Plantago
2. Leaves basal and cauline, or all cauline [3]
3. Corolla spurred (sometimes subtle) [4]
3. Corolla not spurred [5]
4. Leaves broadly ovate; corolla yellow and purple ... Kickxia spuria
4. Leaves generally linear; corolla pink, blue, to violet ... Linaria
5. Leaves (at least some) whorled [6]
5. Leaves opposite, subopposite, to alternate [9]
6. Leaves scale-like, highly reduced relative to the size of the plant ... Russelia equisetiformis
6. Leaves not scale-like, not highly reduced [7]
7. Flowers in elongate spikes ... Veronicastrum virginicum
7. Flowers axillary [8]
8. Proximally the leaves dissected, usually submerged, or if not then the pedicel longer than the flower ... Limnophila
8. Leaves never dissected, pedicel shorter than the flower ... Stemodia durantifolia
9. Vines ... Maurandya
9. Herbs [10]
10. Pedicel with 2 foliaceous bracts at its base ... Mecardonia
10. Pedicel with 1 bract at its base and 1 distal just below sepals [11]
11. Annuals, emergent aquatics, or prostrate to decumbent herbs [12]
11. Stiffly ascending to erect perennials [15]
12. Fruit compressed, the apex notched or with a sinus ... Veronica
12. Fruit globose to cylindric, the apex tapering [13]
13. Leaves pinnatifid ... Leucospora multifida
13. Leaves entire to toothed [14]
14. Sepals unequal, distinctly dissimilar ... Bacopa
14. Sepals subequal and similar ... Gratiola
15. Caulines leave alternate distally, opposite proximally ... Misopates orontium
15. Cauline leaves opposite [16]
16. Stamens 2 [17]
16. Stamens 4 [18]
17. Leaves not papillose, not revolute; flowers pedicellate ... Gratiola
17. Leaves papillose, margin revolute often; flowers sessile or subsessile ... Sophronanthe
18. Plant somewhat scapose, the basal leaves often rosette-forming, basal and proximal-most leaves typically petiolate with somewhat elliptic or obovate blades, the cauline or distal leaves epetiolate and somewhat elongate or linear, internodes rather elongate ... Penstemon
18. Plant not scapose, the leaves all generally similar, not rosette-forming, internodes not particularly elongate [19]

19. Corolla 10-20 mm long ... *Angelonia gardneri*  
19. Corolla 2-5 mm long ... *Scoparia*

### **Angelonia** {AFP}

^ *Angelonia gardneri* Hook.— {AFP}

### **Bacopa** {AFP}

1. Stem glabrous; leaves 1-veined, the base cuneate to ligulate ... *B. monnieri*  
1. Stem pubescent to glabrate; leaves with 3-9 veins, the base cordate to truncate or broadly cuneate [2]  
2. Stems often densely hispidulous; leaves with lemon-like odor when crushed; corolla blue ... *B. caroliniana*  
2. Stems finely hispidulous, pubescent, to glabrate; leaves lacking lemon-like odor; corolla white [3]  
3. Leaves usually ovate and broadest below the middle, with 3-5(7) veins, the base cordate to truncate; outer sepal cordate ovate-orbicular, reticulate-veined, to 3 mm wide ... *B. innominata*  
3. Leaves usually orbiculate to broadly obovate and broadest at or above the middle, with 5-11 veins, the base broadly cuneate; outer sepal oblong-ovate to elliptical, parallel-veined without reticulate venation, to 2 mm wide ... *B. repens*

***Bacopa caroliniana*** (Walter)B.L.Rob.— {AFP}

***Bacopa innominata*** (M.Gómez)Alain— {AFP}

***Bacopa monnieri*** (L.)Pennell— {AFP}

\****Bacopa repens*** (Sw.)Wettst.— {AFP}

### **Callitriche** {AFP}

1. Pedicels 0-5 mm long; mericarp with curved wings throughout ... *C. pedunculosa*  
1. Pedicels absent; mericarp not winged or with straight wings only at apex [2]  
2. Flowers usually solitary; schizocarp width and length subequal, 0.5-1 mm; mericarp not swollen base ... *C. heterophylla*  
2. Flowers usually 3 per node; schizocarp 0.4-0.7 mm long, 0.7-0.9 mm wide; mericarp swollen at base ... *C. peploides*

***Callitriche heterophylla*** Pursh— {AFP}

\****Callitriche pedunculosa*** Nutt.— {AFP}

***Callitriche peploides*** Nutt.— {AFP}

### **Gratiola** {AFP}

1. Leaves with (3)5-10(12) pairs of conspicuous teeth ... *G. viscidula*  
1. Leaves entire or with 1-4(5) pairs of low blunt teeth [2]  
2. Bracteoles subtending calyx 0(1) ... *G. ramosa*  
2. Bracteoles subtending calyx (1)2 [3]  
3. Pedicels 20-45(55) mm long; corolla 14-25 mm long ... *G. floridana*  
3. Pedicels 5-25(30) mm long; corolla 8-15 mm long [4]  
4. Corolla usually longer than the pedicel ... *G. virginiana*  
4. Corolla usually shorter than the pedicel [5]  
5. Pedicels densely glandular-puberulent to glandular-pubescent; corolla lobes white ... *G. brevifolia*



5. Pedicels sparsely glandular-puberulent; corolla lobes yellow (rarely white) ... *G. lutea*

***Gratiola aurea*** Pursh— {AFP}

***Gratiola brevifolia*** Raf.— {AFP}

***Gratiola floridana*** Nutt.— {AFP}

***Gratiola ramosa*** Walter— {AFP}

***Gratiola virginiana*** L.— {AFP}

***Gratiola viscidula*** Pennell— {AFP}

**Kickxia** {AFP}

\****Kickxia spuria*** (L.)Dumort.— {AFP} Walton Co., single collection from 1885 by A.H. Curtiss.

**Leucospora** {AFP}

\****Leucospora multifida*** (Michx.)Nutt.— {AFP}

**Limnophila** {AFP}

1. Leaves opposite or in whorls of 3, 10-55 mm long, submerged and emersed leaves toothed, not deeply divided; calyx with >5 prominent veins, sometimes obscure ... *L. aromatica*

1. Leaves usually in whorls 3-13, occasionally 2-3 nodes with opposite leaves, (2.5)4-12(22) mm long, submerged leaves deeply divided, emersed leaves divided to toothed [2]

2. Stem usually glandular; pedicels (1)3-8 mm in flower, (3)5-12 mm in fruit; bracteoles 1-3.5 mm; corolla tubes 4-5(8) mm long; cleistogamous flowers absent ... *L. indica*

2. Stems usually eglandular; pedicels 0-1.5(2) mm in flower, 0-4 mm in fruit; bracteoles 0(1.5) mm long; corolla tubes 8-10 mm long; submerged cleistogamous flowers present ... *L. sessiliflora*

\****Limnophila aromatica*** (Lam.)Merr.— {AFP}

\****Limnophila indica*** (L.)Druce— {AFP}

\****Limnophila sessiliflora*** Blume— {AFP}

**Linaria** {AFP}

1. Corolla lower and upper lip subequal or one slightly longer; filaments usually hairy proximally; fruit 9-12 mm long ... *L. maroccana*

1. Corolla lower lip greatly exceeding upper lip; filaments glabrous; fruit 2-5 mm long; seeds prismatic with longitudinal ridges [2]

2. Pedicel densely to sparsely glandular-pubescent (hairs to 0.3 mm long), 6-14 mm long in fruit, 2-10 times longer than calyx; corolla spur 0.1-0.5 mm long, shorter than calyx ... *L. floridana*

2. Pedicel glabrous to sparsely glandular-pubescent, in fruit (hairs to 0.1 mm long), 1.8-7(9) mm long in fruit, 0.8-2 times as long as calyx; corolla spur 2-11 mm long, subequal to longer than calyx [3]

3. Corolla (5)8-14 mm long (including spur), spur 2-7 mm long; seed edges sharply angled, faces smooth to obscurely tuberculate ... *L. canadensis*

3. Corolla (11)14-22 mm long (including spur), spur 4.5-11 mm long; seed edges rounded to obscurely angled or dentate, faces densely tuberculate ... *L. texana*

***Linaria canadensis*** (L.)Chaz.— {AFP}

***Linaria floridana*** Chapm.— {AFP}

^ *Linaria maroccana* Hook.f.— {AFP}

***Linaria texana*** Scheele— {AFP}

### **Maurandya** {AFP}

1. Calyx glabrous; corolla with a raised yellow palate ... *M. antirrhiniflora*

1. Calyx glandular-pilose; corolla without a raised palate ... *M. barclaiana*

^ *Maurandya antirrhiniflora* Humb. & Bonpl. ex Willd.— {AFP} Levy & Miami-Dade cos.

^ *Maurandya barclaiana* Lindl.— {AFP} Pasco Co., single collection by J.K. Small in 1925.

### **Mecardonia** {AFP}

1. Stems prostrate to decumbent, often mat-forming; leaves 2-3 times longer than wide; corolla yellow with darker veins; seed radial wall reticulum mamillate ... *M. procumbens*

1. Stems erect; leaves 3.2-7 times longer than wide; corolla white with darker veins; seed radial wall reticulum smooth [2]

2. Branched at the plant base; larger leaves 10-20(25) mm long ... *M. acuminata* subsp. *peninsularis*

2. Branched above the plant base; larger leaves 20-30 mm long [3]

3. Flowering pedicels 10-18 mm long, fruiting pedicels 17-35 mm long ... *M. acuminata* subsp. *acuminata*

3. Flowering pedicels 4-10 mm long, fruiting pedicels 10-18 mm long ... *M. acuminata* subsp. *microphyla*

***Mecardonia acuminata*** (Walter) Small subsp. ***peninsularis*** (Pennell) Rossow— {AFP} Endemic.

***Mecardonia acuminata*** (Walter) Small subsp. ***acuminata***— {AFP}

***Mecardonia acuminata*** (Walter) Small subsp. ***microphyla*** (Raf.) Rossow— {AFP}

\*\* ***Mecardonia procumbens*** (Mill.) Small— {AFP} Nearly throughout; disturbed areas. Probably introduced, the earliest collections from S FL (e.g. Blodgett & Rugel in Key West), progressively spreading northward.

### **Misopates** {AFP}

\* ***Misopates orontium*** (L.) Raf.— {AFP} Escambia Co.

### **Penstemon** {AFP}

1. Stem and sometimes leaves stipitate-glandular ... *P. australis*

1. Stem and leaves eglandular [2]

2. Leaves usually toothed; corolla throat internally with pinkish colored lines; pollen sacs opposite or divergent, navicular, subexplanate, or explanate, dehiscing completely ... *P. laevigatus*

2. Leaves entire to obscurely undulate-crenate; corolla throat internally lacking darkened or colored lines; pollen sacs parallel, saccate, dehiscing incompletely, distal 2/3rd indehiscent ... *P. multiflorus*

***Penstemon australis*** Small— {AFP}

***Penstemon laevigatus*** Aiton— {AFP}

***Penstemon multiflorus*** (Benth.) Chapm. ex Small— {AFP}

### **Plantago** {AFP}

1. Leaves with the blade generally ovate and the base abruptly contracted to a mostly distinct petiole [2]
1. Leaves with the blade linear, lanceolate, oblanceolate, to narrowly obovate, and the blade base attenuate and indistinct from the petiole [3]
2. Floral bracts ovate, 0.5-1 mm long; fruit (2)4-5 mm long, dehiscent near the middle; seeds 5-35 per fruit, 0.5-1 mm long ... *P. major*
2. Floral bracts lanceolate, ca. 2 mm long; fruit 4-6(8) mm long, dehiscent below the middle; seeds 4-5(8) per fruit, 1.5-2 mm long ... *P. rugelii*
3. Plant strongly woolly or lanate ... *P. floccosa*
3. Plant villous, short-pilose, to glabrate [4]
4. Floral bracts conspicuously exerted and much longer than the flowers or fruits ... *P. aristata*
4. Floral bracts subequal to shorter than the flowers or fruits, not exerted [5]
5. Fertile part of scape <1/5 of its total length; floral bracts scarious except near the midrib; sepals appearing as 3, the 2 next to bract united into 1 with a double midvein ... *P. lanceolata*
5. Fertile part of scape >1/5 of its total length; floral bracts scarious only on the margin near the base; sepals 4, free or nearly so [6]
6. Leaves mostly >8 mm wide, 3-15 times longer than wide [7]
6. Leaves mostly <8(10) mm wide, 15-50 times longer than wide
7. Spikes with visible internodes throughout, the flowers sparsely distributed; rachis, bracts, and sepals glabrous to sparsely short-pilose ... *P. sparsiflora*
7. Spikes lacking visible internodes, internodes apparent only at the very base, the flowers densely congested; rachis, bracts, and sepals densely short-pilose ... *P. virginica*
8. Leaves 3-5 mm wide; spike with the flowers densely congested throughout; sepals 3-4 mm long; stamens 4 per flower; seeds 2 per fruit ... *P. wrightiana*
8. Leaves 1-3(4) mm wide; spike with the flowers sparsely distributed at the base; sepals 1-2 mm long; stamens 2 per flower; seeds 4 or 10-25(30) per fruit [9]
9. Leaves 1-3(4) mm wide; seeds 10-25(30) per fruit ... *P. heterophylla*
9. Leaves 1-2 mm wide; seeds 4 per fruit ... *P. pusilla*

***Plantago aristata*** Michx.— {AFP}

\****Plantago floccosa*** Decne.— {AFP}

***Plantago heterophylla*** Nutt.— {AFP}

\****Plantago lanceolata*** L.— {AFP}

\****Plantago major*** L.— {AFP}

***Plantago pusilla*** Nutt.— {AFP}

***Plantago rugelii*** Decne.— {AFP} State Endangered.

***Plantago sparsiflora*** Michx.— {AFP}

***Plantago virginica*** L.— {AFP}

***Plantago wrightiana*** Decne.— {AFP}

## Russelia {AFP}

^ *Russelia equisetiformis* Schltld. & Cham.— {AFP} Springly naturalized, otherwise primarily cultivated.

## Scoparia {AFP}

1. Leaves toothed or entire; corolla white to pale lavender; calyx lobes 4 ... *S. dulcis*

1. Leaves usually pinnatifid or pinnately lobed; corolla yellow to orange-yellow; calyx lobes 5 ... *S. montevidensis* var. *glandulifera*

**Scoparia dulcis** L.— {AFP} Throughout; native or perhaps an early introduction.

\***Scoparia montevidensis** (Spreng.)R.E.Fr. var. **glandulifera** (Fritsch)R.E.Fr.— {AFP}

### Sophronanthe {AFP}

1. Leaves linear 0.7-3 mm wide, margins revolute; corolla salverform, 7-16 mm long ... *S. hispida*

1. Leaves ovate, 4-11 mm wide, margins plane to slightly revolute; corolla campanulate, 5-9 mm long ... *S. pilosa*

**Sophronanthe hispida** Benth. ex Lindl.— {AFP}

**Sophronanthe pilosa** (Michx.)Small— {AFP}

### Stemodia {AFP}

\***Stemodia durantifolia** (L.)Sw.— {AFP}

### Veronica {AFP}

1. Flowers in axillary racemes ... *V. anagallis-aquatica*

1. Flowers in terminal racemes or solitary in distal leaf axils [2]

2. Pedicel shorter than the calyx [3]

2. Pedicel at least 2 times as long as calyx [4]

3. Leaf blade ovate; corolla white ... *V. arvensis*

3. Leaf blade oblanceolate to linear; corolla blue ... *V. peregrina*

4. Leaves palmately 3- to 5-lobed; fruit only slightly notched ... *V. hederifolia*

4. Leaves toothed; fruit usually distinctly notched [5]

5. Mature pedicel 1.5-4 cm long; corolla 8-14 mm wide [6]

5. Mature pedicel 0.6-1.5(2) cm long; corolla 4-8 mm wide [7]

6. Pedicels 2-5 times as long as subtending bract; fruit absent or almost smooth, sinus angle 50–90 ... *V. filiformis*

6. Pedicels 1-2(3) times as long as subtending bract; fruit reticulate with prominent veins, sinus angle (80)90–120(150) ... *V. persica*

7. Calyx lobes 2.2-2.6 mm wide; corolla white to pale pink or pale blue; fruit 2.5-4 mm long, with long glandular hairs only ... *V. agrestis*

7. Calyx 2.6-3.8 mm wide; corolla dark to bright blue (rarely pale or white); fruit 4-6 mm long, with both long and short glandular hairs ... *V. polita*

\***Veronica agrestis** L.— {AFP}

\***Veronica anagallis-aquatica** L.— {AFP}

\***Veronica arvensis** L.— {AFP}

\***Veronica filiformis** Sm.— {AFP}

\***Veronica hederifolia** L.— {AFP}

**Veronica peregrina** L.— {AFP} Throughout.

\***Veronica persica** Poir.— {AFP}

\***Veronica polita** Fr.— {AFP}

### Veronicastrum {AFP}

**Veronicastrum virginicum** (L.)Farw.— {AFP}

### LINDERNIACEAE {AFP}

- 1. Calyx conspicuously winged ... *Torenia*
- 1. Calyx not winged or scarcely so [2]
- 2. Leaf margin strongly aristate-ciliate ... *Bonnaya ciliata*
- 2. Leaf margin entire to toothed [3]
- 3. Sepals and petals 5; stamens 4 and staminodes absent, or stamens 2 and staminodes 2 ...  
*Lindernia*
- 3. Sepals and petals 4; stamens 2, staminodes absent ... *Micranthemum*

### **Bonnaya** {AFP}

\**Bonnaya ciliata* (Colsm.)Spreng.— {AFP} Hillsborough Co.

### **Lindernia** {AFP}

- 1. Plant subscapose, basal leaves rosette-forming, cauline leaves reduced ... *L. monticola*
- 1. Plant scapose, lacking rosettes, cauline leaves not much reduced [2]
- 2. Leaf blades linear-lanceolate to narrowly ovate ... *L. dubia*
- 2. Leaf blades broadly ovate to orbicular ... *L. grandiflora*

*Lindernia dubia* (L.)Pennell— {AFP}

*Lindernia grandiflora* Nutt.— {AFP} Peninsula, eastern panhandle. Nearly endemic (southern GA).

*Lindernia monticola* Nutt.— {AFP}

### **Micranthemum** {AFP}

- 1. Leaf blades elliptic, oblanceolate, to spatulate; corolla longer than the calyx ... *M. glomeratum*
- 1. Leaf blades suborbicular; corolla shorter than the calyx ... *M. umbros*

*Micranthemum glomeratum* (Chapm.)Shinners— {AFP} Endemic.

*Micranthemum umbros* (J.F.Gmel.)S.F.Blake— {AFP}

### **Torenia** {AFP}

- 1. Larger leaves 1-2 cm long; corolla 3-9 mm long ... *T. crustacea*
- 1. Larger leaves 3-5 cm long; corolla 20-30 mm long ... *T. fournieri*

\**Torenia crustacea* (L.)Cham. & Schltldl.— {AFP}

^ *Torenia fournieri* Linden ex E.Fourn.— {AFP} Sparingly naturalized.

## **SCROPHULARIACEAE** {AFP}

- 1. Shrubs or trees [2]
- 1. Herbs [2]
- 2. Leaves alternate; flowers 5-merous ... *Bontia daphnoides*
- 2. Leaves opposite; flowers 4-merous ... *Buddleja*
- 3. Basal leaves rosette-forming, reduced distally; inflorescence a terminal spike or raceme ...  
*Verbascum*
- 3. Basal leaves not rosette-forming, not strongly reduced distally; inflorescence a terminal panicle or flowers axillary [4]
- 4. Leaves sessile, petiole unapparent ... *Capraria biflora*
- 4. Leaves petiolate, the petiole very distinct ... *Scrophularia marilandica*

## Bontia {AFP}

^ *Bontia daphnoides* L.— {AFP} Miami-Dade Co.

## Buddleja {AFP}

1. Leaf blade broadly elliptic, broadly ovate, to suborbicular; inflorescence of axillary cymes, much shorter than the leaves ... *B. indica*

1. Leaf blade ovate-lanceolate to lanceolate; inflorescence a terminal raceme [2]

2. Leaf blade lower surface appressed-pubescent ... *B. lindleyana*

2. Leaf blade lower surface densely white to brown tomentose ... *B. madagascariensis*

^ *Buddleja indica* Lam.— {AFP} Sparingly naturalized.

^ *Buddleja lindleyana* Fortune ex Lindl.— {AFP} Sparingly naturalized.

^ *Buddleja madagascariensis* Lam.— {AFP} Sparingly naturalized.

## Capraria {AFP}

*Capraria biflora* L.— {AFP}

## Scrophularia {AFP}

*Scrophularia marilandica* L.— {AFP}

## Verbascum {AFP}

1. Stems and leaves densely villous-tomentose, the trichomes stellate ... *V. thapsus*

1. Stems and leaves glabrous or stipitate-glandular [2]

2. Stems and leaves stipitate-glandular; bracteoles 2; pedicels 0-3 mm long ... *V. blattaria*

2. Stems and leaves glabrous to glabrate; bracteoles absent; pedicels 5-10(15) mm long ... *V. virgatum*

\**Verbascum blattaria* L.— {AFP}

\**Verbascum thapsus* L.— {AFP}

\**Verbascum virgatum* Stokes— {AFP}

## ACANTHACEAE {AFP}

1. Pneumatophores present (erect, aboveground, arising from subterranean roots below); leaf blade upper surface salt-excreting, densely gray-pubescent on the underside; Avicennioideae ... *Avicennia germinans*

1. Pneumatophores absent; leaf blade not salt-excreting, glabrate to pubescent on the underside; not a mangrove [2]

2. Leaf blades with cystoliths, or without cystoliths and anthers monothealous; seed subtended by a hooked, persistent retinacula; Acanthoideae ... Key A

2. Leaf blades without cystoliths; seed without a retinacula [3]

3. Vines or shrubs; inflorescence a fascicle, raceme, or solitary flower; flower subtended by clasping or connate foliaceous bracteoles; Thunbergioideae ... *Thunbergia*

3. Herbs; inflorescence a many-flowered spike; flower not subtended by large foliaceous bracteoles; Nelsonioideae [4]

4. Leaves primarily basal and rosette-forming; peduncle with numerous stiff, clasping, scale-like bracts below the flower spike ... *Elytraria caroliniensis*

4. Leaves cauline; peduncle lacking numerous scale-like bracts ... *Nelsonia canescens*

Key A: Acanthoideae

1. Leaves primarily basal and rosette-forming, without cystoliths; stamens 4, monothealous; Acantheae ... *Stenandrium dulce*

1. Leaves basal or caulilne, with or without a rosette, with cystoliths; stamens 2 or 4, if 4 then at least 2 bithealous [2]

2. Corolla with left-contort aestivation in bud; Ruellieae ... Key B

2. Corolla with quincuncial or ascending-cochlear aestivation [3]

3. Shrubs, sometimes with spines or prickly sepals; outer pair of sepals enlarged and foliaceous; corolla with quincuncial aestivation; Barlerieae ... *Barleria*

3. Herbs or shrubs, lacking spines or prickles; outer pair of sepals foliaceous or not; corolla with ascending-cochlear aestivation; Justiceae ... Key C

Key B: Acanthoideae, Ruellieae

1. Larger leaves >10 cm long; flower subtended by foliaceous bracts with pale surfaces and dark veins and edges; stamens 2, staminodes 2 ... *Eranthemum pulchellum*

1. Larger leaves 1-20 cm long; foliaceous bracts if present not as above; stamens 4 [2]

2. Anther thecae (at least one) with basal awns or appendages ... *Dyschoriste*

2. Anther thecae without basal awns or appendages [3]

3. Corolla bilabiate, usually <10 mm long; mostly of aquatic or hydric habitats, sometimes submerged ... *Hygrophila*

3. Corolla subactinomorphic, usually >10 mm long; mostly of xeric to hydric terrestrial habitats ... *Ruellia*

Key C: Acanthoideae, Justiceae

1. Shrubs; stamens 2, staminodes 2 [2]

1. Herbs, sometimes suffrutescent; stamens 2 and staminodes absent, or stamens 4, rarely stamens 2 and staminodes 2 [3]

2. Leaves often variegated; corolla bilabiate with the upper lobe erect and exerted and the lower lobes reflexed ... *Graptophyllum pictum*

2. Leaves not variegated; corolla salverform, the tube 15-25 mm long, the lobes 2-5 mm long ... *Odontonema*

3. Corolla 8-35 mm long; stamens 4 ... *Asystasia*

3. Corolla 2-50 mm long; stamens 2 [4]

4. Basal and proximal leaves petiolate, distal leaves often sessile to subsessile; corolla salverform, the tube much longer than the lobes ... *Pseuderanthemum*

4. Leaves and petioles variable; corolla bilabiate, funnellform, or subsalverform and tube not much longer than the lobes [5]

5. Corolla resupinate with ca. 180 degree twist in corolla tube, the more heavily spotted and lobate lip positioned above, the 2 stamens held closer to the bottom of the flower [6]

5. Corolla not resupinate, the often lobate lip positioned below, the 2 stamens often held closer to the upper corolla part [7]

6. Leaves not variegated; anthers bithealous ... *Dicliptera*

6. Leaves often variegated; anthers monothealous ... *Hypoestes phyllostachya*

7. Anther thecae unevenly attached with one theca above the other; corolla white, pink, purple, reddish, or orange ... *Justicia*

7. Anther thecae evenly attached and parallel; corolla white or mostly so [8]

8. Leaves 1-3 cm long; inflorescence of 1-3 axillary flowers ... *Carlowrightia texana*

8. Leaves 4-12 cm long; inflorescence a spike with foliaceous bracts ... *Yeatesia viridiflora*

## Asystasia {AFP}

1. Calyx lobes 6-9 mm long in flower; corolla cream, yellow, pinkish, to violet, the tube 2.5-3.5 cm long; anther ca. 3 mm long; style 15-22 mm long; fruit 3.5-4 mm long ... *A. gangetica*

1. Calyx lobes 4-6 mm long in flower; corolla white with purple spot on lower lip, the tube 0.8-1.8 cm long; anther ca. 1.5 mm long; style 5-10 mm long; fruit 1.5-2.5 mm long ... *A. intrusa*

\**Asystasia gangetica* (L.) T. Anderson — {AFP}

\**Asystasia intrusa* (Forssk.) Blume — {AFP} According to Westaway et al. (2016), unpublished genetic analyses strongly support this taxon as distinct. Further, putatively, this taxon is diploid, whereas *A. gangetica* s.str. is tetraploid. Treated as a subspecies of *A. gangetica*, the epithet is subsp. *micrantha*.

## Avicennia {AFP}

### Key to native mangrove species

1. Bark of longitudinal strips somewhat interwoven; petiole with 2 glands near the apex; leaves alternate, the lower surface with domatia along the midrib; flowers densely aggregated into a globose head; petals absent; fruiting structure cone-like, a dense aggregate of scaly fruits ... *Conocarpus erectus*

*Conocarpus erectus*

1. Bark various; petiole with or without glands; leaves opposite, without domatia (one species with pits near the margin); flowers individually apparent and spaced from one another; petals present; fruit solitary, not aggregated [2]

2. Pneumatophores present (erect, aboveground, arising from subterranean roots below); bark of trunk becoming cracked with fissures forming smallish blocks; young stems and inflorescence grayish scurfy-pubescent; leaf blade upper surface often covered with salt crystals from excretions, the lower surface grayish scurfy-pubescent; corolla 4-lobed, white with yellow throat; fruit an asymmetric smooth (but hairy) capsule ... *Avicennia germinans*

2. Pneumatophores absent; bark of trunk smooth or becoming longitudinally striate; leaf blade without noticeable salt crystals or salt excretion very minute, the lower surface glabrate; corolla 4- or 5-merous; fruit symmetric and ribbed or with a protruding hypocotyl [3]

3. Prop roots absent; bark of longitudinal strips; stipules absent; petiole with 2 glands near the apex; leaf blade with pits near the margin (likely for salt excretion); calyx 5-lobed, tubular, greenish; petals 5, minute; fruit greenish, compressed, roughly obovate, without a protruding hypocotyl while still attached to the tree ... *Laguncularia racemosa*

3. Prop roots present (root arising from trunk aboveground and descending into soil); bark mostly remaining smooth or becoming lightly cracked in age; interpetiolar stipules enclosing the developing leaf, deciduous; petiole lacking glands; leaf blade without pits; calyx 4-lobed, with spreading lobes (only slightly tubular at the base), yellowish; petals 4, conspicuous, villous; fruit brownish leathery-woody, with a green to reddish brown protruding and descending hypocotyl developing and becoming much longer than the fruit while still attached to the tree ... *Rhizophora mangle*

*Avicennia germinans* (L.) L. — {AFP}

## Barleria {AFP}

1. Stem nodes with spines; corolla yellow or orange ... *B. lupulina*

1. Stem nodes lacking spines; corolla reddish, bluish, or purplish [2]

2. Outer sepals with prickly margins; corolla purplish or bluish ... *B. cristata*



2. Outer sepals entire; corolla reddish ... *B. repens*

\**Barleria cristata* L.— {AFP}

\**Barleria lupulina* Lindl.— {AFP}

\**Barleria repens* Nees— {AFP}

### Carlowrightia {AFP}

\**Carlowrightia texana* Henrickson & T.F.Daniel— {AFP}

### Crossandra

^ *Crossandra infundibuliformis* (L.) Nees—

### Dicliptera {AFP}

1. Bracteoles broadly obovate to spatulate-oblong, 4-7 mm long; corolla white, pink, to purple, 15-20 mm long ... *D. brachiata*

1. Bracteoles linear-lanceolate to spatulate-mucronate, 8-15 mm long; corolla pale to dark red, 20-25 mm long ... *D. sexangularis*

*Dicliptera brachiata* Spreng.— {AFP}

*Dicliptera sexangularis* (L.) Juss.— {AFP}

### Dyschoriste {AFP}

1. Larger leaves 6-18(25) mm long, 2-4(5) mm wide ... *D. angusta*

1. Larger leaves (16)19-45 mm long, (5)6-20 mm wide [2]

2. Internodes typically longer than to subequal to the adjacent leaves; leaf blade base abruptly contracted to a fairly distinct petiole; calyx 7-11 mm long; corolla 9-15 mm long, lobes 3-5 mm long ... *D. humistrata*

2. Internodes typically shorter than to subequal to the adjacent leaves; leaf blade base generally gradually narrowed to a short, indistinct petiole; calyx 14-18 mm long; corolla 24-27 mm long, lobes 5-10 mm long ... *D. oblongifolia*

*Dyschoriste angusta* (A.Gray) Small— {AFP}

*Dyschoriste humistrata* (Michx.) Kuntze— {AFP}

*Dyschoriste oblongifolia* (Michx.) Kuntze— {AFP}

### Elytraria {AFP}

1. Leaves 2-11 mm wide, 8.5-40 times longer than wide ... *E. caroliniensis* var. *angustifolia*

1. Leaves (8)10-100 mm wide, 1.5-10 times longer than wide ... *E. caroliniensis* var. *caroliniensis*

*Elytraria caroliniensis* (J.F.Gmel.) Pers. var. *angustifolia* (Fernald) S.F. Blake— {AFP} Because of morphological and geographical overlap, this taxon was not recognized by Daniel (2013).

*Elytraria caroliniensis* (J.F.Gmel.) Pers. var. *caroliniensis*— {AFP}

### Eranthemum {AFP}

^ *Eranthemum pulchellum* Andrews— {AFP}

### Fittonia

^ *Fittonia albivenis* (Lindl. ex Veitch.) Brummitt—

## Graptophyllum {AFP}

^ *Graptophyllum pictum* (L.) Griff.— {AFP}

## Hygrophila {AFP}

1. Emergent leaves coarsely dentate, the submerged leaves pinnately dissected ... *H. difformis*

1. Emergent and submerged leaves entire to subtly undulate [2]

2. Petiole usually distinct from the blade, 1-6 cm long; inflorescence pedunculate; flowers pedicellate ... *H. corymbosa*

2. Petiole absent or grading into the blade, 0-1 cm long; inflorescence and flowers sessile to subsessile [3]

3. Larger leaves 6-20 cm long, mostly lanceolate to oblanceolate and the apex subacute to acuminate; stamens 4 per flower ... *H. costata*

3. Larger leaves 1-6 cm long, mostly elliptic to elliptic-oblanceolate and the apex rounded to obtuse; stamens 2 per flower ... *H. polysperma*

\**Hygrophila corymbosa* (Blume) Lindau— {AFP}

*Hygrophila costata* Nees et al.— {AFP}

\**Hygrophila difformis* (L.f.) Blume— {AFP}

\**Hygrophila polysperma* (Roxb.) T. Anderson— {AFP}

## Hypoestes {AFP}

^ *Hypoestes phyllostachya* Baker— {AFP}

## Justicia {AFP}

1. Bracts enlarged, foliaceous and overlapping, concealing flower buds ... *J. brandegeana*

1. Bracts small, not foliaceous, not overlapping, not concealing flower buds [2]

2. Corolla orange, 3.5-5 cm long ... *J. spicigera*

2. Corolla white, pink, purple, to reddish, 0.8-3 cm long [3]

3. Stem densely pubescent and glandular ... *J. pringlei*

3. Stem glabrous to glabrate, eglandular [4]

4. Inflorescence a dense capitate spike, internodes not visible or scarcely apparent ... *J. americana*

4. Inflorescence an elongate spike or panicle, the internodes plainly apparent [5]

5. Inflorescence usually a panicle, the proximal internodes longer than the adjacent calyx [6]

5. Inflorescence a spike, the proximal internodes subequal to shorter than the adjacent calyx [7]

6. Inflorescence branches verticillate to subverticillate; corolla 2-6 mm long; fruit 4-5 mm long ... *J. comata*

6. Inflorescence branches opposite or alternate; corolla 8-9 mm long; fruit 7-8 mm long ... *J. pectoralis*

7. Leaves narrowly lanceolate; corolla purple, 15-30 mm long [8]

7. Leaves lanceolate to ovate; corolla pale lavender to white, 8-13 mm long [9]

8. Leaves chartaceous ... *J. angusta*

8. Leaves fleshy ... *J. crassifolia*

9. Leaves narrowly lanceolate; flowers usually secund ... *J. ovata* var. *lanceolata*

9. Leaves lanceolate to ovate; flowers usually not secund ... *J. ovata* var. *ovata*

*Justicia americana* (L.) Vahl— {AFP}

*Justicia angusta* (Chapm.) Small— {AFP}

^ *Justicia aurea*—

\* *Justicia brandegeana* Wassh. & L.B.Sm.— {AFP}

^ *Justicia carnea* Schltld.—

\* *Justicia comata* (L.)Lam.— {AFP}

*Justicia crassifolia* (Chapm.)Chapm. ex Small— {AFP} Endemic. State Endangered.

*Justicia ovata* (Walter)Lindau var. *lanceolata* (Chapm.)R.W.Long— {AFP}

*Justicia ovata* (Walter)Lindau var. *ovata*— {AFP}

\* *Justicia pectoralis* Jacq.— {AFP}

*Justicia pringlei* B.L.Rob.— {AFP} Federally Endangered. State Endangered.

\* *Justicia spicigera* Schltld.— {AFP}

## Megaskepasma

^ *Megaskepasma erythrochlamys* Lindau—

## Nelsonia {AFP}

\* *Nelsonia canescens* (Lam.)Spreng.— {AFP} Sarasota Co.

## Odontonema {AFP}

1. Rachis densely and evenly pubescent; corolla pink to purple, subzygomorphic; pollen 3-colporate ... O. callistachyum

1. Rachis glabrous, or sparsely pubescent, the hairs sometimes concentrated in lines; calyx lobes 1.5-4 mm long; corolla red, sometimes slightly pinkish, subactinomorphic, the lower lip spreading [2]

2. Inflorescence with pedunculate dichasia, alternate or opposite at nodes, the rachis evenly pubescent with erect, flexuous, to antrorse hairs 0.05-0.3(0.5) mm long; corolla tube 2.5-4 mm at mid-point; filament 1.5-5 mm long; staminodes 0.5-1.3 mm long; pollen 4-colporate ... O. cuspidatum

2. Inflorescence with sessile dichasia, at least some whorled at nodes, the rachis pubescent with flexuose, retrorse, to appressed hairs 0.2-1 mm long with the hairs often concentrated in lines; corolla tube 3-6 mm at mid-point; filaments 5-15 mm long; staminodes 1-4 mm long; pollen 3-colporate ... O. tubaeforme

^ *Odontonema callistachyum* (Schltld. & Cham.)Kuntze—

^ *Odontonema cuspidatum* (Nees)Kuntze— {AFP}

^ *Odontonema tubaeforme* (Bertol.)Kuntze—

## Pachystachys

^ *Pachystachys lutea* Nees—

## Pseuderanthemum {AFP}

1. Basal leaves with a winged petiole and a cordate blade base, the distal leaves sessile to subsessile; corolla pink to purple ... *Pseuderanthemum alatum*

1. Basal leaves with a cuneate or attenuate blade base grading into a petiole, distal leaves sessile to subsessile; corolla usually white, often pink-spotted, sometimes pinkish or blue-violet ... *Pseuderanthemum variabile*

\* *Pseuderanthemum alatum* (Nees)Radlk. ex Lindau— {AFP}

^ *Pseuderanthemum laxiflorum* (A.Gray)F.T.Hubb.—

\**Pseuderanthemum variabile* (R.Br.)Radlk. ex Lindau— {AFP}

## Ruellia {AFP}

1. Floral bracts enlarged, overlapping, foliaceous, concealing the flower buds ... *R. blechum*
1. Floral bracts not densely overlapping, not concealing the flower buds [2]
2. Inflorescence pedunculate, elongate and many-flowered, the bracts  $<1/6$  as long as the subtending leaves, bracts not foliaceous [3]
2. Inflorescence sessile or subsessile or generally appearing so, few-flowered, the bracts foliaceous and  $>1/6$  as long as the subtending leaves [5]
3. Corolla red to orangish red ... *R. brevifolia*
3. Corolla bluish, purple, pink, to white [4]
4. Leaves 1.6-3.8 times longer than wide; distal inflorescence branches and calyx densely stipitate-glandular ... *R. ciliatiflora*
4. Leaves 3.5-22 times longer than wide; distal inflorescence branches and calyx eglandular to sparsely stipitate-glandular ... *R. simplex*
5. Branches straight or nearly so, mostly at 30-60 angles, the flowers on a distinct branch from the main stem ... *R. pedunculata* subsp. *pinetorum*
5. Branches mostly irregular or not straight, the flowers on the main stem or clustered and nearly sessile along the main stem [6]
6. Calyx 25-45 mm long; corolla white often with pinkish lines or spots, 6-11 cm long, the tube 4.5-8 cm long ... *R. noctiflora*
6. Calyx 13-25 mm long; corolla bluish, purple, to pink, rarely white, 2-5 cm long, the tube 1-3 cm long [7]
7. Plant leafy, the internodes mostly shorter than the adjacent leaves ... *R. dipteracanthus*
7. Plant leafy, the internodes mostly subequal to longer than the adjacent leaves, or subscapose with few leaves [8]
8. Plant  $<20$  cm tall or long, with 5 or less nodes, usually unbranched, copiously villous-hirsute; leaves chartaceous ... *R. ciliosa*
8. Plant 5-100 cm tall or long, with 4-20+ nodes, often branches, glabrate to villous-hirsute; leaves chartaceous to semi-succulent [9]
9. Plant sparingly pubescent, erect, to 100 cm tall; leaf blades chartaceous, veins mostly green ... *R. caroliniensis*
9. Plant glabrate to villous-hirsute at least on young parts, trailing or erect to 40 cm tall; leaf blades semi-succulent, veins green to reddish; of southern Florida [10]
10. Plant glabrate to sparingly pubescent; leaf veins usually reddish ... *R. succulenta*
10. Plant mostly villous-hirsute, at least on young parts; leaf veins greenish ... *R. caroliniensis* var. *heteromorpha*

\**Ruellia blechum* L.— {AFP}

^ *Ruellia brevifolia* (Pohl)C.Ezcurra— {AFP}

*Ruellia caroliniensis* (J.F.Gmel.)Steud.— {AFP}

\**Ruellia ciliatiflora* Hook.— {AFP}

*Ruellia ciliosa* Pursh— {AFP}

^ *Ruellia dipteracanthus* (Nees)Hemsl.— {AFP}

*Ruellia noctiflora* (Nees)A.Gray— {AFP} State Endangered.

*Ruellia pedunculata* Torr. ex A.Gray subsp. *pinetorum* (Fernald)R.W.Long— {AFP}

\**Ruellia simplex* C.Wright— {AFP}

*Ruellia succulenta* Small— {AFP} Endemic.

## Sanchezia

^ *Sanchezia tigrina* Leonard—

## Stenandrium {AFP}

**Stenandrium dulce** (Cav.) Nees— {AFP} A wide-ranging species, those in Florida have been called var. *floridanum*, leaf blades ovate to oblong-ovate, 30-40 mm long, 12-30 mm wide; peduncles 4-7 cm long; inflorescence spike (excluding corolla) >20 mm long. And var. *dulce* has leaf blades oblong-elliptic, 15-30 mm long, 7-12 mm wide; peduncles 1-4 cm long; inflorescence spike (excluding corolla) to 20 mm long.

## Strobilanthes {AFP}

1. Plant not rosulate, leafy throughout ... *S. alternata*

1. Plant subrosulate, leaves mostly basal ... *S. reptans*

\***Strobilanthes alternata** (Burm.f.) Moylan ex J.R.I. Wood— {AFP}

^ *Strobilanthes auriculata* Nees—

^ *Strobilanthes hamiltoniana* (Steud.) Bosser & Heine—

\***Strobilanthes reptans** (G.Forst.) Moylan ex Y.F. Deng & J.R.I. Wood— {AFP}

## Thunbergia {AFP}

1. Erect or scandent shrub; leaf blade base acute to cuneate ... *T. erecta*

1. Trailing or climbing vines; leaf blade base subtruncate to cordate [2]

2. Petioles winged; corolla lobes yellow to orange, occasionally white, throat dark purplish ... *T. alata*

2. Petioles not winged; corolla lobes white to bluish, throat usually pale, yellow, or green, or corolla yellow and red [3]

3. Leaf blades strongly 3-veined, additional basal veins obscure; sepals reddish; corolla yellow and red ... *T. mysorensis*

3. Leaf blades palmately 3- to 7-veined, the basal veins sometimes slightly weaker; sepals greenish; corolla lobes white to bluish, throat usually pale, yellow, or green [4]

4. Leaf blades 4-10 cm long; floral bracts 12-15 mm long; corolla 2-3 cm long, 3-5 cm wide, the lobes white; fruit 7-9 mm wide, with a beak 10-15 mm long ... *T. fragrans*

4. Leaf blades 6-22 cm long; floral bracts 25-40 mm long; corolla 5-8 cm long, 6-8 cm wide, the lobes white, pink, to bluish; fruit 14-18 mm wide, with a beak 15-25 mm long [5]

5. Stems and leaves pubescent or scabrid; leaf blades broadly ovate-cordate, 0.8-1.2 times as long as wide; calyx truncate ... *T. grandiflora*

5. Stems and leaves glabrate; leaf blades lanceolate to ovate, 1.4-2 times as long as wide ... *T. laurifolia*

\***Thunbergia alata** Bojer ex Sims— {AFP}

^ *Thunbergia erecta* (Benth.) T. Anderson— {AFP}

\***Thunbergia fragrans** Roxb.— {AFP}

^ *Thunbergia grandiflora* Roxb.— {AFP}

^ *Thunbergia laurifolia* Lindl.—

^ *Thunbergia mysorensis* Roxb.—

## Yeatesia {AFP}

**Yeatesia viridiflora** (Nees) Small— {AFP}

## PEDALIACEAE {AFP}

### *Sesamum* {AFP}

1. Leaf blades ovate, oblong, or rarely obovate; basal leaf blades often >7 cm long or wide, sometimes deeply 3-lobed or occasionally leaves trifoliolate, if <7 cm long then shallowly 3-lobed or not broadly subcordate; flowers with a staminode; fruit not or hardly subtruncate at apex, without angular horns but with a conspicuous terminal beak ... *Sesamum indicum*

1. Leaf blades broadly ovate-subcordate to less often rotund, elliptical, or slightly obovate; basal leaf blades <7 cm long or wide, sometimes broadly subcordate or only shallowly 3-lobed; flowers without a staminode; fruit subtruncate at apex, with a subdeltoid to linear horn at each of the outer edges of the apex, terminal beak inconspicuous or absent ... *Sesamum trilobum*

\**Sesamum indicum* L.— {AFP}

\**Sesamum trilobum* (Bernh.)Byng & Christenh.— {AFP}

## LAMIACEAE {AFP}

1. Vines, subshrubs, shrubs, or trees, woody ... Key A

1. Herbs to subshrubs, not woody, sometimes suffrutescent [2]

2. Calyx strongly bilabiate, the upper part of calyx forming a cap or flap, entire to obscurely lobed [3]

2. Calyx bilabiate or not, the upper part of calyx not forming a cap or flap, often lobed and with acute apices [4]

3. Calyx of an upper and lower lobe, the upper part often with a protuberance, the calyx mouth closing (usually completely so) during fruit maturation (before dehiscing) ... *Scutellaria*

3. Calyx lower lip distinctly 3-lobed, the upper lacking a protuberance, the mouth remaining wide open and not closing ... *Ocimum*

4. Fertile stamens 2 ... Key B

4. Fertile stamens 4 ... Key C

Key A: woody vines, shrubs, trees

1. Leaves compound, usually at least some; leaf blade lower surface and calyx canescent ... *Vitex*

1. Leaves simple or 1-foliolate; leaf blade lower surface and calyx glabrous, pubescent, or canescent [2]

2. Fruit a schizocarp [3]

2. Fruit a drupe [6]

3. Leaf blades 1-15 cm wide ... *Coleus*

3. Leaf blades 0.1-1 cm wide [4]

4. Inflorescence spiciform, the pedicels, calyx, and flower buds hidden by the bracts ... *Piloblephis rigida*)

4. Inflorescence racemiform or paniculiform, the pedicels (if present), calyx, and flower buds visible [5]

5. Anthers with a spur-like or horn-like appendage; plants generally glabrate ... *Dicerandra*

5. Anthers lacking an appendage; plants glabrate to densely pubescent [6]

6. Lower surface of leaves glabrate or with erect hairs; stigma branches distinctly unequal ... *Calamintha*

6. Lower surface of leaves with appressed hairs; stigma branches subequal ... *Conradina*

7. Corolla 2-5 mm long [8]

- 7. Corolla 5-40 mm long [10]
- 8. Leaves with stellate hairs ... *Callicarpa americana*
- 8. Leaves with simple hairs or glabrous [9]
- 9. Leaf blades elliptic to lanceolate, entire ... *Petitia domingensis*
- 9. Leaf blades broadly ovate to ovate, entire to toothed ... *Premna odorata*
- 10. Leaf blade pinnately veined, lacking a basal pair of lateral veins; fertile stamens 2 ... *Cornutia*
- 10. Leaf blade pinni-palmately veined, with a basal pair of lateral veins extending to near or beyond mid-blade [11]
- 11. Calyx disc-shaped and spreading, forming a broad shield, brightly colored orange to reddish, lacking any discernible lobes ... *Holmskioldia sanguinea*
- 11. Calyx not disc-shaped or shield-like [12]
- 12. Trees; leaf blade broadly ovate; corolla yellow and reddish ... *Gmelina arborea*
- 12. Vines or shrubs; leaf blade linear, elliptic, lanceolate, to ovate; corolla white, pink, red, to purple [13]
- 13. Corolla 10-150 mm long; fruiting calyx usually larger than the fruit, brightly colored and contrasting with the dark fruit ... *Clerodendrum*
- 13. Corolla 5-10 mm long; fruiting calyx ... *Volkameria glabra*

Key B: herbs, fertile stamens 2

- 1. Flower clusters in spiciform or racemiform inflorescences with reduced leaves [2]
- 1. Flower clusters in the axils of well-developed leaves [3]
- 2. Corolla yellow, the lower lip fringed ... *Collinsonia*
- 2. Corolla blue, lavender, red, or white, the lower lip not fringed ... *Salvia*
- 3. Flower clusters subtended by large, colored or whitish bracts ... *Monarda*
- 3. Flower clusters lacking colored bracts [4]
- 4. Flowers sessile; calyx actinomorphic or nearly so ... *Lycopus*
- 4. Flowers pedicellate; calyx 2-lipped [5]
- 5. Stem with retrorse hairs; leaves linear to narrowly elliptic, the margin entire ... *Hedeoma hispida*
- 5. Stem with erect hairs; leaves ovate, the margin toothed ... *Stachydeoma graveolens*

Key C: herbs, fertile stamens 4

- 1. Flowers in a pedunculate dense, involucre head of numerous flowers, pedicels absent or unapparent [2]
- 1. Flowers in pedunculate or sessile spikes (sometimes interrupted), racemes, or cymes, sometimes with pedicellate flowers, or in sessile axillary clusters [3]
- 2. Pedunculate inflorescence heads arising from leaf axils; involucre bracts spreading to descending; calyx slightly oblique at mouth, 2-lobed, lobes subequal ... *Hyptis*
- 2. Pedunculate inflorescence heads terminating stems; involucre bracts tightly appressed; calyx bilabiate, the lower lip 2-lobed ... *Macbridea alba*
- 3. Flowers in axillary clusters or solitary in the axils [4]
- 3. Flowers in terminal racemes, cymes, or spikes (these sometimes interrupted and appearing axillary but in the axils of reduced leaves or bracts distinctly dissimilar from cauline leaves) racemes, or cymes [7]
- 4. Leaves palmately lobed with 3-5 lobes, the lobes often pinnatifid or lobed ... *Leonurus japonicus*
- 4. Leaves unlobed [5]
- 5. Flowers solitary in the leaf axils, pedicellate, the pedicel as long or longer than the flower ... *Clinopodium brownei*

- 5. Flowers 1-many in the leaf axils, sessile to short-pedicellate, the pedicel shorter than the flower [6]
- 6. Cauline and bracteal leaves petiolate, petioles not strongly reduced distally ... *Glechoma hederacea*
- 6. Cauline leaves sessile or petiolate, distal bracteal leaves sessile or short-petiolate and the petioles distinctly reduced distally relative to the cauline leaves ... *Lamium*
- 7. Inflorescence of umbelliform, congested cymes ... *Pycnanthemum*
- 7. Inflorescence of racemes or spikes, sometimes paniculiform [8]
- 8. Corollas orange ... *Leonotis nepetifolia*
- 8. Corollas not orange [9]
- 9. Corolla appearing 1-lipped, with 2 proximal lobes and an exerted 3-lobed lip ... *Teucrium*
- 9. Corolla bilabiate [10]
- 10. Calyx of 5 subequal lobes [11]
- 10. Calyx bilabiate [16]
- 11. Flowers solitary in the axil of each bract ... *Physostegia*
- 11. Flowers many in the axil of each bract [12]
- 12. Corolla lower lip of 3 subequal lobes; plant usually pleasantly fragrant ... *Mentha*
- 12. Corolla lower lip with the middle lobe larger than the lateral ones; plant typically obscurely aromatic or not distinctly pleasantly fragrant [13]
- 13. Annual or perennial with rhizomes or tubers; middle lobe of lower lip plane or nearly so ... *Stachys*
- 13. Annual or perennial, without rhizomes or tubers; middle lobe of lower lip saccate [14]
- 14. Flower clusters in sessile axillary fascicles (flowers may be pedicellate) ... *Condea*
- 14. Flower clusters of short-pedunculate cymes, sometimes densely clustered and spike-like [15]
- 15. Stem scabrid; calyx lacking tufts of white hairs between the lobes ... *Cantinoa*
- 15. Stem pubescent; calyx with short tufts of white hairs between the lobes ... *Mesosphaerum*
- 16. Lower lip of the corolla fimbriate [17]
- 16. Lower lip of corolla not fimbriate [18]
- 17. Flowers pedicellate, the bracts not concealing the flower bud ... *Collinsonia*
- 17. Flowers sessile, the bracts foliaceous and concealing the flower bud ... *Prunella vulgaris*
- 18. Stamens included [19]
- 18. Stamens exerted [20]
- 19. Leaf blades 1-3.5 cm long; fruit smooth ... *Clinopodium*
- 19. Leaf blades 3.5-14 cm long; fruit reticulate ... *Perilla frutescens*
- 20. Stamens downwardly curved, held atop the flower ... *Trichostema*
- 20. Stamens straight to upcurved [21]
- 21. Leaves linear and entire ... *Dicerandra*
- 21. Leaves not linear, toothed [22]
- 22. Bracts foliaceous, exceeding to subequal to the flowers; ... *Ajuga reptans*
- 22. Bracts minute ... *Coleus*

### **Ajuga {AFP}**

\**Ajuga reptans* L.— {AFP} Leon Co.

### **Calamintha {AFP}**

- 1. Leaves mostly distinctly petiolate, glabrate, the petiole 1.5-5(8) mm long, the blade toothed (usually at least some, sometimes obscurely so) to entire, margins not revolute, obscurely



punctate, the lower surface with distinct secondary veins; calyx (including teeth) 4-6 mm long ... *C. georgiana*

1. Leaves mostly subsessile, densely pubescent to glabrate, the petiole 0-1(2.5) mm long, the blade strongly punctate and often revolute, obscurely to strongly punctate, the lower surface with obscure to unapparent secondary veins; calyx (including teeth) 6-9 mm long [2]

2. Leaves mildly revolute to not revolute, mostly narrowly obovate, pubescent to glabrate; calyx (including teeth) (8)9-14(18) mm long; corolla 27-50 mm long, red or yellow ... *C. coccinea*

2. Leaves revolute (usually at least some), mostly narrowly obovate to linear, densely pubescent; calyx (including teeth) 6-9 mm long; corolla 10-20 mm long, white to pink or lavender [3]

3. Leaves toothed (usually at least some, sometimes obscurely so) or entire, mostly narrowly obovate to narrowly oblanceolate and tapered at the base or nearly petiolate ... *C. dentata*

3. Leaves entire, usually nearly linear to narrowly oblong-lanceolate without a tapered base ... *C. ashei*

***Calamintha ashei*** (Weath.)Shinners— {AFP} State Threatened.

***Calamintha coccinea*** (Nutt. ex Hook.)Benth.— {AFP}

***Calamintha dentata*** Chapm.— {AFP} State Threatened.

***Calamintha georgiana*** (R.M.Harper)Shinners— {AFP} State Endangered.

### **Callicarpa** {AFP}

***Callicarpa americana*** L.— {AFP}

### **Cantinoa** {AFP}

1. Leaf blades lanceolate to ovate-lanceolate; inflorescence a dense spike of cymes, internodes unapparent (*Hyptis spicigera*) ... *C. americana*

1. Leaf blades ovate; inflorescence of separated cymes, internodes long and obvious ... *C. mutabilis*

\****Cantinoa americana*** (Aubl.)Harley & J.F.B.Pastore— {AFP}

\****Cantinoa mutabilis*** (Rich.)Harley & J.F.B.Pastore— {AFP}

### **Clerodendrum** {AFP}

1. Leaf blades (1.5-)2-4.5 times longer than wide, linear-elliptic, oblong-ovate, to ovate, the base generally acute to truncate [2]

1. Leaf blades 0.9-1.5(-2) times longer than wide, deltoid-ovate, broadly ovate, to ovate, the base generally cordate to truncate (sometimes narrowed at a broadly obtuse angle) [5]

2. Leaves usually whorled, 3-5 per node, the blades 3-4.5 times longer than wide, linear-elliptic to elliptic-oblong-lanceolate; fertile part of stem (inflorescence) 6-35 cm long ... *C. indicum*

2. Leaves usually opposite, 2 per node, the blades (1.5-)2-3.3 times longer than wide, narrowly elliptic-lanceolate, oblong-ovate, to ovate; fertile part of stem (inflorescence) 2-5 cm long [3]

3. Leaf blades 13-30 cm long, at least the larger ones, the underside usually purple; peduncles much shorter than the flowers; calyx lobes shorter to subequal to the calyx tube; corolla 8-10 cm long ... *C. quadriloculare*

3. Leaf blades (3-)5-16 cm long, the underside usually green; peduncles longer to subequal to the flowers; calyx lobes longer than the calyx tube; corolla 1-2 cm long [4]

4. Calyx light pink to red ... *C. ×speciosum*

4. Calyx white ... *C. thomsoniae*
5. Leaf blade distinctly 3-5-lobed ... *C. paniculatum*
5. Leaf blade unlobed [6]
6. Leaf blade entire to obscurely dentate, the base acute to truncate ... *C. trichotomum*
6. Leaf blade dentate (sometimes irregularly or sparsely dentate) to crenate-dentate (rarely entire), the base usually cordate on at least some leaves (sometimes obscurely cordate, truncate, to broadly obtuse-angled) [7]
7. Inflorescence compact, umbelliform to hemispheric, the flowers densely congested, the pedicels nearly indiscernible [8]
7. Inflorescence spreading to elongate, paniculiform, the flowers relatively spread or in spaced clusters, the pedicels generally discernible [9]
8. Flowers normal; calyx 3-16 mm long, the lobes narrowly deltoid to deltoid; corolla pink, red, to purple ... *C. bungei*
8. Flower normal, double, or irregular like a tea rose; calyx 15-25 mm long, the lobes lanceolate to linear-lanceolate; corolla usually white to pinkish white, rarely pink to red ... *C. chinense*
9. Leaf blade glabrous or puberulent mainly along the veins; calyx 4-16 mm long, the lobes 2-14 mm long; corolla tube ca. 2 cm long, shorter to subequal to the lobes ... *C. japonicum*
9. Leaf blade pubescent on both surfaces; calyx 5-9 mm long, the lobes 2-4 mm long; corolla tube 2.6-3 cm long, subequal to longer than the lobes ... *C. speciosissimum*

- \**Clerodendrum bungei* Steud.— {AFP}
- \**Clerodendrum chinense* (Osbeck)Mabb.— {AFP}
- \**Clerodendrum indicum* (L.)Kuntze— {AFP}
- ^ *Clerodendrum japonicum* (Thunb.)Sweet— {AFP}
- ^ *Clerodendrum laevifolium* Blume—
- ^ *Clerodendrum minahassae* Teijsm. & Binn.—
- ^ *Clerodendrum paniculatum* L.— {AFP}
- ^ *Clerodendrum quadriloculare* (Blanco)Merr.— {AFP}
- ^ *Clerodendrum schmidtii* C.B.Clarke—
- ^ *Clerodendrum speciosissimum* Van Geert ex C.Morren— {AFP}
- ^ *Clerodendrum* × *speciosum* W.Bull.— {AFP}
- ^ *Clerodendrum splendens* G.Don—
- ^ *Clerodendrum thomsoniae* Balf.f.—
- ^ *Clerodendrum trichotomum* Thunb.— {AFP}

### Clinopodium {AFP}

1. Plant sparsely pubescent to glabrate; flowers solitary in the leaf axils ... *C. brownei*
1. Plant sparsely to densely pubescent; flowers in terminal racemes [2]
2. Plant sparsely to moderately pubescent ... *C. gracile*
2. Plant densely villous-pubescent ... *C. vulgare*

- Clinopodium brownei* (Sw.)Kuntze— {AFP}
- \**Clinopodium gracile* (Benth.)Kuntze— {AFP}
- \**Clinopodium vulgare* L.— {AFP}

### Coleus {AFP}

1. Leaf blade (3.5)5-14 cm long, glabrous to sparsely pubescent, often variegated with red, pink, purple, white, yellow, or light green, uniformly non-green, or green ... *C. scutellarioides*

1. Leaf blade 1-9 cm long, tomentose to glabrate, generally uniformly green or greenish, not variegated [2]
2. Leaf blade 1-3.5(6) cm long ... *C. australis*
2. Leaf blade 3-9(10) cm long [3]
3. Leaf blade obovate to rhomboid, toothed above the middle ... *C. neochilus*
3. Leaf blade lanceolate, ovate, to suborbicular, toothed below the middle [4]
4. Leaf 1-1.5 times as long as wide; corolla light pink to purple, stamens exerted from the lower lip ... *C. amboinicus*
4. Leaf blade 1.3-2.3 times as long as wide; corolla lavender to bluish or dark purple, stamens included in the lower lip ... *C. barbatus*

^ *Coleus australis* (R.Br.)A.J.Paton— {AFP}

^ *Coleus scutellarioides* (L.)Benth.— {AFP}

### Collinsonia {AFP}

1. Plant with lemon-like scent; calyx 2-5 mm long, the teeth lance-subulate to narrowly lanceolate; corolla 8-13 mm long; stamens 2, staminodes 2(0) ... *C. canadensis*
1. Plant with lemon-like or anise-like scent; calyx 4.5-7 mm long, the teeth broadly lanceolate; corolla 12-17 mm long; stamens 4 or stamens 2, staminodes 2 ... *C. serotina*

***Collinsonia canadensis*** L.— {AFP}

***Collinsonia serotina*** Walter— {AFP}

### Condea {AFP}

1. Plant densely soft-pubescent or tomentose; leaf blades ovate lanceolate ... *C. floribunda*
1. Plant glabrate to puberulent; leaf blades narrowly elliptic-lanceolate ... *C. verticillata*

\* ***Condea floribunda*** (Briq.)Harley & J.F.B.Pastore— {AFP}

\* ***Condea verticillata*** (Jacq.)Harley & J.F.B.Pastore— {AFP}

### Conradina {AFP}

1. Leaf blade lower surface generally visible with 1-4 prominent secondary veins [2]
1. Leaf blade lower surface generally obscure, lacking prominent secondary veins [3]
2. Leaf blade lower surface with the unicellular trichomes thin-walled, collapsed and flattened on drying, basal and distal parts scarcely differentiated, thin-walled throughout; calyx 9-11 mm long, the apical lobe 4-5 mm long; inflorescence of 1-5 flowers ... *C. cygniflora*
2. Leaf blade lower surface with the unicellular trichomes thick-walled, not collapsed and flattened on drying, basal and distal parts differentiated, thick-walled throughout; calyx 7-9 mm long, the apical lobe 2-4 mm long; inflorescence of (1)3-7 flowers ... *C. etonia*
3. Leaf blade upper surface glabrous, the lower surface and midrib glabrous to glabrate; calyx tube surface glabrous to glabrate ... *C. glabra*
3. Leaf blade upper surface puberulent, the lower surface or midrib densely gray-pubescent to pilose; calyx tube surface densely pubescent or villous [4]
4. Leaf blade lower surface densely pubescent and contrasted with the glabrate midrib ... *C. grandiflora*
4. Leaf blade lower surface densely pubescent or pilose similarly to the midrib [5]
5. Leaves 6-10(13) mm long; mature fruit mericarp >0.9 mm long ... *C. brevifolia*
5. Leaves 7-20 mm long; mature fruit mericarp <1 mm long ... *C. canescens*

***Conradina brevifolia*** Shinners— {AFP} Endemic. Federally Endangered. State Endangered.

***Conradina canescens*** A.Gray— {AFP}

***Conradina cygniflora*** C.E.Edwards et al.— {AFP} Endemic.

***Conradina etonia*** Kral & McCartney— {AFP} Endemic. Federally Endangered. State Endangered.

***Conradina glabra*** Shinners— {AFP} Endemic. Federally Endangered. State Endangered.

***Conradina grandiflora*** Small— {AFP} Endemic. State Threatened.

### **Cornutia** {AFP}

^ *Cornutia grandifolia* (Schltdl. & Cham.)Schauer— {AFP}

### **Dicerandra** {AFP}

1. Annual (or persistent a 2nd year), herbaceous, branches few to none [2]

1. Perennial, woody or suffrutescent, branches many [4]

2. Peduncle 0-1 mm; pedicels 0-2 mm long; stamens subequal, the anther spur obtuse to subacute, with minute domes of digitate hairs ... *D. densiflora*

2. Peduncle (2)3-6 mm long; pedicels 3-9 mm long; stamens unequal, the anther spur acuminate and glabrous [3]

3. Leaves 1-5 mm wide, usually revolute, surface rugose, hispid and raspy, margins denticulate; corolla white to pink, with purplish lines or dots; anthers yellow ... *D. fumella*

3. Leaves 2-10 mm wide, not revolute, surface smooth, margins not denticulate; corolla reddish purple; anthers reddish-brown ... *D. linearifolia* var. *robustior*

4. Corolla lacking speckles or dots, the tube smooth bent; anther spurs hairy [5]

4. Corolla with darkened or colored speckles or dots, the tube abruptly geniculate; anther spurs glabrous to glabrate [6]

5. Stems erect, not decumbent, not re-rooting; leaves narrowly lanceolate, 1-2 cm long (averaging 1.8 cm), 2-4 mm wide ... *D. immaculata* var. *immaculata*

5. Stems decumbent, re-rooting; leaves rhombic, 2-4 cm long (averaging 2.5 cm), (3)4-9(12) mm wide ... *D. immaculata* var. *savannarum*

6. Corolla pale pink to rose-purple (with darker dots); anther spur >1 mm long, papillose or papillose-pubescent [7]

6. Corolla white to faintly pinkish (with darker dots); anther spur <1 mm long, glabrous to glabrate [8]

7. Anthers white; style glabrous to glabrate ... *D. cornutissima*

7. Anthers lavender; style with stiff conic hairs ... *D. thinicola*

8. Leaves with odor of eucalyptus or wintergreen; anthers yellow, sometimes tinged with red, the glands absent, few, or inconspicuous on the connective ... *D. christmanii*

8. Leaves with odor of mint; anthers lavender to white, the glands conspicuous on the connective [9]

9. Inflorescence of 1-2 flowers per cyme; corolla white or rarely partly pinkish, the upper lip oblong to ligulate ... *D. frutescens*

9. Inflorescence of (1)2-3(6) flowers per cyme; corolla pale pinkish white (pink with age), the upper lip ovate to obovate ... *D. modesta*

***Dicerandra christmanii*** Huck & Judd— {AFP} Endemic. Federally Endangered. State Endangered.

***Dicerandra cornutissima*** Huck— {AFP} Endemic. Federally Endangered. State Endangered.

**Dicerandra densiflora** Benth.— {AFP} Endemic.

**Dicerandra frutescens** Shinnars— {AFP} Endemic. Federally Endangered. State Endangered.

**Dicerandra fumella** Huck— {AFP}

**Dicerandra immaculata** Lakela var. **immaculata**— {AFP} Endemic. Federally Endangered. State Endangered.

**Dicerandra immaculata** Lakela var. **savannarum** Huck— {AFP} Endemic. Federally Endangered. State Endangered.

**Dicerandra linearifolia** (Elliott)Benth. var. **robustior** Huck— {AFP}

**Dicerandra modesta** (Huck)Huck— {AFP} Endemic.

**Dicerandra thinicola** H.A.Mill.— {AFP} Endemic. State Endangered.

**Glechoma** {AFP}

\***Glechoma hederacea** L.— {AFP}

**Gmelina** {AFP}

^ **Gmelina arborea** Roxb. ex Sm.— {AFP}

^ **Gmelina philippensis** Cham.—

**Hedeoma** {AFP}

**Hedeoma hispida** Pursh— {AFP}

**Holmskioldia** {AFP}

^ **Holmskioldia sanguinea** Retz.— {AFP} Springly naturalized.

**Hyptis** {AFP}

1. Inflorescence an involucrate globose to hemispheric head (*Hyptis* s.str.) [2]

1. Inflorescences of terminal spikes or racemes, the cymules sometimes with a short involucre [3]

2. Peduncles usually >1 cm long; involucre bracts usually >1.5 mm wide; sepal lobe tips acute; seeds ca. 1 mm or more long, 0.5 mm wide ... *H. alata*

2. Peduncles usually <1 cm long; involucre bracts < 1mm wide; sepal lobe tips acute-acuminate; seeds ca. <0.8 mm long, <0.4 mm wide ... *H. brevipes*

3. Inflorescence of sessile axillary fascicles (flowers may be pedicellate) (*Condea*) [4]

3. Inflorescence of short-pedunculate cymes, sometimes densely clustered and spike-like [5]

4. Plant densely soft-pubescent or tomentose; leaf blades ovate lanceolate ... *C. floribunda*

4. Plant glabrate to puberulent; leaf blades narrowly elliptic-lanceolate ... *C. verticillata*

5. Stem pubescent; calyx with short tufts of white hairs between the lobes (*Mesosphaerum*) ... *M. pectinatum*

5. Stem scabrid; calyx lacking tufts of white hairs between the lobes (*Cantinoa*) [6]

6. Leaf blades lanceolate to ovate-lanceolate; inflorescence a dense spike of cymes, internodes unapparent (*Hyptis spicigera*) ... *C. americana*

6. Leaf blades ovate; inflorescence of separated cymes, internodes long and obvious ... *C. mutabilis*

**Hyptis alata** (Raf.)Shinnars— {AFP}

\***Hyptis brevipes** Poit.— {AFP}

**Lamium** {AFP}

1. Most or all cauline leaves and bracts sessile, the blades orbicular, reniform, to broadly ovate ... *L. amplexicaule*

1. Most cauline leaves and bracts petiolate, the blades ovate ... *L. purpureum*

\**Lamium amplexicaule* L.— {AFP}

\**Lamium purpureum* L.— {AFP}

## Lavandula

^*Lavandula* spp.—

## Leonotis {AFP}

\**Leonotis nepetifolia* (L.)R.Br.— {AFP}

## Leonurus {AFP}

\**Leonurus japonicus* Houtt.— {AFP}

## Lycopus {AFP}

1. Calyx subequal to shorter than the nutlets, the lobe apices obtuse to acute ... *L. virginicus*

1. Calyx much longer than the nutlets, the lobe apices acuminate to subulate [2]

2. Stem sharply 4-angled ... *L. americanus*

2. Stem subterete or with obtuse angles [3]

3. Leaves sessile, the expanded blade adjacent to the stem, the blade base rounded, truncate, to subclasping ... *L. amplexens*

3. Leaves more or less petiolate, the expanded blade distant from the stem, the blade base strongly narrowed and attenuate [4]

4. Leaf blade base gradually narrowed; calyx 2.3-3 mm long ... *L. angustifolius*

4. Leaf blade base abruptly narrowed; calyx 1.8-2.2 mm long ... *L. rubellus*

*Lycopus americanus* Muhl. ex W.P.C.Barton— {AFP}

*Lycopus amplexens* Raf.— {AFP}

*Lycopus angustifolius* Elliott— {AFP} Sometimes subsumed under or treated as a variety of *L. rubellus*.

*Lycopus rubellus* Moench— {AFP}

*Lycopus virginicus* L.— {AFP}

## Macbridea {AFP}

*Macbridea alba* Cham.— {AFP} Endemic. Federally Threatened. State Endangered.

## Melissa

^*Melissa officinalis* L.— {AFP}

## Mentha {AFP}

1. Leaves pubescent with scattered dendroid hairs; fruity or sweet odor ... *M. suaveolens*

1. Leaves glabrous; minty odor [2]

2. Peppermint odor (menthol and menthone predominant) ... *M. ×piperita*

2. Spearmint odor (carvone and limonene predominant) ... *M. spicata*

^ *Mentha × piperita* L.— {AFP}

^ *Mentha spicata* L.— {AFP}

\* ***Mentha suaveolens*** Ehrh.— {AFP}

### Mesosphaerum {AFP}

\* ***Mesosphaerum pectinatum*** (L.) Kuntze— {AFP}

### Monarda {AFP}

1. Bracts and calyx aristate, calyx with 15 veins ... *M. citriodora*

1. Bracts and calyx lobes acute to acuminate, calyx with 13 veins ... *M. punctata*

\* ***Monarda citriodora*** Cerv. ex Lag.— {AFP}

***Monarda punctata*** L.— {AFP}

### Nepeta

^ *Nepeta cataria* L.— {AFP}

### Ocimum {AFP}

1. Fruiting pedicel 2-4 mm long, shorter than the corolla; calyx throat with dense ring of hairs; corolla 7-10 mm long, the tube funnel-shaped; lower pair of filaments with a small appendage at the base; nutlet black, copiously mucilaginous; disturbed sites and widely cultivated ... *O. basilicum*

1. Fruiting pedicel 4-7 mm long, subequal to longer than the corolla; calyx throat glabrous; corolla 3-5 mm long, the tube with parallel sides; lower pair of stamens with a tuft of cilia at base, lacking appendages; nutlet brown, not or scarcely mucilaginous; rockland sites ... *O. campechianum*

^ *Ocimum basilicum* L.— {AFP}

***Ocimum campechianum*** Mill.— {AFP} State Endangered.

^ *Ocimum tenuiflorum* L.—

### Origanum

^ *Origanum vulgare* L.— {AFP}

### Orthosiphon

^ *Orthosiphon aristatus* (Blume) Miq.—

### Perilla {AFP}

\* ***Perilla frutescens*** (L.) Britton— {AFP}

### Petitia {AFP}

^ *Petitia domingensis* Jacq.— {AFP}

### Physostegia {AFP}

1. Leaf blade sharply serrate, the apex acute or acute-acuminate ... *P. virginiana*

1. Leaf blade entire, undulate, crenate, to subtly denticulate, the apex rounded, obtuse, to bluntly acute [2]

- 2. Calyx and inflorescence axis minutely stipitate-glandular and with nonglandular trichomes; nutlets 1.7-2.2 mm long, the surface usually warty ... *P. godfreyi*
- 2. Calyx and inflorescence axis puberulent, eglandular; nutlets 2-3.6 mm long, surface smooth [3]
- 3. Leaves only gradually reduced distally, the larger leaves typically in the middle 1/3 of the stem when flowering, uppermost pair of leaves usually much larger than the floral bracts ... *P. leptophylla*
- 3. Leaves strongly reduced distally, the larger leaves in the basal 1/3 of the stem, uppermost pair of leaves often subequal to the floral bracts ... *P. purpurea*

***Physostegia godfreyi*** Cantino— {AFP} Endemic. State Threatened.

***Physostegia leptophylla*** Small— {AFP}

***Physostegia purpurea*** (Walter)S.F.Blake— {AFP}

\****Physostegia virginiana*** (L.)Benth.— {AFP}

**Piloblephis** {AFP}

***Piloblephis rigida*** (W.Bartram ex Benth.)Raf.— {AFP}

**Premna** {AFP}

^ ***Premna odorata*** Blanco— {AFP}

**Prunella** {AFP}

\****Prunella vulgaris*** L.— {AFP}

**Pycnanthemum** {AFP}

- 1. Leaves linear, 1-3 mm wide ... *P. tenuifolium*
- 1. Leaves ovate, elliptic, to oblong, 5-45 mm wide [2]
- 2. Leaves ascending to erect, the largest leaves 1-2.5 cm long ... *P. nudum*
- 2. Leaves generally spreading, sometimes ascending, the largest leaves (2.5)3-10 cm long [3]
- 3. Bracts and calyx tips aristate or long-attenuate [4]
- 3. Bracts and calyx tips acute to acuminate [5]
- 4. Leaves 3-15 mm wide; calyx lobes 2.3-3.5 mm long ... *P. flexuosum*
- 4. Leaves 13-25 mm wide; calyx lobes 1.5-2.3 mm long ... *P. setosum*
- 5. Bracts and calyx lobe tips with 1-few spreading, jointed hairs >1 mm long; calyx lower lip with the teeth usually >1/3 of the total calyx length ... *P. pycnanthemoides*
- 5. Bracts and calyx lobe tips lacking jointed hairs >1 mm long; calyx lower lip with the teeth <1/3 of the total calyx length [6]
- 6. Leaf lower surface densely canescent; flower clusters pedunculate; calyx teeth usually cupped ... *P. albescens*
- 6. Leaf lower surface canescent on distal leaves, the proximal leaves glabrate ... *P. floridanum*

***Pycnanthemum albescens*** Torr. & A.Gray ex A.Gray— {AFP}

***Pycnanthemum flexuosum*** (Walter)Britton et al.— {AFP}

***Pycnanthemum floridanum*** E.Grant & Epling— {AFP} State Threatened.

***Pycnanthemum nudum*** Nutt.— {AFP}

***Pycnanthemum pycnanthemoides*** (Leavenw.)Fernald— {AFP}

***Pycnanthemum setosum*** Nutt.— {AFP}

***Pycnanthemum tenuifolium*** Schrad.— {AFP}



## **Rothea**

^ *Rothea myricoides* (Hochst.) Steane & Mabb.—

## **Salvia** {AFP}

1. Leaves mostly basal, strongly reduced upwards ... *S. lyrata*
1. Leaves mostly cauline, not strongly reduced upwards [2]
2. Corolla red ... *S. coccinea*
2. Corolla white to blue to purple [3]
3. Calyx eglandular [4]
3. Calyx glandular [6]
4. Leaf blades ovate-lanceolate ... *S. hispanica*
4. Leaf blades lanceolate to linear [5]
5. Leaves linear to linear-lanceolate to narrowly elliptic, the petiole indistinct; bracts generally apparent throughout the inflorescence; calyx pubescent ... *S. azurea*
5. Leaf blades lanceolate, the petiole more or less distinct; upper inflorescence verticils without conspicuous bracts; calyx densely white-canescens ... *S. farinacea*
6. Calyx tip spinulose or sharply acuminate ... *S. misella*
6. Calyx tips acute, obtuse, to rounded [7]
7. Leaf blade decurrent along the petiole or the blade base acute [8]
7. Leaf blade not decurrent or only slightly, the base truncate to cordate [9]
8. Plant 1.4-2.0 m tall; larger leaf blades mostly 6-12 cm long, 3-6.5 cm wide; calyx 5-10 mm long ... *S. chapmanii*
8. Plant <1 m tall; larger leaf blades mostly 2-5 cm long, 1-3 cm wide; calyx ca. 2 mm long ... *S. occidentalis*
9. Plant pubescent with curved hairs; leaf blade underside glabrous, pubescent on the veins; corolla blue to violet ... *S. micrantha*
9. Plant pilose; leaf blade underside densely pubescent; corolla white to lavender ... *S. serotina*

***Salvia azurea*** Michx. ex Lam.— {AFP}

***Salvia chapmanii*** A. Gray— {AFP} State Endangered.

\*\* ***Salvia coccinea*** Buc'hoz ex Etl.— {AFP} Probably introduced; widely cultivated. This name was mentioned by Bartram on St. Simons Island, GA (1792: 57), and Small (1929: 16) thought it native to the Halifax River region. Contrarily, Chapman (1897: 381) considered it escaped from cultivation, as did Mohr in Mobile, Alabama (1865, UNA). An early collection was made near Jacksonville by Keeler in 1870-1876 (NY), and by Rugel in Smyrna, TN in 1848 (FLAS).

^ *Salvia elegans* Vahl—

^ *Salvia farinacea* Benth.— {AFP}

^ *Salvia guaranitica* A.St.-Hil. ex Benth.—

^ *Salvia hispanica* L.— {AFP}

^ *Salvia leucantha* Cav.—

***Salvia lyrata*** L.— {AFP}

***Salvia misella*** Kunth— {AFP}

***Salvia occidentalis*** Sw.— {AFP}

^ *Salvia officinalis* L.—

^ *Salvia rosmarinus* Spenn.—

***Salvia serotina*** L.— {AFP}

^ *Salvia splendens* Ker Gawl.—

## Scutellaria {AFP}

1. Most leaf blades conspicuously toothed, larger ones with >5 teeth [2]
1. Most leaf blades with  $\leq 5$  teeth or the margins entire (rarely more than 5 teeth) [6]
2. Leaf blade cordate at the base ... *S. ovata* subsp. *bracteata*
2. Leaf blade truncate to cuneate or subcordate-cuneate at the base [3]
3. Flowers in elongate axillary racemes, distinct from the main stem or branch; corolla 5-9 mm long ... *S. lateriflora*
3. Flowers in terminal spikes or racemes, sometimes with axillary ones below; corolla 12-25 mm long [4]
4. Distal leaves grading into the bracts subtending the flowers ... *S. arenicola*
4. Distal leaves larger and fairly distinct from the bracts subtending the flowers [5]
5. Leaf blade upper surface with septate hairs ca. 1 mm long, the lower surface not much lighter than the upper surface ... *S. elliptica*
5. Leaf blade upper surface glabrate or the hairs minute, the lower surface lighter and strongly contrasted with the upper surface ... *S. incana* var. *australis*
6. Longer leaves 1.2-2.2 times longer than wide; corolla 3-18 mm long [7]
6. Longer leaves 3-30 times longer than wide; corolla 4-6 mm long or 18-31 mm long [9]
7. Calyx eglandular with short, uncinata hairs ... *S. havanensis*
7. Calyx glandular and with eglandular long, straight hairs [8]
8. Annual or short-lived tap-rooted perennial; leaf blade base cuneate ... *S. drummondii*
8. Perennial with rhizomes; leaf blade base mostly truncate to subcordate ... *S. parvula*
9. Corolla 4-6 mm long ... *S. racemosa*
9. Corolla 18-31 mm long [10]
10. Rhizomatous, with fusiform tubers; leaves linear, 1-2.5 mm wide ... *S. floridana*
10. Leaves ovate, elliptic, elliptic-oblongate, to obovate-lanceolate, 3-14 mm wide [11]
11. Corolla glabrous, rarely minutely villosulous; flowering Aug-Oct ... *S. glabriuscula*
11. Corolla pubescent; flowering mostly Mar-Jul, rarely Sep [12]
12. Stems to 70 cm tall, distal internodes longer to shorter than adjacent leaves; leaves spreading to ascending, without stipitate glands; corolla blue or pinkish ... *S. integrifolia*
12. Stems to 35 cm tall, distal internodes typically shorter than the adjacent leaves; leaves typically ascending, with stipitate glands; corolla white to pale blue ... *S. multiglandulosa*

***Scutellaria arenicola*** Small— {AFP}

\****Scutellaria drummondii*** Benth.— {AFP}

***Scutellaria elliptica*** Muhl.— {AFP}

***Scutellaria floridana*** Chapm.— {AFP} Endemic. Federally Threatened. State Endangered.

***Scutellaria glabriuscula*** Fernald— {AFP}

***Scutellaria havanensis*** Jacq.— {AFP} State Endangered.

***Scutellaria incana*** Biehler— {AFP}

***Scutellaria integrifolia*** L.— {AFP}

***Scutellaria lateriflora*** L.— {AFP}

***Scutellaria multiglandulosa*** (Kearney) Small ex R.M. Harper— {AFP}

***Scutellaria ovata*** Hill subsp. ***bracteata*** (Benth.) Epling— {AFP}

***Scutellaria parvula*** Michx.— {AFP}

\****Scutellaria racemosa*** Pers.— {AFP}

## Stachydeoma {AFP}

***Stachydeoma graveolens*** (Chapm. ex A.Gray) Small— {AFP} Endemic. State Endangered.

### **Stachys** {AFP}

1. Annual; calyx tube 2-4 mm long; corolla 4-6 mm long [2]
1. Perennial, with rhizomes or tubers; calyx tube 6-7 mm long; corolla 10-13 mm long [3]
2. Calyx (including awns) 6-8 mm long ... *S. arvensis*
2. Calyx (including awns) 3-5 mm long ... *S. crenata*
3. Most leaves sessile to subsessile, the longest petioles to 4 mm long only on the most basal leaves ... *S. lythroides*
3. Most or all leaves petiolate, the longest petioles to 20 mm long ... *S. floridana*

\****Stachys arvensis*** (L.) L.— {AFP}

***Stachys crenata*** Raf.— {AFP} State Endangered.

***Stachys floridana*** Shuttlew. ex Benth.— {AFP}

***Stachys lythroides*** Small— {AFP} State Endangered.

### **Teucrium** {AFP}

1. Leaf blades medium to moderately dark green above, grayish green to gray beneath, midrib on lower surface with hairs pointing forward, widely spreading, or very loosely retrorse ... *T. canadense* var. *canadense*
1. Leaf blades very dark green or blackish green above (rarely medium green), silvery beneath, midrib on lower surface with closely appressed retrorse hairs in basal portion (rarely loose or spreading) ... *T. canadense* var. *nashii*

***Teucrium canadense*** L. var. *canadense*— {AFP}

***Teucrium canadense*** L. var. *nashii* (Kearney) Shinnars— {AFP}

**Trichostema** {AFP}: Once comprising 3 species in Florida (Lewis 1945), it ballooned to 10 species (McClelland 2022; McClelland et al. 2023). Examination of the RADseq data of *Trichostema* (McClelland et al. 2023) with STRUCTURE, Neighbor-net, and cloud tree analyses would be useful to visualize alternate topologies and potential admixture (e.g. Du et al. 2023; Anderson et al. 2024; Vasile et al. 2024). Given the subtle morphological differences (McClelland 2022: 190-191) and geographic proximities, it would be worthwhile to explore infraspecific classifications.

1. Longest stem hairs 3-8 cells long, the stem nodes with hairs primarily spreading, rarely downwardly or upwardly curled; leaves widest towards the base or near the middle, not linear; longer style branch 1-2 times as long as the shorter one (*Trichostema dichotomum* s.lat.) [2]
1. Longest stem hairs usually 1-2 cells long, occasionally 3 cells long, the stem nodes with hairs primarily downwardly curved to appressed, rarely spreading or upwardly curled; leaves widest near the middle or towards the apex, or linear; longer style branch 2-6(9) times as long as the shorter [5]
2. Plant annual, branching primarily from the middle to upper part of the plant; mid-stem hairs spreading, occasionally downwardly or upwardly curled, node hairs spreading, rarely upwardly curved, longest hairs 5-8 cells long; nutlet appearing wrinkled, the ridges distinct, steep-sided; panhandle and peninsula south to Manatee and Brevard counties ... *T. dichotomum*

2. Plant short-lived perennial, branching throughout the plant; mid-stem hairs downwardly curved, occasionally spreading, node hairs spreading, rarely downwardly curved, longest hairs 3-6 cells long; nutlet relatively smooth, the ridges low and shallow sided [3]
3. Older plants compact, to 1 m tall; largest leaves 1.5-3.5 cm long, 0.5-1.3 cm wide, 2.4-3.6 times as long as wide; coastal, calcareous substrates, Pasco and Flagler south to Monroe mainland and Miami-Dade counties ... *T. floridanum*
3. Older plants leggy, to 1.25 m tall; largest leaves 2.7-5.5 cm long, 0.7-1.8 cm wide, 2.9-4.4 times as long as wide; panhandle and peninsula south to Collier and Martin counties, not restricted to calcareous substrates ... *T. fruticosum*
4. Annual, branches few to none, often branching primarily in the middle and upper part of the plant; largest leaves 1.8-5 cm long, 1.5-25 times as long as wide; somewhat widespread (*Trichostema setaceum* s.lat.) [5]
4. Suffrutescent perennial, branching primarily near the base or throughout; largest leaves 1-2.5 cm long, 1.5-9 times as long as wide; restricted to the Florida Peninsula (*Trichostema suffrutescens* s.lat.) [6]
5. Largest leaves 1.8-3.5 cm long, 1.5-9 times long as wide; Franklin Co. ... *T. latens*
5. Largest leaves 2-5 cm long, 5-25 times long as wide; panhandle and peninsula south to Pasco and Volusia Cos. ... *T. setaceum*
6. Largest leaves 3-9 times long as wide; nutlet strongly wrinkled or pockmarked, the ridges prominent and stocky [7]
6. Largest leaves 1.5-4.5 times long as wide; nutlet smooth to slightly wrinkled, the ridges faint to somewhat prominent [8]
7. Stem and node hairs primarily downwardly curved; largest leaves typically 1.5-2.5 cm long, 3.5-9 times long as wide; Brevard and Hillsborough south to Lee and Broward counties ... *T. gracile*
7. Stem and node hairs primarily spreading to upwardly curved; largest leaves typically 1.1-1.9 cm long, 3-5 times long as wide; Alachua, Citrus, Gilchrist, Hernando, Levy, Marion, and Pasco counties ... *T. microphyllum*
8. Plant branching throughout; flowering Oct-Jan; Martin and perhaps Palm Beach counties ... *T. hobe*
8. Plant branching primarily near the base; flowering Jun-Dec; central Florida counties [9]
9. Plant more robust, to 1 m tall, differently scented; fruiting calyx 5.2-6.2 mm long; Polk, Highlands, Osceola, and potentially Hardee, Lake, and Orange counties ... *T. bridgesii-orzellii*
9. Plant less robust, to 0.6 m tall, differently scented; fruiting calyx 4.7-6.0 mm long; Clay, Lake, Marion, Orange, Putnam, and Seminole counties ... *T. suffrutescens*

***Trichostema bridgessii-orzellii*** K.S. McLell.—Endemic.

***Trichostema dichotomum*** L.— {AFP}

***Trichostema floridanum*** K.S. McLell. & Weakley—Endemic.

***Trichostema fruticosum*** K.S. McLell.— Near endemic (SE Georgia, S Alabama, S Mississippi).

***Trichostema gracile*** K.S. McLell.—Endemic.

***Trichostema hobe*** K.S. McLell.—Endemic.

***Trichostema latens*** K.S. McLell.—Endemic.

***Trichostema microphyllum*** K.S. McLell.—Endemic.

***Trichostema setaceum*** Hoult.— {AFP}

***Trichostema suffrutescens*** Kearney—Endemic.

## Thymus

^ *Thymus vulgaris* L.—

## Vitex {AFP}

1. Leaves mostly with 3-9 leaflets [2]
1. Leaves mostly with 1-3 leaflets [3]
2. Leaflets entire, subsessile to nearly attenuate at the base ... *V. agnus-castus*
2. Leaflets entire or toothed, usually with a more or less distinct petiolule, especially the terminal leaflet ... *V. negundo*
3. Leaflets densely gray to white tomentose on the lower surface [4]
3. Leaflets sparsely pubescent to glabrous on the lower surface [5]
4. Sprawling or spreading shrub, rooting at nodes; leaf blades mostly obovate-spatulate, ovate-elliptic, broadly oblong-elliptic, to orbicular ... *V. rotundifolia*
4. Erect shrub or tree, not rooting at nodes; leaf blades mostly oblong, lanceolate, or obovate ... *V. trifolia*
5. Inflorescence axillary ... *V. glabrata*
5. Inflorescence terminal ... *V. parviflora*

^ *Vitex agnus-castus* L.— {AFP}

^ *Vitex glabrata* R.Br.— {AFP}

\* *Vitex negundo* L.— {AFP} Previously in synonymy, the name *V. elmeri* was reinstated as a species (Gentallan, Jr. et al. 2024).

\* *Vitex rotundifolia* L.f.— {AFP}

\* *Vitex trifolia* L.— {AFP}

## Volkameria {AFP}

^ *Volkameria glabra* (E.Mey.) Mabblerley & Y.-W.Yuan— {AFP}

## MAZACEAE {AFP}

\* *Mazus pumilus* (Burm.f.) Steenis— {AFP}

## PHRYMACEAE {AFP}

1. Leaf blade margin mostly sinuate-dentate, the sinuses U-shaped; inflorescence a solitary, axillary flower; calyx 11-18 mm long; corolla 15-28 mm long; fruit 8-12 mm long, erect or spreading ... *Mimulus alatus*

1. Leaf blade margin mostly crenate-dentate, the sinuses V-shaped; inflorescence a terminal spike with several flowers; calyx 3-6 mm long; corolla 6-11 mm long; fruit 4-8 mm long, strongly deflexed, pointing downward ... *Phryma leptostachya*

## Mimulus {AFP}

*Mimulus alatus* Aiton— {AFP}

## Phryma {AFP}

*Phryma leptostachya* L.— {AFP}

## OROBANCHACEAE {AFP}

1. Plants not photosynthetic (holoparasitic), lacking green color, drying tan or brown [2]

1. Plants photosynthetic (hemiparasitic), with green color (sometimes obscured by other pigments), often drying blackish or sometimes greenish [6]

- 2. Inflorescence often branched at the base, axis 1-3 mm wide, ligneous, flowers distant, few if any overlapping; flowers cleistogamous and chasmogamous; root parasite of *Fagus* ... *Epifagus virginiana*
- 2. Inflorescence simple or few-branched, axis 2-10 mm wide, fleshy, flowers dense, overlapping at least distally, or flower appearing solitary; flowers chasmogamous; not on *Fagus* [3]
- 3. Scale-like leaves densely imbricate below the fertile part of the inflorescence; stamens exerted; root parasite of *Quercus* ... *Conopholis americana*
- 3. Scale-like leaves distant or only partly overlapping below the fertile part of the inflorescence; stamens included; not on *Quercus* [4]
- 4. Flower on long erect pedicels (20-120 mm long) arising from the ground; primarily parasitizing Asteraceae ... *Aphyllon uniflorum*
- 4. Flowers several on aerial inflorescence, the pedicel 0-15 mm long [5]
- 5. Flowers densely congested nearly throughout; calyx 5-lobed; parasitizing Asteraceae ... *Aphyllon ludovicianum*
- 5. Flowers only partly overlapping proximally; calyx 2- or 4-lobed; stigma bilobed; parasitizing a variety of taxa, including Fabaceae ... *Orobanche minor*
- 6. Leaves scale-like, appressed to erect ... *Striga gesnerioides*
- 6. Leaves with blades, generally spreading [11]
- 6. Leaves 0.2-3(4) mm wide, mostly linear ... *Agalinis*
- 6. Leaves 4-60 mm wide, not linear [7]
- 7. Leaves alternate (rarely opposite), sometimes nearly all basal [8]
- 7. Leaves opposite (rarely alternate) [10]
- 8. Leaf blade regularly pinnately lobed, with more than 5 lobes per side ... *Pedicularis canadensis*
- 8. Leaf blade entire or toothed, rarely lobed with 5 or fewer irregular lobes per side [9]
- 9. Leaves linear-lanceolate, secondary veins obscure; bracteoles absent; sepals 4; seeds unwinged ... *Castilleja indivisa*
- 9. Leaves ovate-lanceolate to lanceolate, secondary veins often apparent; bracteoles present; sepals 5; seeds winged ... *Schwalbea americana*
- 10. Leaf blade entire or weakly toothed [11]
- 10. Leaf blade strongly toothed to pinnatifid [12]
- 11. Plant often spreading, regularly branched; corolla yellow ... *Aureolaria*
- 11. Plant usually strictly erect, unbranched or with 1-2 branches, very rarely more; corolla purple, bluish, to white ... *Buchnera*
- 12. Corolla 6-14 mm long; fruit 4-7 mm long ... *Seymeria*
- 12. Corolla 20-40 mm long; fruit 10-15 mm long [14]
- 13. Corolla yellow ... *Aureolaria*
- 13. Corolla bright orange ... *Macranthera*

**Agalinis {AFP}** Plant are often difficult to identify to species. The taxonomy and relationships need to be better understood.

- 1. Bracts longer than pedicels [2]
- 1. Bracts shorter than to subequal to the pedicels [9]
- 2. Leaf blades fleshy, with sessile dome-shaped hairs on the upper surface [3]
- 2. Leaf blades not fleshy, scabridulous to scabrous on the upper surface [4]
- 3. Perennial, with long thick roots; stems 70-160 cm long; pedicels 5-25 mm long; corolla 25-35 mm long, the lobes 6-14 mm long; styles 15-28 mm long ... *A. linifolia*

3. Annual, mostly with short weak roots; stems 5-75 cm long; pedicels 2.5-11 mm long; corolla 7.5-21 mm long, the lobes 2.5-6 mm long; styles 6-13 mm long ... *A. maritima* var. *grandiflora*
4. Pedicels 6-25 mm; upper lobes of corolla projected over distal anthers, throats glabrous within, across bases and sinus of upper lobes ... *A. tenuifolia*
4. Pedicels 0.5-8 mm; upper lobes of corolla spreading, erect, or reflexed-spreading, rarely projected distal to corolla mouth, throats villous within, across bases and sinus of upper lobes [5]
5. Leaf blades filiform, 0.2-0.8 mm wide; calyx lobes deltate-subulate, 0.2-1 mm long; inflorescences racemiform, with pseudoterminal flowers ... *A. plukenetii*
5. Leaf blades mostly linear, linear-filiform, linear-lanceolate, linear-elliptic, to elliptic, 0.4-5 mm wide; calyx lobes triangular, triangular-subulate, triangular-lanceolate, to lanceolate, 0.6-5 mm long; inflorescences racemes [6]
6. Stems moderately to often copiously scabrous or scabridulous on faces and angles; axillary fascicles of leaves well developed, shorter than or equal to subtending leaves [7]
6. Stems glabrous, glabrate, or scabridulous to sparsely scabrous; axillary fascicles of leaves absent or shorter than subtending leaves [8]
7. Stems (10-)50-200 cm long; corollas 22-36 mm long, the lobes 5-12 mm long; leaf blades 15-40(-50) mm long; styles 14-22 mm long, strongly exerted ... *A. fasciculata*
7. Stems 20-40(-50) cm long; corollas 12-14 mm, the lobes 3-5 mm long; leaf blades 10-15(-20) mm long; styles 4-7.7 mm long, included or slightly exerted ... *A. georgiana*
8. Branches ascending, slightly quadrangular-ridged distally; leaf blades linear to linear-filiform, 0.5-1.4 mm wide; calyx lobes triangular-subulate, keeled; seeds black ... *A. harperi*
8. Branches ascending, spreading, or arching, quadrangular-ridged or winged distally; leaf blades narrowly linear, linear, to linear-lanceolate, 0.5-5 mm wide; calyx lobes triangular, lanceolate, or triangular-subulate, not keeled; seeds dark brown ... *A. purpurea*
9. Leaves slightly divergent or appressed to strongly ascending, blades subulate to narrowly triangular, 0.5-3 mm long [10]
9. Leaves erect, erect-ascending, ascending, spreading-ascending, recurved, spreading, arching, or reflexed, rarely appressed or ascending-appressed, blades subulate, filiform, linear, linear-filiform, linear-spatulate, linear-elliptic, linear-lanceolate, elliptic, spatulate, or lanceolate, (1-)4-70 mm long [11]
10. Branches stiffly ascending, quadrangular; inflorescences racemes, sometimes with 1-3 mm, floriferous axillary branches; pedicels 1-3(-4) mm; corolla throats pilose externally ... *A. aphylla*
10. Branches widely and laxly spreading, nearly terete; inflorescences paniculate with solitary flowers; pedicels 3-10(-12) mm; corolla throats glabrous externally ... *A. filicaulis*
11. Lower corolla lobes pilose externally [12]
11. Lower corolla lobes glabrous externally [15]
12. Leaves alternate, blades fleshy, with axillary fascicles equal to or longer than subtending leaves ... *A. filifolia*
12. Leaves opposite, blades not fleshy, with axillary fascicles absent or shorter than subtending leaves [13]
13. Leaf blades narrowly linear to linear-lanceolate; upper lobes of corolla projected over distal anthers, throats glabrous within, across bases and sinus of adaxial lobes; capsules globular; seeds tan to brown ... *A. tenuifolia*
13. Leaf blades filiform to narrowly linear; upper lobes of corolla recurved, reflexed, or reflexed-spreading, throats villous within, across bases and sinus of adaxial lobes; capsules elliptic-ovate or globular-ovoid; seeds black or yellowish tan [14]
14. Inflorescences racemiform or racemose-paniculate, flowers 1 per node; capsules globular-ovoid ... *A. laxa*

14. Inflorescences racemes, sometimes interrupted by short floriferous branches, flowers 2 per node; capsules elliptic-ovate ... *A. setacea*
15. Axillary fascicles usually half or more the length of subtending leaves, sometimes absent; pedicels scabrous ... *A. pulchella*
15. Axillary fascicles absent or shorter than subtending leaves; pedicels glabrous or scabridulous [16]
16. Corolla throats glabrous externally, sometimes pilose externally proximal to sinuses ... *A. divaricata*
16. Corolla throats pilose externally [17]
17. Proximal branches arching upward, others spreading-ascending to laxly and widely spreading, subterete to quadrangular-ridged; leaves spreading to spreading-ascending; corolla pink to rose, without 2 yellow lines and sometimes with dark-pink spots in lower throat, (8–) 10–12 mm long; capsules obovoid-oblong ... *A. flexicaulis*
17. Branches stiffly arching-ascending to erect-ascending, quadrangular; leaves erect to erect-ascending; corolla pink, with 2 yellow lines and pink spots pale or absent in lower throat, 12–15 (–17) mm long; capsules globular to oblong ... *A. obtusifolia*

***Agalinis aphylla*** (Nutt.) Raf.— {AFP}

***Agalinis divaricata*** (Chapm.)Pennell— {AFP}

***Agalinis fasciculata*** (Elliott)Raf.— {AFP}

***Agalinis filicaulis*** (Benth.)Pennell— {AFP}

***Agalinis filifolia*** (Nutt.)Raf.— {AFP}

***Agalinis flexicaulis*** Hays— {AFP} Endemic.

***Agalinis georgiana*** (C.L.Boynton)Pennell— {AFP} State Endangered.

***Agalinis harperi*** Pennell— {AFP}

***Agalinis laxa*** Pennell— {AFP}

***Agalinis linifolia*** (Nutt.)Britton— {AFP}

***Agalinis maritima*** (Raf.)Raf. var. ***grandiflora*** (Benth.)Pennell— {AFP}

***Agalinis obtusifolia*** Raf.— {AFP}

***Agalinis plukenetii*** (Elliott) Raf.— {AFP}

***Agalinis pulchella*** Pennell— {AFP}

***Agalinis purpurea*** (L.)Pennell— {AFP}

***Agalinis setacea*** (J.F.Gmel.)Raf.— {AFP}

***Agalinis tenuifolia*** (Vahl)Raf.— {AFP}

### **Aphyllon** {AFP}

1. Flower on long erect pedicels (20-120 mm long) arising from the ground ... *A. uniflorum*

1. Flowers several on aerial inflorescence, the pedicel 0-15 mm long ... *A. ludovicianum*  
... *A. ludovicianum*

\****Aphyllon ludovicianum*** (Nutt.)A.Gray— {AFP}

***Aphyllon uniflorum*** (L.) Torr. & A.Gray ex A.Gray— {AFP}

### **Aureolaria** {AFP}

1. Plant glabrous ... *A. flava* subsp. *reticulata*

1. Plant pubescent [2]

2. Pubescence eglandular; leaf blade with few lobes basally or entire; calyx lobes entire ... *A. virginica*



2. Pubescence, especially distally, glandular; leaf blade pinnatifid to pinnately lobed; calyx lobes toothed or pinnatifid [3]

3. Stem virgately branched; distal leaves appressed-ascending and strongly reduced; corolla 38-45 mm long ... *A. pectinata* subsp. *floridana*

3. Stem stiffly branched; leaves spreading and gradually reduced distally; corolla 30-40 mm long ... *A. pectinata* subsp. *pectinata*

***Aureolaria flava*** (L.)Farw.— {AFP}

***Aureolaria pectinata*** (Nutt.)Pennell— {AFP}

***Aureolaria virginica*** (L.)Pennell— {AFP}

**Buchnera** {AFP} The two taxa putatively distinguished subtly differ, and it would be not be surprising if the two are confluent such that infraspecific status may be desirable.

1. Larger leaf blades narrowly ovate to lanceolate, strongly 3-veined (major veins 3, minor veins (0)2), apex acute, margins irregularly dentate, teeth 2-3 mm long; calyx 6-8 mm long; corolla lobes 5-8 mm long; fruit 6-8 mm long ... *B. americana*

1. Larger leaf blades narrowly oblanceolate, lanceolate, or broadly linear, 1-veined to obscurely 3-veined (major veins 1, minor veins (0)2), apex usually obtuse or rounded, margins entire or crenate, teeth 0.5-1.5 mm long; calyx 4.5-5.5 mm; corolla lobes 2-5 mm long; fruit ca. 4.5-6.5 mm long ... *B. floridana*

***Buchnera americana*** L.— {AFP} Walton Co.

***Buchnera floridana*** Gandoger—Throughout.

**Castilleja** {AFP}

\****Castilleja indivisa*** Engelm.— {AFP}

**Conopholis** {AFP}

***Conopholis americana*** (L.)Wallr.— {AFP}

**Epifagus** {AFP}

***Epifagus virginiana*** (L.)W.P.C.Barton— {AFP}

**Macranthera** {AFP}

***Macranthera flammea*** (W.Bartram)Pennell— {AFP} State Endangered.

**Orobanche** {AFP}

\****Orobanche minor*** Sm.— {AFP}

**Pedicularis** {AFP}

***Pedicularis canadensis*** L.— {AFP}

**Schwalbea** {AFP}

***Schwalbea americana*** L.— {AFP} Federally Endangered. State Endangered. Very rare.

**Seymeria** {AFP}

1. Leaf segments linear-filiform, mostly <0.5 mm wide; calyx and fruit glabrous to glabrate; parasitizing Pinus ... *S. cassioides*

1. Leaf segments linear-lanceolate, mostly >0.5 mm wide; parasitizing a variety of taxa, probably not Pinus [2]

2. Stems pubescent to villous; capsules densely tomentose ... *S. pectinata* subsp. *pectinata*

2. Stems pubescent to puberulous; capsules glabrescent to pubescent ... *S. pectinata* subsp. *peninsularis*

***Seymeria cassioides*** (J.F.Gmel.)S.F.Blake— {AFP}

***Seymeria pectinata*** Pursh— {AFP}

**Striga** {AFP}

\****Striga gesnerioides*** (Willd.)Vatke ex Engl.— {AFP} Root parasite.

## PAULOWNIACEAE

**Paulownia** {AFP}

\****Paulownia tomentosa*** (Thunb.)Siebold & Zucc. ex Steud.— {AFP}

## TETRACHONDRAEAE {AFP}

**Polypremum** {AFP}

***Polypremum procumbens*** L.— {AFP}

## VERBENACEAE {AFP}

1. Woody vines; corolla shorter than the calyx; calyx lobes wing-like in fruit ... *Petrea volubilis*

1. Trees, shrubs, or herbs; corolla usually longer than the calyx; calyx lobes not wing-like in fruit [2]

2. Flowers and fruits embedded in a fleshy rachis ... *Stachytarpheta*

2. Flowers and fruits not embedded in a fleshy rachis [3]

3. Inflorescence an elongate raceme with visible internodes [4]

3. Inflorescence a dense spike, the internodes not apparent [6]

4. Herb ... *Priva lappulacea*

4. Shrub or tree [5]

5. Petioles often orangeish; leaf blade coriaceous, 5-14 cm long; corolla white, 2-3 mm wide; fruit reddish, orange, brown, to dark purple ... *Citharexylum spinosum*

5. Petioles greenish or indistinct; leaf blade chartaceous, 1.5-5 cm long; corolla pale to dark purple; fruit yellow to orange ... *Duranta erecta*

6. Corollas yellow, orange, pink, or purplish; fruit a drupe ... *Lantana*

6. Corollas white, pink, to purple; fruit a dry schizocarp [7]

7. Inflorescence axillary [8]

7. Inflorescence terminal [9]

8. Shrub or subshrubs, stems rather woody, sometimes trailing and re-rooting; hairs simple ... *Lippia*

8. Trailing or lax herbs, stems rooting; hairs T-shaped or Y-shaped ... *Phyla*

9. Corolla salverform; styles >6 mm long; seeds with a basal extension of the mericarp ... *Glandularia*

9. Corolla funnelform; styles to 3 mm long; seeds without a basal extension of the mericarp ... *Verbena*

## Aloysia

^*Aloysia virgata* (Ruiz & Pav.)Pers.—

## Citharexylum {AFP}

*Citharexylum spinosum* L.— {AFP}

## Duranta {AFP}

1. Leaf blades mostly ovate to elliptic, serrate from about mid-blade with 4-9 teeth per side, acute at the tip ... *D. erecta*

1. Leaf blades mostly obovate, elliptic, to ovate, entire or shallowly serrate with 1-5 shallow teeth above mid-blade, rounded to acute at the tip ... *D. repens*

^*Duranta erecta* L.— {AFP} Widely cultivated. Sparingly naturalized.

***Duranta repens*** L.— Miami-Dade & Monroe Co. keys; extirpated. Known only from collections by Blodgett (Key West), Rugel, Chapman, and Small (Fuchs or "Sykes" Hammock). Clearly was once native. Morphology of old, native collections match the type of *D. repens* from Jamaica. Traditionally, *D. repens* and *D. erecta* are synonymous. It is not proposed here that they are clearly distinct species, but no infraspecific taxonomy is available to acknowledge the distinctive native forms apart from the form commonly cultivated.

## Glandularia {AFP}

1. Leaves deeply dissected, the leaf blade and segments linear and 0.5-2 mm wide; nutlet commissure subequal to the nutlet width, strongly angular at top ... *G. aristigera*

1. Leaves toothed, lobate, to dissected, the leaf blade broad, if dissected the segments 3-12 mm wide and oblong, lanceolate, or ovate [2]

2. Plant densely pilose ... *G. ×hybrida*

2. Plant glabrate, strigose, to moderately hispid [3]

3. Calyx eglandular, strigose ... *G. tampensis*

3. Calyx eglandular [4]

4. Leaves strigose, not succulent ... *G. canadensis*

4. Leaves glabrous to glabrate, somewhat succulent ... *G. maritima*

\****Glandularia aristigera*** (S.Moore)Tronc.— {AFP}

***Glandularia canadensis*** (L.)Small— {AFP}

^*Glandularia ×hybrida* (Grönland & Rümpler)G.L.Nesom & Pruski— {AFP}

***Glandularia maritima*** (Small)Small— {AFP} Endemic. State Endangered.

***Glandularia tampensis*** (Nash)Small— {AFP} Endemic. State Endangered.

**Lantana {AFP}** A number of cultivars are on the market. Some ('Gold', 'New Gold', 'Gold Mound') may resemble the native species (*L. depressa*, *L. sandersii*) and could be partly derived from them. Usually these cultivars have darker, mostly plane leaf blades, while those of the native species are generally lighter green and often involute. The cultivars may also be functionally sterile or nearly so (Czarnecki II 2011).

1. Inflorescence bracts ovate to lanceolate [2]

1. Inflorescence bracts linear to narrowly lanceolate [4]

2. Leaf blade margin coarsely crenate to dentate; corolla tube 8-10 mm long ... *L. montevidensis*

2. Leaf blade margin finely crenate, finely serrate, or subentire; corolla tube 4-6 mm long [3]

3. Leaf apex acute ... *L. canescens*
3. Leaf apex rounded ... *L. involucrata*
4. Stems without prickles; leaf blades generally light green (when fresh), often involute, (1.5)1.7-2.5(3) times longer than wide, corollas fairly uniformly colored within each inflorescence, yellow to yellow-orange from bud, opening, and to the older flowers, occasionally the outermost ring of flowers turning a dark orangeish [5]
4. Stems often with prickles, the prickles sometimes weak and sparse, sometimes prickles absent; leaf blades generally dark green (when fresh), mostly plane, 1–1.7(1.9) times longer than wide; corollas a mixture of contrasting colors within each inflorescence, differently colored from bud, opening, and/or to the older flowers, rarely the corollas nearly uniform in color, colors of the corolla may include various combinations and intergradations of white, yellow, orange, pink, to reddish orange [7]
5. Stems prostrate to decumbent, 0.1-0.3(0.6) m tall; leaf blades 1-3(4.5) cm long, mostly 3-10 teeth per side; fruit mostly 3-4 mm wide ... *L. depressa*
5. Stems mostly erect to ascending, sometimes spreading or partly clambering, 0.5-2(3) m tall; leaf blades 3-6.5 cm long, mostly 8-15 teeth per side; fruit mostly 4–5 mm wide [6]
6. Young stems glabrate, pubescent to moderately antrorsely pilose, the trichomes to 1.0(1.3) mm long ... *L. sandersii* var. *sandersii*
6. Young stems densely spreading to antrorsely pilose, the trichomes to 2.0 mm long ... *L. sandersii* var. *sanibelensis*
7. Larger blades usually >4 cm wide, mostly 1–1.5 times longer than wide, the base usually cordate, truncate, to subacute, usually shortly and narrowly cuneate into the petiole, usually not nigrescent upon drying ... *L. strigocamara*
7. Larger blades usually <4 cm wide, mostly 1.4–1.7 times longer than wide, the base acute to subtruncate, often gradually tapering from the outer blade base margin to the petiole, younger ones sometimes nigrescent upon drying [8]
8. Shrubs mostly >60 cm tall; stems ascending to erect; larger leaf blades (often more proximal on the stems) usually >2.9 cm long, >1.8 cm wide; peninsular Florida ... *L. ×floridana*
8. Shrubs mostly <1 m tall; stems spreading to ascending; larger leaf blades (often more proximal on the stems) mostly <4 cm long, <2.2 cm wide; Miami-Dade County ... *L. ×strigodepressa*

***Lantana canescens*** Kunth— {AFP} State Endangered.

***Lantana depressa*** Small— {AFP} Endemic. State Endangered. Miami-Dade Co.; pine rocklands. Previously treated as a variety (var. *depressa*), but it is much more distinct than var. *sanibelensis* (retained as a variety).

***Lantana ×floridana*** Raf.— {AFP} Endemic.

***Lantana involucrata*** L.— {AFP}

\****Lantana montevidensis*** (Spreng.) Briq.— {AFP}

***Lantana ×rubra*** Berland.— {AFP}

***Lantana sandersii*** A.R. Franck & Gann var. *sandersii*— {AFP} Endemic. State Endangered. Central and southern peninsula. Apparently extirpated from Osceola, Polk cos.

***Lantana sandersii*** A.R. Franck & Gann var. *sanibelensis* (R.W. Sanders) A.R. Franck & Gann— {AFP} Endemic. State Endangered. SW coast; barrier islands. Scarcely distinguishable from var. *sandersii*.

\****Lantana strigocamara*** R.W. Sanders— {AFP} Throughout; primarily disturbed areas. *Lantana camara* (native to the Neotropics, not known from Florida) has been widely, haplessly misapplied to this taxon.

## Lippia {AFP}

1. Erect shrub; petiole more or less distinct; leaf blades ovate-elliptic with crenate-dentate margins; peduncle 4-12 mm long ... *L. alba*

1. Decumbent to short-erect shrub; petiole indistinct; leaf blades linear-lanceolate with sharply acute teeth, the petiole indistinct and grading into the blade; peduncle 20-70 mm long ... *L. stoechadifolia*

^ *Lippia alba* (Mill.) N.E.Br. ex Britton & P. Wilson — {AFP}

***Lippia stoechadifolia*** (L.) Kunth — {AFP} State Endangered.

## Nashia

^ *Nashia inaguensis* Millsp. — {AFP}

## Petrea {AFP}

^ *Petrea volubilis* L. — {AFP}

## Phyla {AFP}

1. Leaf blades ovate to rhombic-ovate, the lower surface with the secondary veins prominent throughout, 6-8 per side, the basal pair of veins often branched and at a more acute angle than the upper veins, the margins sharply serrate with 8-10 teeth per side ... *P. fruticosa*

1. Leaf blades obovate, spatulate, to elliptic, the lower surface with the secondary veins obscure or only partly prominent and usually not prominent to the margin, 3-5 veins per side, the basal pair of veins usually unbranched or sparingly branched and not much different from the other veins, the margins entire to rounded-serrate with 3-8 teeth per side [2]

2. Leaf blades elliptic-lanceolate to rhombic-elliptic, 2.5-3.5 times longer than wide, usually toothed from below the middle or widest point to the tip ... *P. lanceolata*

2. Leaf blades mostly obovate, rhombic-ovate, spatulate, to elliptic-obovate, 1.5-3 times longer than wide, usually toothed at the middle or widest point to the tip only ... *P. nodiflora*

\* ***Phyla fruticosa*** (Mill.) K. Kenn. ex Wunderlin & B.F. Hansen — {AFP}

***Phyla lanceolata*** (Michx.) Greene — {AFP}

***Phyla nodiflora*** (L.) Greene — {AFP}

## Priva {AFP}

***Priva lappulacea*** (L.) Pers. — {AFP}

## Stachytarpheta {AFP}

1. Plant erect; leaf blade strongly rugose, with the tertiary and reticulate veins impressed on the upper surface; inflorescence rachis somewhat flexuous, 1-3 mm wide; floral bracts 3-5 × 1-2 mm, ovate-lanceolate, scariously margined mostly above the middle; furrows from the immersed flowers nearly as wide as the rachis ... *S. cayennensis*

1. Plant decumbent to erect; leaf blade not strongly rugose, the tertiary and reticulate veins not impressed or only slightly so on the upper surface (only the secondary veins conspicuously impressed); inflorescence rachis relatively stiff, 2-7 mm wide; floral bracts 4-8 × 1.5-2.5 mm, lanceolate-subulate, scariously margined below the middle; furrows from the immersed flowers narrower than the rachis ... *S. jamaicensis*

\* ***Stachytarpheta cayennensis*** (Rich.) Vahl — {AFP}

^ *Stachytarpheta frantzii* Pol.—

^ ***Stachytarpheta*** × *intercedens* Danser— {AFP}

***Stachytarpheta jamaicensis*** (L.) Vahl— {AFP}

^ *Stachytarpheta mutabilis* (Jacq.) Vahl— {AFP}

^ *Stachytarpheta urticifolia* Sims—

## Tectona

^ *Tectona grandis* L.f.—

## Verbena {AFP}

1. Spikes with flowers or fruits overlapping and mostly obscuring the rachis [2]

1. Spikes with the flowers or fruits scarcely or not overlapping, the rachis mostly plainly visible [7]

2. Plant procumbent to decumbent; leaf blades pinnately lobed or dissected; subtending floral bracts 3 times as long or longer than the calyx ... *V. bracteata*

2. Plant erect; leaf blades coarsely serrate; subtending floral bracts subequaling the calyx [3]

3. Leaf blade base cuneate [4]

3. Leaf blade base auriculate-clasping [5]

4. Central spikes sessile to subsessile, spikes rather congested in the inflorescence, 3–5 mm wide, fruits densely overlapping ... *V. brasiliensis*

4. Central spikes pedunculate, spikes mostly spread out in the inflorescence, 2–3 mm wide, with fruits usually becoming remote at least in the proximal portion ... *V. montevidensis*

5. Corolla tube 2.5–4 mm, subequaling the calyx; stems, peduncles, and calyces eglandular ... *V. incompta*

5. Corolla tube 4–9 mm, 1.5–5 mm longer than the calyx; distal stems, peduncles, and calyces stipitate-glandular [6]

6. Corolla tube 4–7 mm long, 1.5–2 mm longer than the calyces ... *V. bonariensis*

6. Corolla tube 6–9 mm long, ca. 2 times longer than the calyx ... *V. rigida*

7. Leaf blades dissected, lobed, entire, or with less than 10 teeth along the margin of one side of most leaves [8]

7. Leaf blades regularly toothed, with more than 12 teeth along the margin of one side of most leaves [10]

8. Basal leaf blades toothed; basal flowers or fruits nearly overlapping ... *V. simplex*

8. Basal leaf blades dissected or lobed; basal flowers widely spaced [9]

9. Basal and proximal leaves persistent at flowering time, the middle and distal ones reduced in number and size; fruit ca. 2 times as long as wide ... *V. halei*

9. Basal and proximal leaves deciduous at flowering time, the cauline ones evenly distributed and relatively even in size; fruit slightly longer than wide ... *V. officinalis*

10. Leaves sessile, the blade base cuneate, the petiole indistinct ... *V. carnea*

10. Leaves petiolate, the base rounded and abruptly tapered to a winged petiole [11]

11. Sepals much exceeding the fruit, the lobes connivent (converging over the fruit and producing a beak) ... *V. scabra*

11. Sepals subequal to the fruit, not connivent ... *V. urticifolia*

\* ***Verbena bonariensis*** L.— {AFP}

***Verbena bracteata*** Lag. & Rodr.— {AFP}

\* ***Verbena brasiliensis*** Vell.— {AFP}

***Verbena carnea*** Medik.— {AFP}

***Verbena halei*** Small— {AFP}  
\****Verbena incompta*** P.W.Michael— {AFP}  
\****Verbena montevidensis*** Spreng.— {AFP}  
***Verbena officinalis*** L.— {AFP}  
\****Verbena rigida*** Spreng.— {AFP}  
***Verbena scabra*** Vahl— {AFP}  
***Verbena simplex*** Lehm.— {AFP}  
***Verbena urticifolia*** L.— {AFP}

## LENTIBULARIACEAE {AFP}

1. Plant with evident, green, expanded leaf blades in a basal rosette, without bladder-like traps; calyx 5-lobed ... *Pinguicula*

1. Plant without evident leaf blades or the leaves filiform or linear, sometimes finely dissected, often with bladder-like traps, the leaves typically immersed in the water or soil; calyx 2-lobed ... *Utricularia*

### *Pinguicula* {AFP}

1. Basal leaf rosette (0.8)1-4(6) cm wide; corolla (4)8-18(22) mm wide, the hairy palate 1.5-2(2.5) mm long, included or barely exerted from the tube ... *P. pumila*

1. Basal leaf rosette 4-15 cm wide; corolla 18-35 mm wide, the hairy palate (1.5)3-10 mm long, conspicuously exerted from the tube [2]

2. Corolla yellow, rarely white (veins in tube and spur reddish to purplish), lobe ... *P. lutea*

2. Corolla violet, pink, blue, to white, sometimes darker or yellow in the throat or tube [3]

3. Scape non-glandular short-villous proximally for 1-4(5) cm, then gradually becoming sparsely to densely glandular distally; corolla lobes with dark blue veins throughout; palate white to greenish ... *P. caerulea*

3. Scape glabrous or sparsely to glandular-pubescent proximally, sparsely to densely glandular-pubescent distally; corolla lobes with obscure veins (sometimes dark and conspicuous only at the base of the lobe); palate yellow to brownish [4]

4. Leaves usually reddish when fresh, especially on the margins; corolla lobe ca. 2 times longer than wide, the sinus  $\frac{1}{3}$ - $\frac{1}{2}$  the lobe length ... *P. planifolia*

4. Leaves green when fresh; corolla lobe 0.9-1.4 times longer than wide, the sinus to  $\frac{1}{3}$  the lobe length [5]

5. Plants often singular or few overlapping together; corolla lobes longer than wide, with a ring of pink to dark purple at the base of the lobes, the tube similarly colored but sometimes paler; ... *P. ionantha*

5. Plants often in dense overlapping patches, forming new plants from the leaf tips (gemmaiparous); corolla lobes wider than or subequal to the length, with a ring of white at the base of the lobes (sometimes the lobes also white), yellow in the tube ... *P. primuliflora*

***Pinguicula caerulea*** Walter— {AFP} State Threatened.

***Pinguicula ionantha*** R.K.Godfrey— {AFP} Endemic. Federally Threatened. State Endangered.

***Pinguicula lutea*** Walter— {AFP} State Threatened.

***Pinguicula planifolia*** Chapm.— {AFP} State Threatened.

***Pinguicula primuliflora*** C.E.Wood & R.K.Godfrey— {AFP} State Endangered.

***Pinguicula pumila*** Michx.— {AFP}

### *Utricularia* {AFP}

1. Plant with a whorl of elongated floats at the base of the inflorescence, these usually at the water surface [2]
1. Plant without elongated floats [3]
2. Inflorescence with (4)8-14(17) flowers; bract subtending pedicel 3-5 mm long, longer than wide; pedicels recurving in fruit; corolla spur notched at tip ... *U. inflata*
2. Inflorescence with (1)3-5(7) flowers; bract subtending pedicel 1-2 mm long, about as wide as long; pedicels ascending in fruit (rarely recurved); corolla spur lacking a notch ... *U. radiata*
3. Corolla predominantly pink to purple or white, sometimes some lobes having yellow spots at the base [4]
3. Corolla predominantly yellow to greenish yellow, sometimes some lobes with reddish areas [6]
4. Inflorescence scape poorly developed, flowers appearing solitary emerging from the water; corolla white, 2-4 mm wide or long ... *U. olivacea*
4. Inflorescence scape well developed and apparent; corolla pink, purple, or white, 5-20 mm wide or long [5]
5. Plant usually floating; corolla upper lip (opposite the spur) suborbicular, about as wide as the lower lip (part with yellowish spot at base) ... *U. purpurea*
5. Plant usually terrestrial; corolla upper lip (opposite the spur) oblong-obovate, much narrower than the lower lip (part with yellowish spot at base) ... *U. resupinata*
6. Bracts and calyx lobes margins fimbriate ... *U. simulans*
6. Bracts and calyx lobes margins entire [7]
7. Pedicel subtended by 1 bract and 2 bracteoles; plant terrestrial [8]
7. Pedicel subtended 1 bracts, without bracteoles; plant terrestrial to aquatic [9]
8. Bladders 1-1.2 mm wide; calyx 1.5-3 mm long; fruit 1.5-2.5 mm long or wide ... *U. trinervia*
8. Bladders 0.3-0.8 mm wide; calyx (2.5)3-5(7) mm long; fruit 2.5-4.5 mm long or wide [9]
9. Inflorescence scape 0.5-1.5 mm wide near the base; flowers congested and overlapping at apex; spur 7-14 mm long ... *U. cornuta*
9. Inflorescence scape 0.4-1 mm wide near the base, greenish purple to purple; flowers spaced out, at least those towards the base not overlapping; spur 4-8(10) mm long ... *U. juncea*
10. Plant floating; inflorescence of (3)5-20 flowers, the scape 7-60 cm long, 1-3 mm wide; bracts subtending pedicel 1.8-4 mm long [11]
10. Plant floating or terrestrial; inflorescence of 1-4(8) flowers, the scape 0.3-18 cm long, 0.5-1 mm wide; bracts subtending pedicel 0.5-2.5 mm long [12]
11. Stolons dimorphic, some whitish, bearing bladders (often buried in substrate), others green, bearing dissected leaves with no or 1--few bladders (fewer bladders than on non-green stolons); scape often flexuous; pedicel spreading to ascending in fruit ... *U. floridana*
11. Stolons monomorphic, green, leaves bearing bladders; scape usually not flexuous; pedicel recurving in fruit ... *U. foliosa*
12. Bract subtending pedicel 1.2-2.5 mm long; pedicel 1-3 cm long; corollas pale yellow to greenish yellow, with conspicuous veins, lower lip with red streaks at base, continuing into spur, palate usually red-streaked; spur usually with shallow notch at apex, sometimes obscurely 3-fid; stolons radiating from base of inflorescence, whitish, bearing rhizoids ... *U. striata*
12. Bract subtending pedicel 0.5-1.5 mm long; pedicel 0.2-1 cm long; corollas yellow, without conspicuous veins (palate red-streaked in *U. gibba*); spur not notched at apex (sometimes slightly denticulate in *U. subulata*); base of inflorescence not bearing radiating stolons [13]
13. Bract basifixed; calyx 2-4 mm long; upper corolla lip 3-lobed (sometimes obscurely so) and nearly subequal in size to the 3-lobed to unlobed lower lip ... *U. gibba*
13. Bract peltate; calyx 1-2(2.5) mm long; upper corolla lip unlobed and distinctly smaller than the 3-lobed lower lip ... *U. subulata*



***Utricularia amethystina*** Salzm. ex A.St.-Hil. & Girard— {AFP}

***Utricularia cornuta*** Michx.— {AFP}

***Utricularia floridana*** Nash— {AFP}

***Utricularia foliosa*** L.— {AFP}

***Utricularia gibba*** L.— {AFP}

***Utricularia inflata*** Walter— {AFP}

***Utricularia juncea*** Vahl— {AFP}

***Utricularia olivacea*** C.Wright ex Griseb.— {AFP}

***Utricularia purpurea*** Walter— {AFP}

***Utricularia radiata*** Small— {AFP}

***Utricularia resupinata*** B.D.Greene ex Bigel.— {AFP}

***Utricularia simulans*** Pilg.— {AFP}

***Utricularia striata*** Leconte ex Torr.— {AFP}

***Utricularia subulata*** L.— {AFP}

## **BIGNONIACEAE** {AFP}

1. Leaves simple [2]

1. Leaves compound (sometimes simple or 1-foliolate on juvenile growth) [4]

2. Leaves opposite; stamens 2, staminodes 3; fruit a linear capsule ... *Catalpa bignonioides*

2. Leaves alternate or pseudowhorled; stamens 4, staminodes 1; fruit an enlarged berry or pepo [3]

3. Leaves alternate, the blade mostly obovate-elliptic; flowers borne along leafy stems ...

*Amphitecna latifolia*

3. Leaves pseudowhorled on short shoots of mature branches, the blade mostly narrowly oblanceolate; flowers often on leafless older stems or trunks ... *Crescentia cujete*

4. Leaves palmately compound or 2-foliolate and often with a terminal tendril (sometimes simple or 1-foliolate on juvenile growth) [5]

4. Leaves pinnately compound [10]

5. Trees; leaves palmately compound with 3-9 leaflets [6]

5. Vines; leaves 2-foliolate and often with a terminal tendril (sometimes simple or 1-foliolate on juvenile growth) [7]

6. Indumentum of simple, dendroid, or stellate hairs ... *Handroanthus*

6. Indumentum of lepidote scales ... *Tabebuia*

7. Plant tomentose, lepidote; fruit echinate ... *Amphilophium crucigerum*

7. Plant glabrous, glabrate, to puberulent; fruit smooth or ridged [8]

8. Tendrils short, tri-partite, the tips thickened, curved and claw-like; corolla lobes yellow with darker lines in throat ... *Dolichandra unguis-cati*

8. Tendrils elongate, simple or tri-partite or much-branched, the tips coiling and not claw-like and not thickened; corolla lobes orange, white, pinkish, or reddish [9]

9. Leaflets mostly elliptic-lanceolate to elliptic; corolla lobes white, pinkish, or reddish, lobes imbricate in bud; stamens included ... *Bignonia*

9. Leaflets mostly ovate; corolla lobes pinkish orange to bright reddish orange, valvate in bud; stamens exerted ... *Pyrostegia venusta*

10. Leaves ternately pinnate compound ... *Radermachera sinica*

10. Leaves pinnate or bipinnately compound

11. Leaves bipinnately compound ... *Jacaranda mimosifolia*

11. Leaves pinnately compound [12]

12. Trees; leaflets entire or toothed [13]

12. Vines or shrubs; leaflets toothed (at least some), rarely entire [14]  
 13. Leaflets toothed or entire; corolla white to pink or pink and white ... *Newbouldia laevis*  
 13. Leaflets entire; corolla orange to reddish orange ... *Spathodea campanulata*  
 14. Stems with adventitious roots; fruit fusiform, lignescent ... *Campsis radicans*  
 14. Stems without adventitious roots; fruit linear, papery [15]  
 15. Calyx 14-22 mm long; corolla white to pink with darkened veins ... *Podranea ricasoliana*  
 15. Calyx 3-8 mm long; corolla yellow or orange, sometimes with darkened veins [16]  
 16. Shrub; corolla yellow; stamens included, the anther thecae divaricate, attached only at tip of filament ... *Tecoma stans*  
 16. Vine; corolla orange; stamens exerted, the anther thecae fused to the connective ... *Tecomaria capensis*

### Amphilophium {AFP}

\**Amphilophium crucigerum* (L.)L.G.Lohmann— {AFP}

### Amphitecna {AFP}

*Amphitecna latifolia* (Mill.)A.H.Gentry— {AFP} Miami-Dade Co.; rare. Known from the greater Brickell Hammock area; possibly transplanted (via J.K. Small?) to the hammock near the living quarters of the Deering Estate.

### Bignonia {AFP}

1. Leaflets often widest below the middle with a broadly rounded base; corolla lobes white to lavender or purple ... *B. aequinoctialis*  
 1. Leaflets often widest near the middle with a somewhat auriculate base; corolla lobes pinkish orange, orange, to reddish orange ... *B. capreolata*

\**Bignonia aequinoctialis* L.— {AFP}

*Bignonia capreolata* L.— {AFP}

### Campsis {AFP}

*Campsis radicans* (L.)Seem.— {AFP}

### Catalpa {AFP}

*Catalpa bignonioides* Walter— {AFP}

### Crescentia {AFP}

^ *Crescentia cujete* L.— {AFP}

### Dolichandra {AFP}

\**Dolichandra unguis-cati* (L.)L.G.Lohmann— {AFP} Spreads via seed and stolons.

*Handroanthus* {AFP} Popular in cultivation, with showy flowers, often when leafless. All can sparingly naturalize.

1. Stems and leaflet lower surface densely tomentose; corolla yellow [2]  
 1. Stems and leaflet lower surface often glabrate; corolla pink to purple [3]

2. Calyx, fruit, and pedicels tomentose with shorter stellate trichomes; corolla lobes usually drying with conspicuously darker venation and more or less concolorous with the tube ...

*Handroanthus chrysanthus*

2. Calyx, fruit, and pedicels villous with long trichomes; corolla lobes drying with inconspicuous venation and conspicuously lighter than tube ... *Handroanthus chrysotrichus*

3. Leaflets of mature leaves regularly serrate; petiolules relatively long and slender, terminal petiolule subequal to leaflet width, the basal petiolules  $>1/2$  as long as adjacent sub-basal petiolules; fruit mostly  $<1.5$  cm wide, the valves thin, often longitudinally striate ...

*Handroanthus heptaphyllus*

3. Leaflets of mature leaves entire or slightly and irregularly serrate toward apex; terminal petiolule shorter than leaflet width, basal petiolules  $<1/2$  as long as adjacent sub-basal petiolules; fruit mostly  $>1.5$  cm wide, woody, usually smooth ... *Handroanthus impetiginosum*

^ *Handroanthus chrysanthus*—

^ *Handroanthus chrysotrichus* (Mart. ex DC.) Mattos— {AFP}

^ *Handroanthus heptaphyllus*—

^ *Handroanthus impetiginosum*—

## Jacaranda {AFP}

^ *Jacaranda mimosifolia* D. Don— {AFP} Sparingly naturalized.

## Newbouldia {AFP}

^ *Newbouldia laevis* (P. Beauv.) Seem. ex Bureau— {AFP}

## Pandorea

^ *Pandorea jasminoides* (Lindl.) K. Schum.—

## Parmentiera

^ *Parmentiera cereifera* Seem.—

## Podranea {AFP}

^ *Podranea ricasoliana* (Tanfani) Sprague— {AFP}

## Pyrostegia {AFP}

\* *Pyrostegia venusta* (Ker Gawl.) Miers— {AFP}

## Radermachera {AFP}

\* *Radermachera sinica* (Hance) Hemsl.— {AFP}

## Spathodea {AFP}

\* *Spathodea campanulata* P. Beauv.— {AFP}

## Tabebuia {AFP}

1. Leaflets mostly 5-7, mostly oblong-elliptic, petiolules of proximal leaflets elongate and to 15 mm long ... *T. aurea*

1. Leaflets mostly 3-5, mostly obovate-elliptic, petiolules of proximal leaflets short and usually  $<6$  mm long; corolla lavender or pink to white (yellowish in the throat) ... *T. heterophylla*

^ *Tabebuia aurea* (Silva Manso) Benth. & Hook.f. ex S. Moore— {AFP}

\* *Tabebuia heterophylla* (DC.) Britton— {AFP}

**Tecoma** {AFP}

\* *Tecoma stans* (L.) Juss. ex Kunth— {AFP}

**Tecomaria** {AFP}

\* *Tecomaria capensis* (Thunb.) Spach— {AFP}

**MARTYNIACEAE** {AFP}

1. Leaf blade dentate (usually at least some), sinuate, or entire; calyx of 5 free sepals; fertile stamens 2; corolla lobes yellow, the throat with red guidelines and spots; fruit surface strongly echinate; hairs on plant mostly <0.5 mm long, some longer, rarely reaching 1 mm ... *Ibicella lutea*

1. Leaf blade usually entire to sinuate; calyx of 5 sepal lobes, connate at the base, spathe-like; corolla lobes white, pink, to red-purple, the throat with reddish spots and yellow guidelines; fertile stamens 4; fruit surface roughly smooth, not echinate; hairs on plant commonly >0.5 mm long and some >1 mm long ... *Proboscidea louisianica*

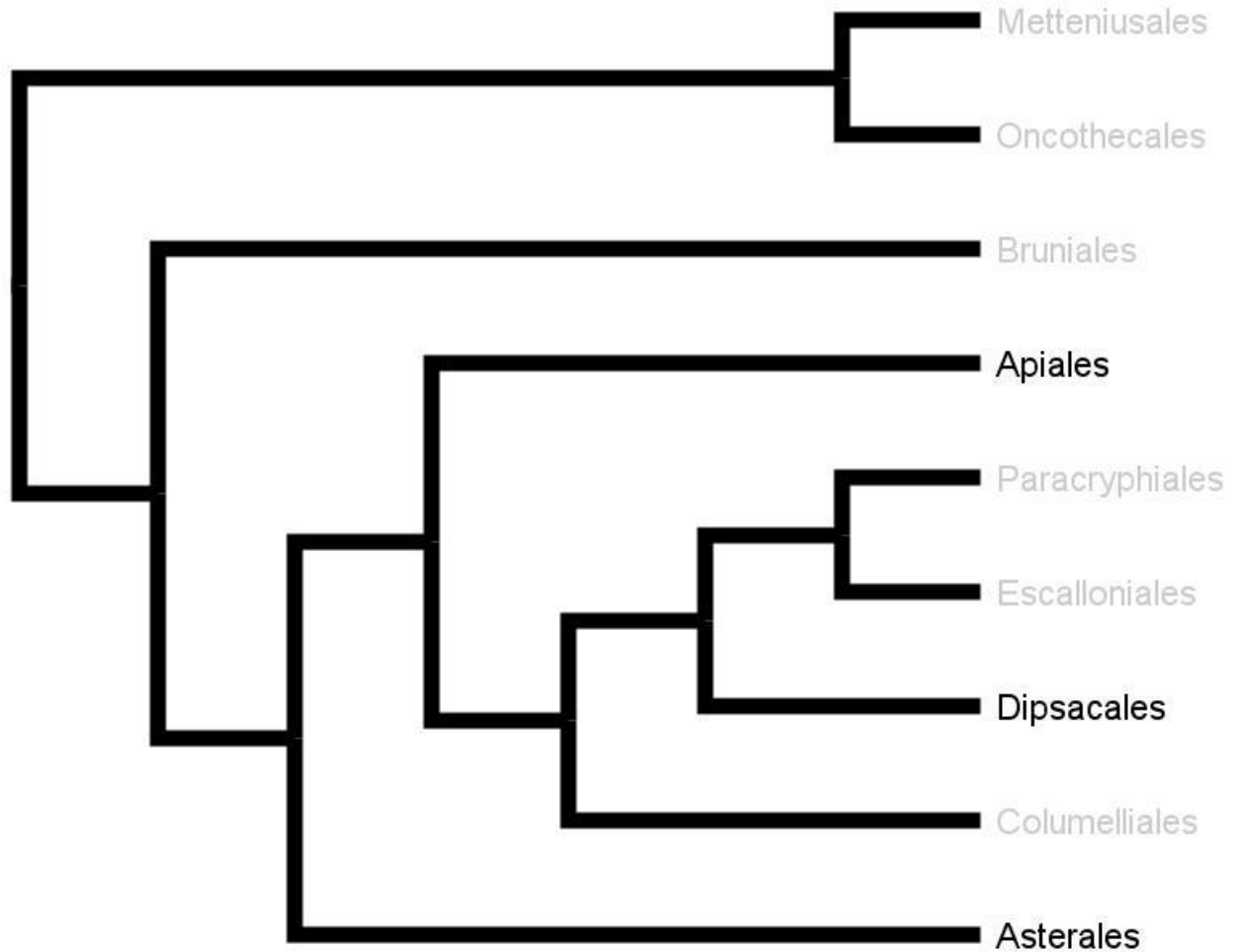
**Ibicella** {AFP}

\* *Ibicella lutea* (Lindl.) Van Eselt.— {AFP}

**Proboscidea** {AFP}

\* *Proboscidea louisianica* (Mill.) Thell.— {AFP}

## CAMPANULIDS



## APIALES

### APIACEAE {AFP}

1. Flowers in dense involucrate heads ... Eryngium
1. Flowers in simple or compound umbels [2]
2. Leaves all simple ... Key A
2. Leaves, at least some, compound or deeply dissected and nearly compound [3]
3. Fruit echinate, tuberculate, or hispid ... Key B
3. Fruit ribbed, winged, or smooth ... Key C

#### Key A: Leaves simple

1. Leaves septate, in shape linear, oblong, or terete [2]
1. Leaves not septate, in shape, cordate, suborbicular, to reniform [3]
2. Stoloniferous, creeping herb; leaves flattened ... Lilaeopsis
2. Erect herb; leaves terete ... Tiedemannia
3. Leaves sessile, distal ones perfoliate ... Bupleurum
3. Leave petiolate, not perfoliate [4]
4. Decumbent, only sparingly rooting at nodes; leaf blade usually conspicuously lobed ...  
Bowlesia
4. Stoloniferous and rooting at nearly all nodes; leaf blade not lobed ... Centella

Key B: Leaves compound or dissected, fruit echinate to hispid

1. Leaves palmately compound or dissected ... *Sanicula*
1. Leaves pinnately compound or dissected [2]
2. Ovary and fruit 5-10 times longer than wide ... *Scandix pectenveris*
2. Ovary and fruit 1-2 times longer than wide [3]
3. Fruit tuberculate or with hooked bristles ... *Spermolepis*
3. Fruit hispid or bristly, not hooked, sometimes curved or barbed [4]
4. Fruit winged, hispid ... *Angelica*
4. Fruit not winged, bristly [5]
5. Involucre of several trifid to pinnatifid bracts ... *Daucus*
5. Involucre absent or of 1-2 linear bracts ... *Torilis arvensis*

Key C: Leaves compound or dissected, fruit ribbed to smooth

1. Fruit 3-5 times longer than wide [2]
1. Fruit 1-2 times longer than wide [4]
2. Leaves 3-foliolate ... *Cryptotaenia canadensis*
2. Leaves 2- to 3-pinnately compound [3]
3. Ultimate leaf blade segments oblong-lanceolate, 1.2-4 mm wide; pedicel 1.5-8 mm long; calyx unapparent at magnification; lacking corky ribs ... *Chaerophyllum*
3. Ultimate leaf blade segments linear-lanceolate to filiform, 0.3-0.7 mm wide; pedicel 0-1.3 mm long; calyx evident at magnification; lighter-colored secondary ribs corky ... *Trepocarpus aethusae*
4. Involucel bracts present, conspicuous (subtending the cluster of pedicels) [5]
4. Involucel bracts absent or scale-like, occasionally with a [8]
5. Fruit with prominently winged lateral ribs, the other ribs low and blunt ... *Oxypolis*
5. Fruit ribs unwinged or the wings subequal [6]
6. Fruit ribs winged ... *Sium suave*
6. Fruit ribs unwinged [7]
7. Fruit ribs subequal in width ... *Ammi*
7. Fruit lateral ribs much wider than dorsal ones ... *Ptilimnium capillaceum*
8. Leaf blade segments entire [9]
8. Leaf blade segments toothed [11]
9. Inflorescence a sessile or subsessile fascicle of 1-3 simple umbels ... *Cyclosporum leptophyllum*
9. Inflorescence pedunculate, usually of 5-60 simple umbels [10]
10. Fruit dorsally flattened, lateral ribs winged; dill ... *Anethum graveolens*
10. Fruit subterete, lateral ribs not winged; fennel ... *Foeniculum vulgare*
11. Inflorescence a sessile or subsessile fascicle of 1-3 simple umbels; celery ... *Apium graveolens*
11. Inflorescence pedunculate, usually of 5-60 simple umbels [12]
12. Corolla yellow, greenish yellow, or purple [13]
12. Corolla white or greenish white [15]
13. Central flower or fruit of umbel sessile or subsessile ... *Zizia*
13. Central flower or fruit of umbel pedicellate [14]
14. Sepals absent or obsolete under magnification; parsley ... *Petroselinum crispum*
14. Sepals evident under magnification ... *Thaspium*
15. Fruit subglobose; coriander, cilantro ... *Coriandrum sativum*
15. Fruit compressed or flattened [16]
16. Fruit ribs winged ... *Ligusticum canadense*

- 16. Fruit ribs rounded [17]
- 17. Plant delicate, to 1 m tall ... *Angelica*
- 17. Plant robust, >1 m tall ... *Cicuta*

### **Ammi** {AFP}

- 1. Leaf segments toothed, not linear; base of umbel rays not forming a discoid structure ... *A. majus*
- 1. Leaf segments entire, linear to filiform; base of umbel rays forming a discoid structure (plexus) ... *A. visnaga*

\**Ammi majus* L.— {AFP}

\**Ammi visnaga* (L.)Lam.— {AFP}

### **Anethum** {AFP}

\**Anethum graveolens* L.— {AFP}

### **Angelica** {AFP}

- 1. Leaf segments coarsely toothed, the segments mostly with 1-5 teeth per side; inflorescence and fruit glabrous ... *A. dentata*
- 1. Leaf segments finely toothed, the segments mostly with 6-30 teeth per side; inflorescence and fruit pubescent ... *A. venenosa*

*Angelica dentata* (Chapm. ex Torr. & A.Gray)J.M.Coult. & Rose— {AFP}

*Angelica venenosa* (Greenway)Fernald— {AFP}

### **Apium** {AFP}

^ *Apium graveolens* L.— {AFP}

### **Bowlesia** {AFP}

\**Bowlesia incana* Ruiz & Pav.— {AFP}

### **Bupleurum** {AFP}

\**Bupleurum lancifolium* Hornem.— {AFP}

### **Centella** {AFP}

- 1. Leaf blade mostly wider than long; petals and fruits pinkish red to reddish purple or brownish red ... *C. asiatica*
- 1. Leaf blade usually longer than wide or width and length subequal; petals mostly white often with pinkish or reddish tips, fruits green ... *C. erecta*

^ *Centella asiatica* (L.)Urb.— {AFP} [Schubert \(2000: 36, 74, 89-103\)](#) supported treating this species as pantropical and the only member of the genus native outside of Africa (including *C. erecta* in synonymy), writing that "it is not unexpected to find variations in the morphology of different specimens of the extremely widespread *C. asiatica* [...] the previous splitting of *C. asiatica* into a number of species and varieties is not followed [...] the *C. asiatica* complex is exceptionally variable [...] the variation seems to be quantitative rather than qualitative".

***Centella erecta*** (L.f.)Fernald— {AFP} Sometimes included as a synonym of *C. asiatica* (Schubert 2000), and otherwise poorly distinguished when treated as a distinct species. Alqahtani et al. (2017) applied the name *C. erecta* and contrasted it with other taxa in Australia (putatively distinguished by underground, thicker stems, larger and more lustrous leaf blades, less dentate), but the study was based solely on Australian material.

### **Chaerophyllum** {AFP}

1. Light-colored ribs of fruits narrower than the dark-colored intervals between them ... *C. procumbens*

1. Light-colored ribs of fruit subequal to wider than the dark-colored interval between them ... *C. tainturieri*

***Chaerophyllum procumbens*** (L.)Crantz— {AFP}

***Chaerophyllum tainturieri*** Hook.— {AFP}

### **Cicuta** {AFP}

***Cicuta maculata*** L.— {AFP}

### **Coriandrum** {AFP}

^ *Coriandrum sativum* L.— {AFP}

### **Cryptotaenia** {AFP}

***Cryptotaenia canadensis*** (L.)DC.— {AFP} State Endangered.

### **Cyclospermum** {AFP}

\****Cyclospermum leptophyllum*** (Pers.)Sprague ex Britton & P.Wilson— {AFP}

### **Daucus** {AFP}

1. Involucral bracts trifid, scarcely bristly, scarious-margined, spreading or reflexed in fruit; prickles of fruit not barbed ... *D. carota*

1. Involucral bracts pinnatifid, bristly, not scarious-margined, appressed to the umbel in fruit; prickles of fruit apically barbed ... *D. pusillus*

\* *Daucus carota* L.— {AFP}

***Daucus pusillus*** Michx.— {AFP}

### **Eryngium** {AFP}

1. Most cauline leaves unlobed (sometimes the distalmost ones just below inflorescence lobed), toothed, the sinuses <1/2 the width from the midrib to the blade margin [2]

1. Cauline leaves palmately, pinnately, or apically lobed (basal ones often unlobed), the sinuses nearly reaching the midrib or petiole [6]

2. Leaf blade margin bristly or prickly, these 2-6 mm long [3]

2. Leaf blade margin entire to serrate, any bristle tips <0.6 mm long [5]

3. Plant leafy with fascicles of leaves subtending the inflorescence head; leaf margin dentate, the teeth (or lobes) spinose-tipped ... *E. foetidum*

3. Plant subscapose, bracts subtending inflorescences highly reduced and scarcely foliaceous; leaf margin straight or nearly so with bristles at intervals [4]



- 4. Leaves mostly 5-10 mm wide, bristles in fascicles of 2-4; involucre bracts linear-lanceolate ...  
E. yuccifolium var. synchaetum
- 4. Leaves mostly 10-30 mm wide, bristles mostly solitary; involucre bracts ovate-lanceolate ...  
E. yuccifolium var. yuccifolium
- 5. Leaf blade linear to narrowly lanceolate, 15-50 cm long, the margin entire to obscurely  
denticulate ... E. aquaticum
- 5. Leaf blade ovate to oblong-lanceolate, 2-10 cm long, the margin regularly crenate to serrate  
... E. integrifolium
- 6. Stems prostrate or weakly decumbent; inflorescence mostly solitary and axillary [7]
- 6. Stem erect to ascending, only basally decumbent; inflorescence mostly terminal and  
numerous [8]
- 7. Stem decumbent basally, and leafy nearly throughout; leaves primarily pinnately lobed, ... E.  
aromaticum
- 7. Stem erect, leafy primarily at the base and strongly reduce distally; leaves primarily apically  
lobed ... E. cuneifolium
- 8. Cauline leaves pinnatifid or pinnatisect; inflorescence heads 4-8 mm wide ... E. divaricatum
- 8. Cauline leaves mostly ternately to palmately lobed or dissected; inflorescence head 2.5-4.5  
mm wide [9]
- 9. Inflorescence head subhemispheric, subglobose, to ovoid, the involucre bracts usually not  
or barely laterally exceeding the basal flowers, the flowers exceeded by the subtending  
bracteoles ... E. baldwinii
- 9. Inflorescence head elliptic to subcylindric, the involucre bracts usually laterally exceeding  
the basal flowers, the flower subequal to the subtending bracteole ... E. prostratum

***Eryngium aquaticum*** L.— {AFP}

***Eryngium aromaticum*** Baldwin— {AFP}

***Eryngium baldwinii*** Spreng.— {AFP}

***Eryngium cuneifolium*** Small— {AFP} Endemic. Federally Endangered. State Endangered.

^ *Eryngium divaricatum* Hook. & Arn.— {AFP}

^ *Eryngium foetidum* L.— {AFP}

***Eryngium integrifolium*** Walter— {AFP}

***Eryngium prostratum*** Nutt. ex DC.— {AFP}

***Eryngium yuccifolium*** Michx.— {AFP}

**Foeniculum** {AFP}

^ *Foeniculum vulgare* Mill.— {AFP}

**Ligusticum** {AFP}

***Ligusticum canadense*** (L.) Vail— {AFP}

**Lilaeopsis** {AFP}

1. Leaves (6)8-30(5) cm long; peduncle much shorter than adjacent leaves; spongy tissue  
present in all 5 ribs of the mericarp ... L. carolinensis

1. Leaves 1-4(10) cm long; peduncle subequal to longer than adjacent leaves; spongy tissue  
confined to 2 lateral ribs of the mericarp ... L. chinensis

***Lilaeopsis carolinensis*** J.M.Coult. & Rose— {AFP} Native to some areas, but also naturalizing  
and spreading.

\**Lilaeopsis chinensis* (L.)Kuntze— {AFP}

### Oxypolis {AFP}

1. Most leaves pinnately compound with 5-9 lanceolate, 1-veined leaflets ... *O. rigidior*
1. Most leaves trifoliolate to simple with 1-3 linear-lanceolate, 3-veined leaflets ... *O. ternata*

*Oxypolis rigidior* (L.)Raf.— {AFP}

*Oxypolis ternata* (Nutt.)A.Heller— {AFP}

### Petroselinum {AFP}

^ *Petroselinum crispum* (Mill.)Fuss— {AFP}

### Ptilimnium {AFP}

*Ptilimnium capillaceum* (Michx.)Raf.— {AFP}

### Sanicula {AFP}

1. Staminate flowers 10-25; styles longer than the bristles on ovary or fruit [2]
1. Staminate flowers (0)3-8; styles subequal to shorter than the bristles on ovary or fruit [3]
2. Calyx lobes lanceolate, rigid, nearly free; petals greenish white; ovary or fruit bristles bulbous at base, not in rows; staminate flowers longer than fruits; fruit subsessile to sessile, not prickly basally ... *S. marilandica*
2. Calyx lobes ovate, subscarious, connate in basal third; petals yellowish green; ovary or fruit bristles gradually tapering to base, arranged in rows; staminate flowers shorter than fruits; fruit pedicellate, prickly basally ... *S. odorata*
3. Annual, roots fibrous; basal leaves to 4.5 cm wide; fruit pedicellate ... *S. canadensis*
3. Perennial, roots thickened and cord-like; basal leaves to 12 cm wide; fruit subsessile to sessile ... *S. smallii*

*Sanicula canadensis* L.— {AFP}

*Sanicula marilandica* L.— {AFP}

*Sanicula odorata* (Raf.)Pryer & Phillippe— {AFP}

*Sanicula smallii* E.P.Bicknell— {AFP}

### Scandix {AFP}

\**Scandix pecten-veneris* L.— {AFP}

### Sium {AFP}

*Sium suave* Walter— {AFP}

### Spermolepis {AFP}

1. Ovary and fruit tuberculate ... *S. divaricata*
1. Ovary and fruit echinate with hooked bristles ... *S. echinata*

*Spermolepis divaricata* (Walter)Raf.— {AFP}

*Spermolepis echinata* (Nutt. ex DC.)A.Heller— {AFP}

### Thaspium {AFP}

1. Cauline leaves 3-foliolate, blade margin glabrous with a whitish border, evenly and finely toothed ... *T. trifoliatum*

1. Cauline leaves 2- to 3-pinnately or ternately compound, blade margin coarsely toothed [2]

2. Cauline leaves 1–2-ternate, lower side glabrous or glabrate except along primary veins; fresh corolla golden yellow; peduncles and umbel rays glabrous or papillose-roughened on upper surface; fruits glabrous between and on the wings, fruit 5–6 mm long ... *T. barbinode*

2. Cauline leaves 2–3-ternate, lower side puberulent on surface and veins; fresh corolla pale yellow to creamy white; peduncles and umbel rays scabrellous on upper surface; fruits scabrellous between and sometimes on several wings, fruit 4–5 mm long ... *T. chapmanii*

***Thaspium chapmanii*** (Coult. & Rose) Small—{AFP} Sometimes included under *T. barbinode* (perhaps absent from Florida); see [Floden \(2019\)](#).

***Thaspium trifoliatum*** (L.) A. Gray— {AFP}

### **Tiedemannia** {AFP}

1. Phyllodes inconspicuously septate, joints not brittle; petals white ... *T. filiformis* subsp. *filiformis*

1. Phyllodes conspicuously septate, joints brittle and easily broken; petals garnet-maroon ... *T. filiformis* subsp. *greenmanii*

***Tiedemannia filiformis*** (Walter) Feist & S.R. Downie subsp. ***greenmanii*** (Mathias & Constance) Feist & S.R. Downie— {AFP} Endemic. State Endangered.

***Tiedemannia filiformis*** (Walter) Feist & S.R. Downie subsp. ***filiformis***— {AFP}

### **Torilis** {AFP}

\****Torilis arvensis*** (Huds.) Link— {AFP}

### **Trepocarpus** {AFP}

***Trepocarpus aethusae*** Nutt. ex DC.— {AFP}

### **Zizia** {AFP}

1. Basal leaves simple to 3-foliolate, cauline leaves 3-foliolate ... *Z. aptera*

1. Basal leaves 3-foliolate to pinnately or 2- to 3-ternately compound, cauline leaves 2- to 3-pinnately or -ternately compound and none or few distally 3-foliolate [2]

2. Leaf blade margins finely and evenly serrate ... *Z. aurea*

2. Leaf blade margins coarsely and unevenly crenate to dentate ... *Z. trifoliata*

***Zizia aptera*** (A. Gray) Fernald— {AFP}

***Zizia aurea*** (L.) Koch— {AFP}

***Zizia trifoliata*** (Michx.) Fernald— {AFP}

### **ARALIACEAE** {AFP}

1. Leaves simple [2]

1. Leaves compound [4]

2. Erect shrub to 3.5 m tall; leaf blade 10–50(70) cm long and wide ... *Tetrapanax papyrifer*

2. Vine or herb; leaf blade 0.5–12 cm long or wide [3]

3. Vines, the stems mostly above-ground and often with copious roots, the roots thickened and arising at nodes or internodes, the inflorescence terminal; leaves with stellate or scale-like trichomes ... *Hedera*

3. Rhizomatous or stoloniferous herbs, the stems below-ground or above-ground, the roots delicate and concentrated at the nodes, the inflorescence arising from the nodes of the horizontal stem; leaves glabrous or with simple hairs ... *Hydrocotyle*

4. Leaves palmately compound or trifoliolate [5]

4. Leaves pinnately to tripinnately compound [6]

5. Scandent or sprawling shrub; stems and petiole with prickles; leaves 3-foliolate ...  
*Eleutherococcus trifoliatus*

5. Erect tree or hemiepiphyte; stems and petioles without prickles; leaves 5- to 7-foliolate, at least on mature plants ... *Heptapleurum*

6. Stem armed with prickles; leaves 2- to 3-pinnately compound ... *Aralia spinosa*

6. Stem unarmed; leaves pinnately compound ... *Polyscias guilfoylei*

### **Aralia** {AFP}

*Aralia spinosa* L.— {AFP}

### **Eleutherococcus** {AFP}

\**Eleutherococcus trifoliatus* (L.)S.Y.Hu— {AFP}

### **Hedera** {AFP}

1. Trichomes white to orangish, stellate, the arms longer than the central body [2]

1. Trichomes orangish to reddish centrally, scale-like with a dentate or lobed margin, the sinuses shorter to subequal to the central body [4]

2. Trichomes whitish to orangish, rotate-stellate, the central body (8) 17-27(44) percent of the trichome width; tetraploid ... *H. hibernica*

2. Trichomes white, multiangulate-stellate, the central body (3)7-13(24) percent of the trichome width; diploid [3]

3. Leaves often heart-shaped ... *H. azorica*

3. Leaves rarely heart-shaped ... *H. helix*

4. Adult leaf blades (0.8)1.5-2.6(5.3) times longer than wide, juvenile blades (0.8)1.1-1.5(2.3) times longer; central lobe of lobate leaves (1.1)1.8-3.6(6.5) cm wide, (0.3)1.1-2.5(5) times longer than wide; trichome central body (0.075)0.116-0.176(0.309) mm wide, (26)48-72(96) percent of trichome width (Asia group of ~4 species) ... *H. colchica* and others

4. Adult leaf blades (0.8)1.1-1.7(3.8) times longer than wide, juvenile blades (0.8)0.9-1.1(1.5) times longer; central lobe of lobate leaves (0.9)2.9-5.3(9) cm wide, (0.4)0.6-1(2.9) times longer than wide; trichome central body (0.046)0.084-0.135(0.137) mm wide, (21)34-53(71) percent of the trichome width (western Mediterranean basin group of ~5 species) [5]

5. Adult leaves (1)1.2-2.8(3.3) times longer than wide; trichomes with 15-20(23) teeth; tetraploid ... *H. algeriensis*

5. Adult leaves 1-1.1(1.5) times longer than wide; trichomes (7)11-16(24) teeth; diploid ... *H. canariensis*

\**Hedera algeriensis* Hibberd— {AFP}

\**Hedera helix* L.— {AFP}

### **Heptapleurum** {AFP}

1. Shrub or tree to 12 m tall; leaflets (3)7-16, the blade 10-30 cm long; inflorescence arms 30-80 cm long; ovary 10- to 12-carpellate (often naturalized) ... *H. actinophyllum*

1. Shrub to 4 m tall; leaflets (3)7-9(10) blade 5-12 cm long; inflorescence arms 10-22 cm long; ovary 5- to 7-carpellate (rarely escaping) ... *H. arboricola*

\****Heptapleurum actinophyllum*** (Endl.)Lowry & G.M.Plunkett— {AFP}

^ *Heptapleurum arboricola* Hayata— {AFP} Sparingly naturalized.

## Hydrocotyle {AFP}

1. Leaf blade peltate or not, with a distinct sinus, often extending to the petiole or nearly so, most blades with at least one sinus  $> \frac{1}{2}$  of the blade width or length [2]

1. Leaf blade peltate, nearly rotund lacking a sinus or the sinus  $< \frac{1}{4}$  of the blade width or length [4]

2. Leaves hairy ... *H. bowlesioides*

2. Leaves glabrous [3]

3. Stems and petioles mostly 2-4 mm wide; leaves to 8 cm long or wide ... *H. ranunculoides*

3. Stems and petioles 0.5-1.5 mm wide; leaves to 1.5 cm long or wide ... *H. sibthorpioides*

4. Inflorescence a simple or compound umbel [5]

4. Inflorescence a spike or raceme [6]

5. Inflorescence a compound umbel ... *H. bonariensis*

5. Inflorescence a simple umbel, very rarely if ever compound ... *H. umbellata*

6. Flower or fruit with a pedicel up to 10 mm long ... *H. verticillata* var. *triradiata*

6. Flower or fruit sessile to subsessile, the pedicel  $< 1$  mm long ... *H. verticillata* var. *verticillata*

\****Hydrocotyle bonariensis*** Comm. ex Lam.— {AFP} Probably introduced via ports. Prior to the 1930s, it was primarily known from the Jacksonville and Pensacola areas.

\****Hydrocotyle bowlesioides*** Mathias & Constance— {AFP}

***Hydrocotyle ranunculoides*** L.f.— {AFP}

\****Hydrocotyle sibthorpioides*** Lam.— {AFP}

***Hydrocotyle umbellata*** L.— {AFP}

***Hydrocotyle verticillata*** Thunb. var. ***triradiata*** (A.Rich.)Fernald— {AFP} Sometimes treated as *H. prolifera*, an invalid name according to IPNI (see Mathias 1936; Fernald 1939).

***Hydrocotyle verticillata*** Thunb. var. ***verticillata***— {AFP}

## Polyscias {AFP}

^ *Polyscias guilfoylei* (W.Bull)L.H.Bailey— {AFP}

## Tetrapanax {AFP}

\****Tetrapanax papyrifer*** (Hook.)K.Koch— {AFP}

## PITTOSPORACEAE {AFP}

### Pittosporum {AFP}

1. Leaf blade 2.5-9 times longer than wide, the margins mostly plane, the apex acute; fruit dehiscent by 2 valves ... *P. pentandrum*

1. Leaf blade 2-3 times longer than wide, the margins usually revolute, the apex rounded; fruit dehiscent by 3 valves ... *P. tobira*

\****Pittosporum pentandrum*** (Blanco)Merr.— {AFP}

^ *Pittosporum tobira* (Thunb.) Aiton— {AFP}

## DIPSACALES

### CAPRIFOLIACEAE {AFP}

1. Erect herb ... *Valerianella radiata*

1. Vines, or erect shrubs [2]

2. Herbaceous vines; leaf blade ovate-cordate to palmately divided; corolla 2 mm long; fruit a plumose achene ... *Valeriana scandens*

2. Woody vines or shrubs; leaf blade ovate, elliptic, oblong, to orbicular; corolla 10-50 mm long; fruit an achene, berry, or drupe [3]

3. Shrubs; sepal lobes generally oblong and conspicuous, 4-6 mm long; stamens 4; ovary 3-locular; fruit an achene ... *Abelia ×grandiflora*

3. Shrubs or vines; sepal lobes reduced and inconspicuous, 0.5-2 mm long; stamens 5; ovary 2- to 4-locular; fruit a berry or achene [3]

4. Vines (native and naturalized spp.) or shrubs (cultivated); corolla 10-50 mm long; ovary 2- or 3-locular; fruit a few- to several-seeded berry ... *Lonicera*

4. Shrubs; corolla 3-5 mm long; ovary 4-locular, 2 being sterile; fruit a 2-seeded drupe ... *Symphoricarpos orbiculatus*

### *Abelia* {AFP}

1. Flowers paired; epicalyx bracts 6; calyx lobes 5; corolla white ... *A. chinensis*

1. Flowers singular; epicalyx bracts 4; calyx lobes 2-5; corolla white to pink, sometimes with orange markings ... *A. ×grandiflora*

^ *Abelia chinensis* R.Br.—

^ *Abelia ×grandiflora* (Rovelli ex André) Rehder— {AFP}

### *Lonicera* {AFP}

1. Shrubs (cultivated or persistent) ... *Lonicera* spp.

1. Vines (native or non-native) [2]

2. Leaves below the inflorescence separate, petiolate; corolla white, yellow, to pinkish, lobes subequal to the tube; fruit dark ... *L. japonica*

2. Leaves below the inflorescence connate; corolla red, lobes much shorter than the tube; fruit orange-red ... *L. sempervirens*

\* *Lonicera japonica* Thunb.— {AFP}

*Lonicera sempervirens* L.— {AFP}

### *Symphoricarpos* {AFP}

*Symphoricarpos orbiculatus* Moench— {AFP} State Endangered.

### *Valeriana* {AFP}

*Valeriana scandens* L.— {AFP}

### *Valerianella* {AFP}

*Valerianella radiata* (L.) Dufr.— {AFP}

### VIBURNACEAE {AFP}

1. Leaves compound ... Sambucus
1. Leaves simple ... Viburnum

### **Sambucus** {AFP}

***Sambucus canadensis*** L.— {AFP} Because of the perceived paucity of morphological distinction among many geographically separated groups, the American representatives have been treated as subspecies of *S. nigra* (Bolli 1994; Eriksson & Donoghue 1997; Applequist 2015). A few samples were compared with ITS sequence data (Waswa et al. 2022).

### **Viburnum** {AFP}

1. Leaf blade base rounded to cordate, entire to coarsely dentate [2]
1. Leaf blade base cuneate, finely or obscurely crenate or serrate, undulate to entire [6]
2. Leaf blade shallowly 3-lobed ... *V. acerifolium*
2. Leaf blade unlobed [3]
3. Leaves evergreen; petiole stout, 1-2 mm wide; leaf blade coriaceous, with 3-6 pairs of lateral veins, tertiary venation visible and often impressed (cultivated or persistent only) ... *V. suspensum*
3. Leaves deciduous; petiole weak, 0.5-1 mm wide; leaf blade chartaceous, with 4-10 pairs of lateral veins, tertiary venation unapparent or inconspicuous, scarcely if at all impressed [4]
4. Stipules absent; leaf blade lower side dull green with contrasting tawny veins, often long acuminate and falcately serrate ... *V. pubescens*
4. Stipules present or absent; leaf blade lower side without contrasting tawny veins, mostly acute and not falcately serrate [5]
5. Stipules often present; leaf blade upper surface not scabrous (or rarely so), with mostly appressed, singular hairs, few fasciculate, the lower surface nearly glabrous except on the veins; peduncle without fasciculate hairs, or only near the base ... *V. carolinianum*
5. Stipules rarely present; leaf blade upper surface scabrous with somewhat ascending to erect, fasciculate hairs, the lower surface usually densely fasciculate-hispid; peduncle usually densely fasciculate-hispid ... *V. scabrelluum*
6. Shrub or tree to 10(15) m tall; leaves to 20 cm long, to 9 cm wide; inflorescence in a pyramidal panicle array ... *V. odoratissimum*
6. Shrub or tree to 5 m tall; leaves to 15 cm long, to 6 cm wide; inflorescence in a terminal compound umbelliform array [7]
7. Petiole <1.5 cm long; leaf blade spatulate, <3.1 cm long, <1.1 cm wide ... *V. obovatum*
7. Petiole >0.5 cm long; leaf blade elliptic to obovate, >3 cm long, >1 cm wide [8]
8. Leaf blade finely serrate; peduncles <0.5 cm long ... *V. rufidulum*
8. Leaf blade crenate, undulate to entire; peduncles 1-4 cm long [9]
9. Petiole 0.8-1.3 cm long; leaf blade (3.9)4.2-8.3(8.6) cm long, 1.7-3.4(3.7) cm wide, (1.6)1.9-2.7(3) times longer than wide, ca. (5.5)6-19(23) sq. cm in area, the perimeter ca. 10-22 cm; peduncle (12)15-37 mm long, primary branches 10-22 mm long; stone ridged and grooved ... *V. nitidum*
9. Petiole 1-2.1 cm long; leaf blade (6.5)6.8-9.5(10.8) cm long, (3)3.1-5.3 cm wide, 1.6-2.3(2.5) times longer than wide, ca. (15.8)18-40(44) sq. cm in area, the perimeter ca. 17-29 cm; peduncle (21)24-51(58) mm long, primary branches (15)18-30 mm long; stone smooth ... *V. nudum*

### ***Viburnum acerifolium*** L.— {AFP}

***Viburnum carolinianum*** Ashe—Reported for Florida (McAtee 1956).

***Viburnum nitidum*** Aiton— Apparently common but difficult to distinguish from *V. nudum* (Spriggs et al. 2019).

***Viburnum nudum*** L.— {AFP}

***Viburnum obovatum*** Walter— {AFP}

^ ***Viburnum odoratissimum*** Ker Gawl.— {AFP}

***Viburnum pubescens*** (Aiton)Pursh— Reported for Florida (McAtee 1956).

***Viburnum rufidulum*** Raf.— {AFP}

***Viburnum scabrellum*** (Torr. & A.Gray)Chapm.— The common form in Florida, apparently *V. dentatum* s.str. not occurring here (McAtee 1956).

## ASTERALES

### CAMPANULACEAE {AFP}

1. Flower and fruit sessile ... Triodanis

1. Flower and fruit pedicellate, the pedicel 1-11 mm long [2]

2. Filaments and anthers connate into a tube [3]

2. Filaments and anthers free [4]

3. Corolla actinomorphic or nearly so ... Hippobroma longiflora

3. Corolla zygomorphic ... Lobelia

4. Cauline leaves mostly 1.5-6 times longer than wide; corolla rotate; fruit opening by 3-5 lateral pores ... Campanula

4. Cauline leaves mostly 9-16 times longer than wide; corolla funnelform to campanulate; fruit opening by 2-3 apical pores ... Wahlenbergia

### Campanula {AFP}

1. Plant 35-140 cm tall; stem stout, erect, 2-12 mm wide at the base; leaves 3-16 cm long, serrate to crenate ... *C. americana*

1. Plant 3-35 cm tall; stem weak, erect to decumbent, ca. 1 mm wide at the base; leaves 0.2-2 cm long, entire to crenate [2]

2. Larger leaves 12-20 mm long; sepals 6-9 mm long; corolla 14-18 mm wide ... *C. floridana*

2. Larger leaves 3-8 mm long; sepals 1-2.5 mm long; corolla 7-8 mm wide ... *C. robinsiae*

***Campanula americana*** L.— {AFP}

***Campanula floridana*** S.Watson ex A.Gray— {AFP} Endemic.

***Campanula robinsiae*** Small— {AFP} Endemic. Federally Endangered. State Endangered. Hernando, Hillsborough cos.

### Hippobroma {AFP}

\****Hippobroma longiflora*** (L.)G.Don— {AFP}

### Lobelia {AFP}

1. Leaves near the base of the plant broadly ovate to semi-orbicular, 1-2 times long as wide, the blade base abruptly tapered or truncate to a distinct petiole [2]

1. Leaves near the base of the plant linear to ovate, 2.1-50 times long as wide, the blade base acute to gradually tapered, the petiole indistinct to distinct [3]

2. Leaf blade coarsely dentate, sinuate-crenate, to incised-dentate, ovate to semi-orbicular, truncate-cuneate to cordate at the base; fruit 6-7 mm long ... *L. homophylla*



2. Leaf blade entire to sinuate; fruit 2-4 mm long ... *L. feayana*
3. Plants 0.4-2 m tall; stems 2-8 mm wide at base; cauline leaves (at least larger ones) 8-65 mm wide, 25-200 mm long [4]
3. Plants 0.3-1.2 m tall; stems 1-5 mm wide at base; cauline leaves 0.5-8 mm wide, 10-50 mm long [9]
4. Leaves to 18 cm long and 6 cm wide; corolla pink to red (rarely white), 2.5-5 cm long; filament-tube 13-33 mm long ... *L. cardinalis*
4. Leaves to 10 cm long and 4 cm wide; corolla white, lavender, to blue, 0.7-3 cm long; filament-tube 2-15 mm long [5]
5. Auricles very large and conspicuous, covering almost half of calyx tube; lower corolla lip often short-pubescent basally near the throat ... *L. rogersii*
5. Auricles smaller, less than 1/4 length of calyx tube or absent; lower lip of corolla mostly glabrous basally near the throat (exterior of tube can be pubescent) [6]
6. Stems usually densely pubescent throughout (also within inflorescence), but occasionally sparsely pubescent to almost glabrous; calyx lobes lanceolate and mostly erect, typically not flexuous or widely spreading; margins of calyx lobes often ciliate, occasionally glabrous; calyx tube densely hirsute to glabrous; auricles present or absent; corolla tube usually pubescent on the outside, rarely glabrous ... *L. puberula*
6. Stems sparsely (rarely moderately) pubescent to glabrous, usually hairier at base; calyx lobes linear or lanceolate and erect or spreading or flexuous (especially the tip, sometimes twisted); margins of calyx lobes glabrous; calyx tube smooth to verrucose, very rarely sparsely hirsute; auricles absent to almost obsolete; corolla tube glabrous or sparsely pubescent in lines [7]
7. Leaves thick or thin, whitish to greenish underneath; uppermost leaves entire or toothed; calyx segments entire, not toothed ... *L. amoena*
7. Leaves typically thick with a parchment-like texture and sometimes with a bluish to gray-green sheen when dried (typically strongly glaucous underneath); uppermost leaves distinctly toothed; some calyx segments with a few slender, flexuous teeth (at least on some flowers) [8]
8. Calyx tube long-hirsute to glabrous; corolla tube glabrous or pubescent in lines externally, lower lip of corolla distinctly pubescent with villous hairs on upper surface near throat of tube ... *L. apalachicolensis*
8. Calyx tube usually glabrous, rarely with a few scattered chaffy hairs; corolla tube glabrous externally, lower lip of corolla typically glabrous on upper surface near throat of tube, but occasionally papillate or minutely pubescent with very short hairs; ... *L. georgiana*
9. Stems subscapose, principal leaves basal (or rarely in the bottom quarter of the plant height) and large and present at flowering, those along the stem usually few, bract-like, and very strongly reduced and very small relative to the basal ones [10]
9. Stems leafy, those along the stem numerous to few and only gradually reduced upwards, basal leaves present or absent at flowering (absent if stem appearing subscapose) [11]
10. Calyx lobe sinus with small auricles; corolla not fenestrate; staminal tube 6-11 mm long ... *L. floridana*
10. Calyx lobe sinus lacking auricles; corolla fenestrate (lateral slits near base betwixt calyx lobes); staminal tube 3-5 mm long ... *L. paludosa*
11. Stem leaves <1.1 mm wide ... *L. boykinii*
11. Stem leaves >1.3 mm wide [12]
12. Leaves 3-5 times longer than wide, <3.1 cm long, ... *L. brevifolia*
12. Leaves 6-24 times longer than wide, usually at least some >3 cm long [13]
13. Flowers 5-10 mm long; staminal tube 2.5-3.5 mm long ... *L. nuttallii*
13. Flowers 12-30 mm long; staminal tube 5-8 mm long [14]

14. Annual, usually drying pale to light greenish; stem mostly straight; upper cauline leaves subentire to obscurely toothed; pedicel with two conspicuous linear, foliaceous, acute-tipped bracteoles borne above the base of pedicel; corolla tube usually not fenestrate ... *L. flaccidifolia*  
14. Perennial, usually drying with darker green; stem often slightly zigzagged; cauline leaves prominently denticulate; pedicel with inconspicuous gland-tipped, oval to oblong bracteoles borne at base and often hidden by bract; corolla tube fenestrate ... *L. glandulosa*

***Lobelia amoena*** Michx.— {AFP}

***Lobelia apalachicolensis*** D.D.Spaulding et al.— {AFP} Endemic.

***Lobelia boykinii*** Torr. & A.Gray ex A.DC.— {AFP} State Endangered.

***Lobelia brevifolia*** Nutt. ex A.DC.— {AFP}

***Lobelia cardinalis*** L.— {AFP} State Threatened.

***Lobelia feayana*** A.Gray— {AFP}

***Lobelia flaccidifolia*** Small— {AFP}

***Lobelia floridana*** Chapm.— {AFP}

***Lobelia georgiana*** McVaugh— {AFP}

***Lobelia glandulosa*** Walter— {AFP}

***Lobelia homophylla*** E.Wimm.— {AFP} Endemic.

***Lobelia nuttallii*** Schult.— {AFP}

***Lobelia paludosa*** Nutt.— {AFP}

***Lobelia puberula*** Michx.— {AFP}

***Lobelia rogersii*** Bowden— {AFP}

### Triodanis {AFP}

1. Leaves longer than wide, becoming ovate to narrowly lanceolate below the flowers; open chasmogamous flowers 1-2 at the stem apex (the closed cleistogamous flowers below these in the inflorescence); pores of the capsule near the apex ... *T. biflora*

1. Leaves as wide as or wider than long, generally semi-orbicular below the flowers; open chasmogamous flowers more than 2 at the stem apex (the closed cleistogamous flowers below these in the inflorescence); pores of the capsule near or below the middle ... *T. perfoliata*

***Triodanis biflora*** (Ruiz & Pav.)Greene— {AFP}

***Triodanis perfoliata*** (L.)Nieuwl.— {AFP}

### Wahlenbergia {AFP}

1. Flowering hypanthium 3.5-4.5 mm long, narrowly obconic to subcylindric, to 12 mm long in fruit and subcylindric; corolla white; stigma 2-lobed; fruit opening by 2 terminal pores; seeds broadly elliptic ... *W. linarioides*

1. Flowering hypanthium 1.5-3 mm long, ellipsoid to ovoid, to 7.5 mm long in fruit and obconic-obovoid; corolla pale blue, lavender, purple, to deep blue; stigma 3-lobed; fruit opening by 3 terminal pores; seeds oblong ... *W. marginata*

\****Wahlenbergia linarioides*** (Lam.)A.DC.— {AFP}

\****Wahlenbergia marginata*** (Thunb.)A.DC.— {AFP}

### MENYANTHACEAE {AFP}

#### Nymphoides {AFP}

1. Corolla conspicuously fimbriate on the inner surface [2]

1. Corolla glabrous, without fimbriae on the inner surface (margins sometimes short-fimbriate) [4]
2. Corolla lobes yellow ... *N. grayana*
2. Corolla lobes white (throat may be yellowish) [3]
3. Anthers dark; seeds etuberculate ... *N. humboldtiana*
3. Anthers light yellowish; seeds tuberculate ... *N. indica*
4. Corolla lobes yellow ... *N. peltata*
4. Corolla lobes white (throat may be yellowish) [5]
5. Floating leaf blades ovate to reniform, the lower surface conspicuously roughened; fruit much exceeding the calyx ... *N. aquatica*
5. Floating leaf blades cordate-ovate, the lower surface smooth to slightly rough; fruit not or only slightly exceeding the calyx [6]
6. Corolla lobes without a median longitudinal crest; seeds eturbuculate ... *N. cordata*
6. Corolla lobes with a median longitudinal crest; seeds tuberculate ... *N. cristata*

***Nymphoides aquatica*** (J.F.Gmel.)Kuntze— {AFP}

***Nymphoides cordata*** (Elliott)Fernald— {AFP}

\****Nymphoides cristata*** (Roxb.)Kuntze— {AFP}

\*\****Nymphoides grayana*** (Griseb.)Kuntze— {AFP}

\****Nymphoides humboldtiana*** (Kunth)Kuntze— {AFP}

\****Nymphoides indica*** (L.)Kuntze— {AFP}

\****Nymphoides peltata*** (S.G.Gmel.)Kuntze— {AFP}

## GOODENIACEAE {AFP}

### *Scaevola* {AFP}

1. Leaves 5-10 cm long, usually held stiff and mostly straight, thick and succulent, the midvein often disappearing around mid-blade, lateral veins scarcely evident; inflorescence of 1-3(5) flowers; calyx lobes to 1 mm long; fruit black ... *S. plumieri*

1. Leaves 9-25 cm long, lax and recurved, rather membranaceous, the midvein extending nearly throughout blade, lateral veins often discernible; inflorescence of 1-15 flowers; calyx lobes 3-5 mm long; fruit white to yellowish white ... *S. taccada*

***Scaevola plumieri*** (L.)Vahl— {AFP} State Threatened.

\****Scaevola taccada*** (Gaertn.)Roxb.— {AFP}

## CALYCERACEAE {AFP}

### *Acicarpa* {AFP}

\****Acicarpa tribuloides*** Juss.— {AFP}

## ASTERACEAE {AFP}

subf. Carduoideae: *Centaurea*, *Cirsium*, *Onopordum*

subf. Mutisioideae: *Chaptalia*, *Gerbera*

subf. Vernonioideae

Erlangeinae: *Cyanthillium*

Elephantopinae: *Elephantopus*, *Pseudelephantopus*

Stokesiinae: *Stokesia*

Vernoniinae: *Vernonia*

Lynchnophorinae: *Centratherum*

subf. Artcotideae: Haplocarpha  
subf. Cichorioideae  
    Cichoriinae: Cichorium  
    Crepidinae: Crepis, Nabalus, Taraxacum, Youngia  
    Hieraciinae: Hieracium, Pilosella  
    Hyoseridinae: Launaea, Sonchus  
    Hypochaeridinae: Hypochaeris  
    Lactucinae: Lactuca  
    Microseridinae: Krigia, Lygodesmia, Pyrrhopappus  
subf. Asteroideae, Anthemideae  
    Anthemidinae: Anthemis  
    Arthemisiinae: Artemisia  
    Cotulinae: Cotula, Soliva  
    Glebionidinae: Glebionis  
    Leucantheminae: Leucanthemum  
    Matricariinae: Achillea  
    Santolininae: Cladanthus  
subf. Asteroideae, Astereae  
    Boltoniinae: Boltonia  
    Baccharidinae: Baccharis  
    Chrysopsidinae: Bradburia, Chrysopsis, Croptilon, Heterotheca, Pityopsis  
    Conyzinae: Aphanostephus, Erigeron  
    Doellingeriinae: Doellingeria  
    Gutierrezinae: Bigelowia, Euthamia  
    Ionactinae: Ionactis  
    Machaerantherinae: Eurybia, Rayjacksonia  
    Oclemeninae: Oclemena  
    Solidagininae: Brintonia, Chrysoma, Sericocarpus, Solidago  
    Symphyotrichinae: Ampelaster, Symphyotrichum  
subf. Asteroideae, Bahieae: Hymenopappus, Palafoxia  
subf. Asteroideae, Coreopsidae: Bidens, Coreopsis, Cosmos  
subf. Asteroideae, Eupatorieae  
    Ageratinae: Ageratum, Conoclinium  
    Alomiinae: Brickellia  
    Critoniinae: Koanophyllon  
    Eupatoriinae: Eupatorium, Eutrochium  
    Fleischmanniinae: Fleischmannia  
    Liatrinae: Carphophorus, Garberia, Hartwrightia, Liatris  
    Mikaniinae: Mikania  
    Oxylobinae: Ageratina  
    Praxelinae: Chromolaena, Praxelis  
    Trichocoroninae: Sclerolepis  
subf. Asteroideae, Gnaphalieae: Antennaria, Facelis, Filago, Gamochaeta, Pseudognaphalium  
subf. Asteroideae, Helenieae  
    Gaillardiinae: Balduina, Gaillardia, Helenium  
    Marshalliinae: Marshallia  
subf. Asteroideae, Heliantheae  
    Ambrosiinae: Ambrosia, Iva, Parthenium, Xanthium  
    Ecliptinae: Calyptocarpus, Eclipta, Melanthera, Pascalia, Sphagneticola, Synedrella

- Engelmanniinae: Berlandiera, Borrichia, Chrysogonum, Silphium
- Helianthinae: Helianthus, Lagascea, Phoebanthus, Tithonia
- Rudbeckiinae: Ratibida, Rudbeckia
- Spilanthinae: Acmeella
- Verbesininae: Verbesina
- Zinniinae: Echinacea, Heliopsis, Zinnia
- subf. Asteroideae, Inuleae
  - Inulinae: Dittrichia, Pulicaria
  - Plucheinae: Pluchea, Pterocaulon, Sachsia
- subf. Asteroideae, Madieae: Arnica
- subf. Asteroideae, Millerieae
  - Dyscritothamninae: Tetragonotheca, Tridax
  - Galinsoginae: Galinsoga
  - Melampodiinae: Acanthospermum, Melampodium
  - Milleriinae: Smallanthus
- subf. Asteroideae, Neurolaeneae: Enydra
- subf. Asteroideae, Polymnieae: Polymnia
- subf. Asteroideae, Senecioninae: Crassocephalum, Emilia, Erechites, Gynura, Hasteola, Packera, Pseudogynoxys, Senecio
- subf. Asteroideae, Tageteae: Flaveria, Pectis, Porophyllum, Tagetes, Thymophylla

### Acanthospermum {AFP}

- 1. Fruit 7-10 mm long, with 5-7 ribs, without terminal spines ... *A. australe*
- 1. Fruit 2-6 mm long, with 0-3 ribs, with 2 terminal spines [2]
- 2. Leaves 20-70 mm long, sessile or subsessile; fruit lacking distinct ribs, prickles scattered ... *A. hispidum*
- 2. Leaves 10-35(45) mm long, the blade usually abruptly contracted to a winged petiole; fruit with 3 ribs, prickles mostly along ribs and the apex ... *A. humile*

\****Acanthospermum australe*** (Loefl. ex L.)Kuntze— {AFP}

\****Acanthospermum hispidum*** DC.— {AFP}

\****Acanthospermum humile*** (Sw.)DC.— {AFP}

### Achillea {AFP}

***Achillea millefolium*** L. subsp. ***millefolium***— {AFP} Following the taxonomy in POWO. There have been numerous studies examining relationships within what has been called the *Achillea millefolium* aggregate. Samples in North America may be called *A. borealis* and appear most related to *A. asiatica* (Guo et al. 2012). The name *A. lanulosa* has also been commonly used in North America (Mulligan & Bassett 1959). Distinctive morphological characters are still difficult to discern, especially for determining if any specimens of the *A. millefolium* aggregate in North America represent species other than *A. borealis*.

### Acmeella {AFP}

- 1. Ray flowers absent; disc 10-20 mm wide, usually with a distinct purplish or maroon zone at the tip; pappus of 2-3 bristles ... *A. oleracea*
- 1. Ray flowers usually present on some flowers, corolla yellow; disc 4-10 mm wide, uniformly yellow; pappus absent [2]

2. Plant densely pilose; leaf blade base cordate to truncate; phyllaries 15-21, in 3 series ... *A. pilosa*

2. Plant glabrate or sparsely puberulous; leaf blade base cuneate or attenuate; phyllaries 6-16, in 2 series [3]

3. Petioles 2-4 mm long; leaf blades linear-lanceolate, 12-40 mm long, 3-10 mm wide ... *A. pusilla*

3. Petioles 3-40+ mm long; leaf blades ovate to lanceolate, 20-40(100) mm long, (4)10-35 mm wide ... *A. repens*

^ *Acmella oleracea* (L.) R.K.Jansen—

\* *Acmella pilosa* R.K.Jansen— {AFP}

\* *Acmella pusilla* (Hook. & Arn.) R.K.Jansen— {AFP}

*Acmella repens* (Walter) Persoon— {AFP}

### **Ageratina** {AFP}

1. Petioles (5)10-30(50) mm long; leaf blade 2.5-8(9) cm wide, chartaceous; phyllaries 3-7 mm long; roots mostly 0.3-0.8 mm thick ... *A. altissima*

1. Petiole 1-15(22) mm long; leaf blade 1.5-4 cm wide, relatively subcoriaceous; phyllaries 2-4.5 mm long; roots mostly 0.8-2 mm thick [2]

2. Petioles 1-12 mm long; leaf blades mostly 5-8 times longer than the subtending petiole, the blade margins usually shallowly crenate to subentire; corolla lobes usually densely long-pubescent; achenes usually glabrate ... *A. aromatica*

2. Petioles 7-22 mm long; leaf blades mostly 1-4 times longer than the subtending petiole, the blade margins usually strongly toothed; corolla lobes usually sparsely short-pubescent to glabrate; achenes usually pubescent, at least apically ... *A. jucunda*

*Ageratina altissima* (L.) R.M.King & H.Rob.— {AFP}

*Ageratina aromatica* (L.) Spach— {AFP}

*Ageratina jucunda* (Greene) Clewell & Wooten— {AFP}

### **Ageratum** {AFP}

1. Roots woody, only slightly fibrous; plant glabrate to moderately pilose, eglandular; flowering Jul-Jan, rarely Apr ... *A. maritimum*

1. Roots strongly fibrous, generally lacking thickened woody roots; plant glandular-punctate or stipitate-glandular [2]

2. Leaf blade underside yellow glandular-punctate (rarely eglandular); peduncles eglandular; phyllaries sparsely pilose to glabrous, eglandular, abruptly tapered at the tip, acuminate; flowering Jan-Oct ... *A. conyzoides*

2. Leaf blades eglandular; peduncles usually stipitate-glandular; phyllaries densely pilose (rarely glabrous), stipitate-glandular (rarely glabrous), gradually tapered in the upper half to the tip, acute; flowering Oct-Apr ... *A. houstonianum*

\* *Ageratum conyzoides* L.— {AFP}

\* *Ageratum houstonianum* Mill.— {AFP}

*Ageratum maritimum* Kunth— {AFP} State Endangered.

### **Ambrosia** {AFP}

1. Leaf blade with 3-5 lobes or unlobed ... *A. trifida*

1. Leaf blade 1-3-pinnatifid or 1-3-pinnately lobed [2]
2. Plant densely hispid or pilose, usually with a creeping, prostrate stem and erect offshoots; most leaves 2-3-pinnatifid or 2-3-pinnately lobed ... *A. hispida*
2. Plant sparsely to densely strigillose or hispid, stems erect; most leaves 1-pinnatifid or 1-pinnately lobed or the pinnae with sparse, few shallow lobes or teeth [3]
3. Annual, the taproot with copious fibrous roots; petioles mostly (3)15-40(65) mm long ... *A. artemisiifolia*
3. Perennial, mostly stout roots near the surface, often clonal from horizontal roots; petioles 0-15(25) mm long ... *A. psilostachya*

***Ambrosia artemisiifolia*** L.— {AFP}

***Ambrosia hispida*** Pursh— {AFP}

***Ambrosia psilostachya*** DC.— {AFP}

***Ambrosia trifida*** L.— {AFP}

**Anacis** Upon restructuring *Coreopsis*, the species below were originally combined in *Gyrophyllum* (Tadesse & Crawford), an illegitimate later homonym, also preceded in rank (Art. 11.2) by *Anacis* (Feng et al. 2024).

1. Petioles 0-0.5 cm long; ray corolla 11-13-striate; disc corolla yellow ... *A. major*
1. Petioles 0.5-5 cm long; ray corolla 16-17-striate; disc corolla red to purple or brownish ... *A. tripteris*

***Anacis major*** (Walter)Z.H.Feng et al.— {AFP}

***Anacis tripteris*** (L.)Schrank— {AFP}

**Antennaria** {AFP}

***Antennaria plantaginifolia*** (L.)Hook.— {AFP}

**Anthemis** {AFP}

1. Plant odor weak or insignificant; receptacles paleate throughout, paleae lanceolate to oblanceolate; cypselae ribs smooth or weakly tuberculate ... *A. arvensis*
1. Plant strongly malodorous (glandular); receptacles paleate distally, paleae subulate to acerose; cypselae ribs tuberculate ... *A. cotula*

\****Anthemis arvensis*** L.— {AFP}

\****Anthemis cotula*** L.— {AFP}

**Aphanostephus** {AFP}

\****Aphanostephus skirrhobasis*** (DC.)Trel. ex Branner & Coville var. ***thalassius*** Shinnery— {AFP}

**Arnica** {AFP}

***Arnica acaulis*** (Walter)Britton et al.— {AFP} State Endangered.

**Arnoglossum** {AFP}

1. Leaf blades broadly cordate-ovate to deltate, 0.8-1.6 times longer than wide, the basal veins widely divergent (sometimes a few elliptic and to 2.7 times longer than wide) [2]

1. Leaf blades ovate, elliptic, to linear, 1.5-15(20) times longer than wide, the basal veins mostly ascending-arcuate [3]
2. Stem smooth to striate; stems or leaf blade lower surfaces often glaucous; leaves membranous; phyllary midvein lacking a wing ... *A. atriplicifolium*
2. Stem ribbed or angular; stems and leaf blade lower surfaces not glaucous; phyllary midvein winged ... *A. diversifolium*
3. Basal leaf blades regularly crenate, crenate-dentate, to shallowly dentate, with 10-30 teeth per side, the distal ones with 3-10 teeth per side ... *A. floridanum*
3. Basal leaf blades entire, lobed, or dentate, with 0-9 teeth per side [4]
4. Stems terete; leaf blades entire to sinuate; phyllary midvein lacking a wing [5]
4. Stem strongly ridged or angled; leaf blades coarsely dentate (at least some) to entire [6]
5. Basal and proximal leaf blades 2.7-15(20) times longer than wide ... *A. ovatum* var. *lanceolatum*
5. Basal and proximal leaf blades 1.6-2.6 times longer than wide ... *A. ovatum* var. *ovatum*
6. Basal leaf blades 15-37 cm long, the lateral veins appressed to strictly ascending-arcuate; involucre 10-13.4 mm long; phyllary midvein wing widest at base, irregularly coarsely erose-dentate to erose-sinuate; corolla 9-10.5 mm long, the tube 0.9-1 mm wide ... *A. album*
6. Basal leaf blades 12-15(20) cm long, the lateral veins divergent to ascending-arcuate; involucre (8)8.5-9.9(12) mm long; phyllary midvein wing widest near middle or apex, infrequently widest at base, entire or sinuate to irregularly finely dentate; corolla 7-8(9.5) mm long, the tube 0.6-0.7 mm wide ... *A. sulcatum*

***Arnoglossum album*** L.C.Anderson— {AFP} Endemic. State Endangered.

***Arnoglossum atriplicifolium*** (L.)H.Rob.— {AFP}

***Arnoglossum diversifolium*** (Torr. & A.Gray)H.Rob.— {AFP} State Threatened.

***Arnoglossum floridanum*** (A.Gray) H.Rob.— {AFP} Endemic.

***Arnoglossum ovatum*** (Walter)H.Rob. var. ***lanceolatum*** (Nutt.)D.B.Ward—

***Arnoglossum ovatum*** (Walter)H.Rob. var. ***ovatum***— {AFP}

***Arnoglossum sulcatum*** (Fernald)H.Rob.— {AFP}

## **Artemisia** {AFP}

1. Leaf blades 2-3-pinnately lobed, the lobes filiform to linear; disc flowers functionally staminate (not setting fruit), corollas subglobose ... *A. campestris* subsp. *caudata*
1. Leaf blades mostly unlobed to 1-pinnately lobed (basal ones sometimes more divided), the lobes lanceolate to linear-lanceolate; disc flowers bisexual and fertile, corollas funnelform [2]
2. Receptacles villous ... *A. absinthium*
2. Receptacles glabrous [3]
3. Leaves glabrate on the upper surface ... *A. vulgaris*
3. Leaves tomentose to floccose on the upper surface [4]
4. Leaves deeply lobed, sinuses >1/2 way to the midrib ... *A. ludoviciana*
4. Leaves entire, toothed, or weakly lobed with sinuses <1/2 way to the midrib ... *A. stelleriana*

\****Artemisia campestris*** L. subsp. ***caudata*** (Michx.)H.M.Hall & Clements— {AFP}

^***Artemisia ludoviciana*** Nutt.— {AFP}

\****Artemisia stelleriana*** Besser— {AFP}

\****Artemisia vulgaris*** L.— {AFP}

## **Baccharis** {AFP}



1. Leaf blades mostly linear and mostly entire, rarely narrowly elliptic or toothed, 1–7(11) mm wide ... *B. angustifolia*

1. Leaf blades obovate, rhombic, to elliptic, entire to toothed, (7)10–80 mm wide (some blades smaller, especially distal ones or on immature plants) [2]

2. Leaf blade entire or with sharply acute teeth, glands small and inconspicuous under magnification; synflorescence of sessile clusters subtended by normal-sized to slightly reduced leaves ... *B. glomeruliflora*

2. Leaf blade entire or with bluntly acute to obtuse teeth, sometimes somewhat lobate, glands large and usually conspicuous under magnification (less so in older specimens); synflorescence in paniculiform or umbelliform arrays, the arrays pedunculate and not appearing sessile, the individual heads sometimes sessile along the leafless or bracteate central rachis of the paniculiform or umbelliform array [3]

3. All leaf blades entire (marginal teeth extremely rare), the apex broadly subtruncate to subacute or mucronulate, fairly uniform in size and shape, typically only a few markedly reduced immediately below the inflorescence; synflorescence umbelliform; involucre obconic; phyllaries often with a light midvein that bisects the base of the darker medial band; pappus 3–6 mm long in fruit ... *B. dioica*

3. Usually at least some leaf blades toothed or lobed, occasionally all entire (esp. brackish areas), sometimes the distal ones especially entire, the apex narrowly acute to rounded, size and shape typically not uniform, the leaves typically gradually reduced in size towards the inflorescence; synflorescence paniculiform; involucre campanulate; phyllaries without a light midvein or rarely present at the base of the darker medial band; pappus (6.5–)7–12 mm long in fruit ... *B. halimifolia*

***Baccharis angustifolia*** Michx.— {AFP}

***Baccharis dioica*** Vahl— {AFP} State Endangered. Miami-Dade Co. (Brickell Hammock area); extirpated.

***Baccharis glomeruliflora*** Pers.— {AFP}

***Baccharis halimifolia*** L.— {AFP} Throughout.

***Balduina*** {AFP}

1. Leaves 0.5–3.5(4) mm wide, to 6 cm long; flower heads 5–45 per plant; outer phyllaries 0.6–1.7 mm wide, apices acuminate; pappus scales 0.3–0.6 mm long ... *B. angustifolia*

1. Leaves (2)3–12 mm wide, to 20(32) cm long; flower heads 1–3(5) per plant; outer phyllaries 1.7–3.1 mm wide, apices acute; pappus scales 1.3–2.2 mm long [2]

2. Basal leaves 2.8–10.4 cm long; disc corollas yellow to orange ... *B. uniflora*

2. Basal leaves 7–32 cm long; disc corollas dark purple to orange-red ... *B. atropurpurea*

***Balduina angustifolia*** (Pursh)B.L.Rob.— {AFP}

***Balduina atropurpurea*** R.M.Harper— {AFP} State Endangered.

***Balduina uniflora*** Nutt.— {AFP}

***Berlandiera*** {AFP}

1. Stems scabrous to subscabrous; leaf blade pinnatifid or pinnately lobed, especially in the proximal part of the leaf; disc flowers yellow ... *B. subacaulis*

1. Stems with at least some long hairs; leaf blade toothed only, unlobed, or the petiole winged-pinnatifid; disc flowers dark red, purple, to yellow [2]

2. Stem floccose to tomentose; leaves usually toothed only ... *B. pumila*

2. Stem with long fine hairs and short stout ones; leaves often with a winged-pinnatifid petiole ... *B. ×humilis*

***Berlandiera ×humilis*** Small— {AFP} Endemic.

***Berlandiera pumila*** (Michx.)Nutt.— {AFP}

***Berlandiera subacaulis*** (Nutt.)Nutt.— {AFP} Endemic.

### **Bidens** {AFP}

1. Leaves simple, toothed, sessile ... *B. laevis*

1. Leaves lobed to divided or compound, petiolate (at least some, sometimes some leaves simple, toothed but generally petiolate) [2]

2. Leaves 2-3-pinnatisect, lobes ovate, often entire or with few, coarse teeth ... *B. bipinnata*

2. Leaves 1-pinnatisect, pinnately compound, or if 2-pinnatisect then ultimate lobes narrowly oblanceolate to linear

3. Ray floret laminae yellow, 10-30 mm long [4]

3. Ray floret laminae white, absent, or if yellow to 3.5 mm long [5]

4. Leaves 1-pinnatisect or pinnately compound, lobes or leaflets usually 3(-7); cypselae broadly cuneate, 1.5-2.5 times as long as wide, margins not barbed, not ciliate ... *B. mitis*

4. Leaves 1- to 2-pinnatisect or 1-pinnately compound, lobes or leaflets (3)5-9; cypselae narrowly cuneate, 2.5-4 times as long as wide, margins barbed or ciliate ... *B. trichosperma*

5. Calyculus (subtending phyllaries) (3)5-20(60) mm long, at least some subequal to longer than disc florets and cypselae; ray florets absent or ray laminae yellow; cypselae laterally flattened [6]

5. Calyculus (subtending phyllaries) 3-5 mm long, subequal to shorter than disc florets and cypselae; ray florets absent or ray laminae white; cypselae quadrangular [7]

6. Calyculus bracts (3)4(5), usually eciliate; disc florets (10)15-25 ... *B. discoidea*

6. Calyculus bracts 5-21, usually ciliate; disc florets 20-60(120) ... *B. frondosa*

7. Ray florets 5-8, sterile, laminae 5-16 mm long; pappus of 2 awns... *B. alba*

7. Ray florets 0(3), if present then fertile and laminae 3-5 mm long; pappus of (2)3(-5) awns ... *B. pilosa*

\*\****Bidens alba*** (L.)DC.— {AFP} Throughout. Perhaps the most common weed.

***Bidens bipinnata*** L.— {AFP}

***Bidens discoidea*** (Torr. & A.Gray)Britton— {AFP}

***Bidens frondosa*** L.— {AFP}

***Bidens laevis*** (L.)Britton et al.— {AFP}

***Bidens mitis*** (Michx.)Sherff— {AFP}

\****Bidens pilosa*** L.— {AFP} Probably rare to absent in Florida, and frequently misapplied to *B. alba*.

***Bidens trichosperma*** (Michx.)Britton— {AFP}

### **Bigelowia** {AFP}

1. Plants with rhizome-like caudex branches (becoming colonial or loosely matted); leaves linear, 0.3-2 mm wide, bases persistent ( $\pm$  sheathing branches of caudices) ... *B. nuttallii*

1. Plants with rhizomes or crowns, sometimes enlarging by offsets from stem or caudex bases; leaves linear-oblanceolate to oblanceolate or narrowly spatulate, 2-14 mm wide, bases not persistent [2]

2. Plants occurring singly; proximal leaves usually without a clearly distinct petiolar region, linear to linear-oblongate, mostly 2-4 mm wide, usually relatively few and not forming a prominent rosette (the basal and lower stem leaves strict to ascending); involucre 6-7.5 mm high; florets 3-6; corollas 4-5 mm long ... *B. nudata* subsp. *australis*

2. Plants commonly occurring in close clusters; proximal leaves with a distinctly narrowed petiolar region, blade elliptic to oblongate, mostly 4-14 mm wide, crowded in a basal rosette (the leaves mostly spreading to somewhat ascending); involucre 4-6 mm high; florets 2-5; corollas 3-4 mm long ... *B. nudata* subsp. *nudata*

***Bigelovia nudata*** (Michx.)DC. subsp. ***australis*** L.C.Anderson— {AFP} Endemic.

***Bigelovia nudata*** (Michx.)DC. subsp. ***nudata***— {AFP}

***Bigelovia nuttallii*** L.C.Anderson— {AFP} State Endangered.

### **Boltonia** {AFP}

1. Heads in paniculiform arrays, primary branches mostly spreading; only proximal bracts leaflike, 8-55 mm long, others reduced and linear to linear-oblongate or subulate, 2-10(15) mm ... *B. diffusa*

1. Heads in corymbiform arrays, branches spreading to ascending; most bracts leaflike, 10-120 mm, only peduncle bracts reduced, linear to subulate or ovate to linear-oblongate, 1-12(-62) mm [2]

2. Disc mostly 3-6(8) mm wide; pappus awns 0.3-0.8 mm long; outer phyllaries 1.3-2 mm long; ray laminae 5-9 mm long ... *B. apalachicolaensis*

2. Disc mostly 6-10 mm wide; pappus awns 0.4-2 mm long; outer phyllaries 1.5-3.8 mm long; ray laminae 5-13 mm long ... *B. asteroides*

***Boltonia apalachicolaensis*** L.C.Anderson— {AFP} Subtly distinguishable from *B. asteroides*.

***Boltonia asteroides*** (L.)L'Hér.— {AFP}

***Boltonia diffusa*** Elliott— {AFP}

### **Borrichia** {AFP}

1. Leaves green (glabrous to sericeous), midrib light green and somewhat inconspicuous, basal lateral veins inconspicuous; head obovate-hemispheric, the ray corollas held at or just below the apex; proximal phyllaries appressed-ascending; outer disc flowers erect-ascending; paleae acute ... *B. arborescens*

1. Leaves glaucous (villous to sericeous), midrib whitish and conspicuous, basal lateral veins distinct; head hemispheric, the ray corollas held well below the apex; proximal phyllaries spreading; outer disc flowers spreading-ascending; paleae spinose, the spine ca. 0.2-0.4 length of the body [2]

2. Phyllaries and paleae spine-tipped ... *B. frutescens*

2. Phyllaries and paleae acute to cuspidate ... *B. ×cubana*

***Borrichia arborescens*** (L.)DC.— {AFP}

***Borrichia ×cubana*** Britton & S.F.Blake— {AFP}

***Borrichia frutescens*** (L.)DC.— {AFP}

### **Bradburia** {AFP}

\****Bradburia pilosa*** (Nutt.)Semple— {AFP}

### **Brickellia** {AFP}

1. Petioles to 5 cm long, to 1/2 as long as the leaf blade; leaf blades ovate, to 10 cm wide; pappi of 38-46 purple-tinged, barbellate bristles ... *B. cordifolia*

1. Petioles to 0.5(1) cm long, <1/4 length of leaf blade; leaf blades linear to lanceolate, to 4 cm wide; pappi of 20-28 white to tawny, usually plumose or subplumose, sometimes barbellate, bristles [2]

2. Leaves (15)20-100 mm long, 4-20(40) mm wide ... *B. eupatorioides*

2. Leaves to 20 mm long, to 3 mm wide ... *B. mosieri*

***Brickellia cordifolia*** Elliott— {AFP} State Endangered.

***Brickellia eupatorioides*** (L.)Shinners— {AFP}

***Brickellia mosieri*** (Small)Shinners— {AFP} Endemic. Federally Endangered. State Endangered.

### **Brintonia** {AFP}

***Brintonia discoidea*** (Elliott)Greene— {AFP}

### **Calyptocarpus** {AFP}

\****Calyptocarpus vialis*** Less.— {AFP}

**Carphephorus** {AFP} Well-resolved phylogenies are lacking to clarify relationships and generic boundaries in Liatrinae ([Schilling 2011](#)).

1. Leaves linear, 1-2(3) mm wide ... *C. pseudoliatris*

1. Leaves mostly oblanceolate to spatulate, 3-40 mm wide [2]

2. Leaves tapering-acute at the apex, widest between the middle and apex, to 12 cm long, to 1 cm wide, secondary veins not evident, glandular-punctate; stems glandular-punctate; pappus bristles in 2 series (Litrisea) ... *C. carnosus*

2. Leaves generally rounded at the apex, widest just below the apex, to 20 cm long, to 4 cm wide, secondary veins conspicuous or obscure, eglandular or glandular; stems eglandular (peduncles sometimes stipitate-glandular) [3]

3. Leaves glandular-punctate, secondary veins obscure; stems villous to hirsute; involucre 6-10 mm long; phyllaries 15-40 in 3-5(7) series ... *C. corymbosus*

3. Leaves eglandular, secondary veins usually conspicuous; stems glabrous or villous to hirsute; involucre 3-6 mm long; phyllaries 5-12 in 1-2(3) series (Trilisa) [4]

4. Stems villous to hirsute; synflorescence racemiform or thyrsoid, the interspersed bracts to 2 cm long; peduncles stipitate-glandular ... *C. paniculatus*

4. Stems glabrous; synflorescence paniculiform or corymbiform, the subtending bracts to 0.5 cm long; peduncles glabrous [5]

5. Plant odor pleasant (coumarin- or vanilla-like); basal leaves 15-34 cm long, 3-6 cm wide; cauline leaf margins sometimes toothed; synflorescence compact, the inflorescence heads generally densely aggregated; florets mostly 7-10 ... *C. odoratissimus*

5. Plant odor insignificant; basal leaves to 6-22 cm long, 2-3(4) cm wide; cauline leaf margins entire; synflorescence diffuse, the inflorescence heads mostly dispersed; florets mostly 10-14 ... *C. subtropicanus*

***Carphephorus carnosus*** (Small)C.W.James— {AFP} Endemic.

***Carphephorus corymbosus*** (Nutt.)Torr. & A.Gray— {AFP}

***Carphephorus odoratissimus*** (J.F.Gmel.)H.Hebert— {AFP}

***Carphephorus paniculatus*** (J.F.Gmel.)H.Hebert— {AFP}

***Carphephorus pseudoliatris*** Cass.— {AFP}

***Carphephorus subtropicanus*** DeLaney et al.— {AFP} Endemic.

### **Centaurea** {AFP}

1. Leaf margins prickly; heads sessile, enveloped by foliaceous bracts; phyllaries spine-tipped; corolla yellow ... *C. benedicta*

1. Leaf margins not prickly; heads pedunculate; phyllaries apically fimbriate; corolla white, pink, blue, to purple [2]

2. Annual; leaves entire, unlobed ... *C. cyanus*

2. Perennial; cauline leaves pinnatifid or pinnately lobed ... *C. stoebe* subsp. *australis*

\****Centaurea benedicta*** (L.)L.— {AFP}

\****Centaurea cyanus*** L.— {AFP}

\****Centaurea stoebe*** L. subsp. ***micranthos*** (Gugler)Hayek— {AFP}

### **Centratherum** {AFP}

\****Centratherum punctatum*** Cass.— {AFP}

### **Chaptalia** {AFP}

1. Peduncle dilated just below the head; heads erect; corolla laminae 0.2-0.3 mm wide; inner florets bisexual; cypselae beak filiform and 0.5-2 times as long as body ... *C. albicans*

1. Peduncle generally of uniform width throughout; heads nodding, lateral, or erect; corolla laminae 0.9-1.5 mm wide; inner florets functionally staminate; cypselae beak stout and 0.2-0.3 times as long as body ... *C. tomentosa*

***Chaptalia albicans*** (Sw.)Vent. ex B.D.Jacks.— {AFP} State Threatened.

***Chaptalia tomentosa*** Vent.— {AFP}

### **Chromolaena** {AFP}

1. Petiole 0-2(3) mm long; inner phyllary apices petaloid, loose, hyaline, pinkish or purplish ... *C. ivifolia*

1. Petiole 3-25 mm long; inner phyllary apices appressed, not or scarcely petaloid, whitish [2]

2. Leaf blades 1-5 cm long, to 2.5 cm wide; involucre 5.5-7.5(8) mm long ... *C. frustrata*

2. Leaf blades (1.5)5-12 cm long, 1.5-6 cm wide; involucre (7)8-10 mm long ... *C. odorata*

***Chromolaena frustrata*** (B.L.Rob.)R.M.King & H.Rob.— {AFP} Endemic. Federally Endangered. State Endangered.

\****Chromolaena ivifolia*** (L.)R.M.King & H.Rob.— {AFP}

***Chromolaena odorata*** (L.)R.M.King & H.Rob.— {AFP}

### **Chrysanthemum**

^ ***Chrysanthemum morifolium*** Ramat.—Mostly as a potted plant.

### **Chrysogonum** {AFP}

***Chrysogonum virginianum*** L. var. ***australe*** (Alexander ex Small)Ahles— {AFP}

## Chrysoma {AFP}

*Chrysoma pauciflosculosa* (Michx.)Greene— {AFP}

## Chrysopsis {AFP}

1. Cypselae with 2-10 ridges, the ridges yellow to red-brown, translucent; phyllaries glabrous or densely pilose, sometimes stipitate-glandular ... Key A

1. Cypselae without yellow to red-brown, translucent ridges; phyllaries moderately to densely stipitate-glandular ... Key B

Key A: Cypselae with 2-10 translucent, yellow to red-brown ridges

1. Phyllaries 1.5-2.5 mm wide, in 2-3 series, stipitate-glandular ... *C. latisquamea*

1. Phyllaries 0.5-1(1.3) mm wide, in 4-5 series, eglandular or stipitate-glandular [2]

2. Phyllary apices spreading to reflexed, flexuous or twisted, usually long-attenuate to acute, eglandular; cypselae with 6-10 ridges ... *C. subulata*

2. Phyllary apices appressed to slightly recurved at the tip, acute to short-acuminate, sometimes stipitate-glandular; cypselae with 2-6 ridges [3]

3. Stem erect; leaf margin eciliate [4]

3. Stem procumbent, ascending, to erect; leaf margin eciliate or sparsely to densely woolly [5]

4. Stems 30-80 cm long, green to dark purple; leaves to 100 (esp. on tall plants), linear to linear-lanceolate or elliptic, sometimes undulate, strongly twisted; heads 4-30(50) in open corymbiform arrays ... *C. linearifolia* subsp. *dressii*

4. Stems 30-200 cm long, often dark purple; leaves to 200 on tall plants, linear to narrowly linear, flat or slightly undulate or twisted; heads 20-100, in compact subumbelliform to paniculiform arrays ... *C. linearifolia* subsp. *linearifolia*

5. Perennials; stems procumbent, branched proximally, with up to 80 flowering branches; mid and distal cauline leaves to 100+, crowded, linear-elliptic to oblong, margins eciliate, glabrous; heads in compact umbelliform arrays; phyllaries appressed, glabrous to glabrate, sometimes outer ones with a few stipitate glands proximally ... *C. gossypina* subsp. *cruiseana*

5. Biennials or short-lived perennials; stems procumbent to erect, simple or branched; mid and distal cauline leaves 10-50+, sometimes crowded, linear, lanceolate, oblong, or ovate, sparsely to densely woolly at least along margins; heads in lax to compact corymbiform or subumbelliform arrays; phyllaries glabrate to densely woolly, sparsely to densely stipitate-glandular [6]

6. Biennials or short-lived perennials, 10-100 cm long; stems procumbent to erect, simple or branched; mid to distal cauline leaves broadly lanceolate, oblong, to ovate, margins sparsely to densely woolly or sometimes distal cauline eciliate, faces sparsely to densely woolly, distal sometimes glabrate; heads few in lax corymbiform arrays; phyllaries sparsely to densely pilose or woolly and densely stipitate-glandular, rarely glabrous or glabrate ... *C. gossypina* subsp. *gossypina*

6. Usually short-lived perennials to 80 cm long; stems ascending to erect, rarely procumbent, usually simple; mid to distal cauline leaves linear, lanceolate, to linear-oblong, margins coarsely long-pilose, faces sparsely pilose to glabrate; heads usually in subumbelliform arrays, sometimes in compound subumbelliform arrays; phyllaries glabrate, apices spreading ... *C. gossypina* subsp. *hyssopifolia*

Key B: Cypselae without translucent, yellow to red-brown ridges

1. Cauline leaves eglandular, sericeous ... *C. mariana*

1. Cauline leaves stipitate-glandular (glands sometimes hidden by hairs), woolly to sericeous-tomentose [2]
2. Phyllary apices spreading to reflexed, attenuate to long-attenuate [3]
2. Phyllary apices erect, acuminate, acute, to obtuse [4]
3. Stems decumbent, ascending, to erect; heads in corymbiform to paniculiform arrays ... *C. godfreyi*
3. Stems erect; heads in paniculiform arrays ... *C. lanuginosa*
4. Mid cauline leaf faces woolly or tomentose; involucre yellow-green in bud [5]
4. Mid cauline leaf faces usually sparsely hirsute, rarely woolly; involucre green in bud [6]
5. Mid cauline leaf blades obovate or oblanceolate, bases cuneate to slightly auriculate-clasping, marginal cilia rarely more than 1 mm, faces appressed-tomentose; distal blade faces appressed-tomentose, sparsely stipitate-glandular ... *C. floridana*
5. Mid cauline leaf blades oblong, oblong-elliptic, sometimes ovate to lanceolate, bases truncate to rounded, some marginal cilia 2-3 mm, faces woolly; distal blade faces glabrate to sparsely woolly-pilose, densely stipitate-glandular ... *C. highlandsensis*
6. Stems ascending to erect, tips usually nodding before heads form; mid leaf faces moderately hirsute, larger glandular hairs 0.3-0.9 mm long; heads in compact to moderately open, corymbiform to paniculiform arrays ... *C. delaneyi*
6. Stems erect, simple, tips erect to ascending before heads form; mid leaf faces glabrate to sparsely strigillose, larger glandular hairs 0.01-0.3 mm long; heads in compact to lax, corymbiform arrays ... *C. scabrella*

***Chrysopsis delaneyi*** Wunderlin & Semple— {AFP} Endemic.

***Chrysopsis floridana*** Small— {AFP} Endemic. Federally Endangered. State Endangered.

***Chrysopsis godfreyi*** Semple— {AFP} State Endangered.

***Chrysopsis gossypina*** (Michx.)Elliott subsp. ***cruseana*** (Dress)Semple— {AFP} State Endangered.

***Chrysopsis gossypina*** (Michx.)Elliott subsp. ***gossypina***— {AFP}

***Chrysopsis gossypina*** (Michx.)Elliott subsp. ***hyssopifolia*** (Nutt.)Semple— {AFP}

***Chrysopsis highlandsensis*** DeLaney & Wunderlin— {AFP} Endemic. State Endangered.

***Chrysopsis lanuginosa*** Small— {AFP} Endemic.

***Chrysopsis latisquamea*** Pollard— {AFP} Endemic.

***Chrysopsis linearifolia*** Semple subsp. ***dressii*** Semple— {AFP} Endemic.

***Chrysopsis linearifolia*** Semple subsp. ***linearifolia***— {AFP} Endemic.

***Chrysopsis mariana*** (L.)Elliott— {AFP}

***Chrysopsis scabrella*** Torr. & A.Gray— {AFP}

***Chrysopsis subulata*** Small— {AFP} Endemic.

## Cichorium {AFP}

\****Cichorium intybus*** L.— {AFP}

## Cirsium {AFP}

1. Stem armed with prickly, decurrent leaf bases; leaf blade upper surface covered with short, appressed bristles or prickles ... *C. vulgare*

1. Stem lacking prickly decurrent leaf bases or these inconspicuous; leaf blade upper surface usually lacking bristles or prickles [2]

2. Heads directly subtended by a whorl of foliaceous prickly bracts [3]

2. Heads not directly subtended by foliaceous bracts [5]

- 3. Stems and involucres densely tomentose or arachnose ... *C. horridulum* var. *horridulum*
- 3. Stems and involucres glabrous to sparsely tomentose or arachnose [4]
- 4. Leaves shallowly to deeply pinnatifid, main prickles 10-30 mm long ... *C. horridulum* var. *megacanthum*
- 4. Leaves spinose-dentate to shallowly pinnatifid, main prickles mostly 5-10 mm long ... *C. horridulum* var. *vittatum*
- 5. Phyllary prickle 0-0.5 mm long ... *C. muticum*
- 5. Phyllary spines 0.5-12 mm long [6]
- 6. Leaf blade lower surface densely tomentose [7]
- 6. Leaf blade lower surface arachnoid-villous, loosely tomentose, to glabrate [8]
- 7. Involucre (2)2.5-3.5(4) cm long; phyllaries without a glutinous ridge ... *C. altissimum*
- 7. Involucre 1.5-2.5 cm long; distal phyllaries with a medial glutinous ridge ... *C. virginianum*
- 8. Heads 1-5(10) per plant; involucre 2.5-4 cm long ... *C. lecontei*
- 8. Heads 5-40 per plant; involucre 1.5-2.5 cm long ... *C. nuttallii*

***Cirsium altissimum*** (L.) Spreng.— {AFP}

***Cirsium horridulum*** Michx.— {AFP}

***Cirsium lecontei*** Torr. & A.Gray— {AFP}

***Cirsium muticum*** Michx.— {AFP}

***Cirsium nuttallii*** DC.— {AFP}

***Cirsium virginianum*** (L.) Michx.— {AFP}

\****Cirsium vulgare*** (Savi) Ten.— {AFP}

**Cladanthus** {AFP}

\****Cladanthus mixtus*** (L.) Chevall.— {AFP}

**Conoclinium** {AFP}

1. Corolla tube 2.0-2.3 mm long ... *C. coelestinum*

1. Corolla tube 1.7-2.0 mm long ... *C. dichotomum*

***Conoclinium coelestinum*** (L.) DC.— {AFP}

***Conoclinium dichotomum*** Chapm. — Actual distribution unclear; subtly distinguished from *C. coelestinum*.

**Coreopsis** {AFP}

1. Ray corollas entire to minutely 2- or 3-fid at the apex; disc corollas 5-lobed, with 5 anthers; usually at least some proximal leaves palmately lobed or compound ... *Anacis*

1. Ray corollas distinctly 3-4-lobed at the apex, the median lobe often bilobed, sometimes with darker colored blotches at base or near middle; disc corollas 4- or 5-lobed with 4-5 anthers; leaves simple, pinnately divided, or with a few basal auricles ... *Coreopsis*

Key for *Coreopsis*

1. Leaves opposite; disc corolla 5-lobed with 5 anthers, and yellow (if reddish, the ray corolla with reddish blotches near base) ... sect. *Coreopsis*

1. Leaves alternate or opposite; disc corolla 4-lobed with 4 anthers, and reddish (if 5-lobed, then ray corolla without reddish blotches) [2]

2. Leaves opposite, usually some pinnately divided; paleae linear-attenuate; cypselae oblong-elliptic, outer surface rounded, inner surface flat, wings entire ... sect. *Calliopsis*



2. Leaves alternate or opposite, simple; paleae linear, oblanceolate, to spatulate; cypselae oblong, flattish, wings deeply fimbriate-lacerate ... sect. *Eublepharis*

Key for sect. *Coreopsis*

1. Annuals; ray corolla often with reddish or purplish blotches near the base [2]
1. Perennials; ray corolla without reddish blotches [3]
2. Stem leafy throughout; phyllaries glabrous, occasionally with marginal cilia; disc corolla dark reddish purple; cypselae with corky, inflexed wings, epappose ... *C. basalis*
2. Stem mostly with leaves at the base; phyllaries usually somewhat hairy; disc corolla yellow; cypselae with flat wings and 2 deciduous white pappi ... *C. nuecensis*
3. Stem with leaves crowded towards the base, the main stem usually with up to 6 nodes above the base, the flowering stems to 25 cm long and sometimes bracteate distally, the peduncles half or more of the stem height; heads 3.5-6 cm wide at anthesis [4]
3. Stem leafy throughout, with up to 12 nodes above the base, the flowering stems 8-20 cm long and leafy, the peduncles less than half the stem height; heads 2.5-4 cm wide at anthesis [5]
4. Leaves 15-30 times longer than wide, occasionally the blade with 1-2 small lateral lobes, glabrous ... *C. bakeri*
4. Leaves 2.5-13(17) times longer than wide, sometimes some strongly lobed, glabrous to pubescent ... *C. lanceolata*
5. Mid-cauline leaves simple or with 2-4 lobes, blade or segments ovate to elliptic-lanceolate, rarely linear-lanceolate ... *C. grandiflora*
5. Mid-cauline leaves 1-2 pinnately divided with (3)5-9 linear-lanceolate segments ... *C. pubescens*

Key for sect. *Calliopsis*

1. Ray corolla yellow to orange-yellow; pappus 0.5-1.5 mm long, palea-like, triquetrous, antrorsely barbed or hispid; cypselae winged ... *C. leavenworthii*
1. Ray corolla yellow usually with a reddish-brown to purplish spot near base; pappus absent or of short awns to 0.5(1) mm long, glabrous; cypselae winged or not ... *C. tinctoria*

Key for sect. *Eublepharis*

1. Leaves opposite, the blades ovate to elliptic, 15-35 mm wide ... *C. integrifolia*
1. Leaves alternate, or opposite with blades linear to narrowly elliptic [2]
2. Ray corolla lavender to purple-pink; disc corolla yellow-green to brown ... *C. nudata*
2. Ray corolla yellow to orange, sometimes with a reddish area near the base; disc corolla reddish brown [3]
3. Stem zigzag, internodes mostly shorter than the adjacent leaves, leafy to near the middle of the stem; leaves often with moniliform hairs; adaxial phyllaries oblong-linear to lanceolate; cypselae obovate ... *C. longifolia*
3. Stem mostly straight, internodes mostly longer than the adjacent leaves, leaves primarily basal; leaves glabrous; adaxial phyllaries deltoid to triangular; cypselae oblong [4]
4. Leaves with inconspicuous (viewable at 40x) black dots; heads (30)40-75 mm wide, 5-15 mm high at anthesis; cypselae 2-4.5 mm long ... *C. floridana*
4. Leaves often with numerous conspicuous black dots; heads 20-30(40) mm wide, 3-5 mm high at anthesis; cypselae 1.5-2 mm long ... *C. gladiata*

***Coreopsis bakeri*** E.E. Schill.— {AFP} Endemic.

\****Coreopsis basalis*** (A.Dietr.)S.F.Blake— {AFP}

***Coreopsis floridana*** E.B.Smith— {AFP} Endemic.  
***Coreopsis gladiata*** Walter— {AFP}  
***Coreopsis grandiflora*** Hogg ex Sweet— {AFP}  
***Coreopsis integrifolia*** Poir.— {AFP} State Endangered.  
***Coreopsis lanceolata*** L.— {AFP}  
***Coreopsis leavenworthii*** Torr. & A.Gray— {AFP}  
***Coreopsis linifolia*** Nutt.— {AFP}  
***Coreopsis nudata*** Nutt.— {AFP}  
\****Coreopsis nuecensis*** A.Heller— {AFP}  
***Coreopsis pubescens*** Elliott— {AFP}  
\****Coreopsis tinctoria*** Nutt.— {AFP}

### Cosmos {AFP}

1. Ray corolla yellow to red-orange ... *C. sulphureus*
1. Ray corolla pink, purple, violet, to white [2]
2. Ultimate leaf segments 2-10 mm wide ... *C. caudatus*
2. Ultimate leaf segments 0.2-1.5 mm wide [3]
3. Ray corolla 15-50 mm long S#1585](*C. bipinnatus*
3. Ray corolla 5-9 mm long ... *C. parviflorus*

^ *Cosmos bipinnatus* Cav.— {AFP}

^ *Cosmos caudatus* Kunth— {AFP}

^ *Cosmos sulphureus* Cav.— {AFP}

### Crassocephalum {AFP}

\****Crassocephalum crepidioides*** (Benth.)S.Moore— {AFP}

### Crepis {AFP}

\**Crepis capillaris*—Reported; no specimens known.

\****Crepis pulchra*** L.— {AFP}

### Croptilon {AFP}

***Croptilon divaricatum*** (Nutt.)Raf.— {AFP}

### Cyanthillium {AFP}

\****Cyanthillium cinereum*** (L.)H.Rob.— {AFP}

### Dahlia

^ *Dahlia pinnata* Cav.—

### Dittrichia {AFP}

\****Dittrichia viscosa*** (L.)Greuter— {AFP}

### Doellingeria {AFP}

1. Branches of arrays and peduncles leafless or nearly so, branches flexuous; heads 3-40(67); phyllary midvein usually swollen from base to apex; cypselae glabrous ... *D. infirma*

1. Branches of arrays and peduncles short, leafy, not flexuous, heads (3)20-100(-300+);  
phyllary midvein swollen only near the apex; cypselae sparsely strigose ... *D. sericocarpoides*

***Doellingeria infirma*** (Michx.)Greene— {AFP}

***Doellingeria sericocarpoides*** Small— {AFP}

**Dracopis** {AFP}

***Dracopis amplexicaulis*** (Vahl)Cass. ex Less.— {AFP}

**Echinacea** {AFP}

***Echinacea purpurea*** (L.)Moench— {AFP} State Endangered.

**Eclipta** {AFP}

***Eclipta prostrata*** (L.)L.— {AFP}

**Elephantopus** {AFP}

1. Stem leafy, the cauline leaves 3-22 cm long, basal leaves usually absent at flowering ... *E. carolinianus*

1. Stem with few, highly reduced leaves, the cauline leaves to 4.5 cm long, the basal leaves usually present at flowering [2]

2. Inner phyllaries sparsely strigose or hispidulous with hairs 0.05-0.3(0.5) mm long; cypselae 2.5-3 mm long ... *E. nudatus*

2. Inner phyllaries densely strigose, villous, or pilosulous with hairs 0.3-1 mm long; cypselae 3-5 mm long [3]

3. Inner phyllaries 6-8 mm long; pappi 3-4.5 mm long ... *E. elatus*

3. Inner phyllaries 9-13 mm long; pappi 6-8 mm long ... *E. tomentosus*

***Elephantopus carolinianus*** Raeusch.— {AFP}

***Elephantopus elatus*** Bertol.— {AFP}

***Elephantopus nudatus*** A.Gray— {AFP}

***Elephantopus tomentosus*** L.— {AFP}

**Emilia** {AFP}

1. Basal-most leaf blades lyrate-pinnatifid to lobate; involucre narrowly cylindrical, typically 2-3 times as long as wide at anthesis; corolla pink to purplish (rarely red), the tube paler, the lobes 0.5-0.7 mm long (1.1-1.5 mm long in the Asian variety *javanica*), exerted only up to 2 mm beyond the involucre; style whitish pink to pink; pollen white ... *E. sonchifolia*

1. Basal-most leaf blades entire to dentate (rarely lobed); involucre broadly cylindrical, typically 1.5-2 times as long as wide at anthesis; corolla pink to red or lobes pinkish and tube yellowish, the lobes 0.8-1.7 mm long, exerted up to 4 mm beyond the involucre; style whitish yellow to yellow-orange; pollen yellow-orange [2]

2. Pedicel glabrate; involucre sparsely to moderately pilose at the apex, glabrate at the base; corolla pink to red, the tube paler ... *E. fosbergii*

2. Pedicel pilose to glabrate; involucre sparsely to densely pilose at the apex, densely pilose to glabrate at the base; corolla lobes pinkish, the tube pale yellowish ... *E. praetermissa*

\****Emilia fosbergii*** Nicolson— {AFP}

\****Emilia praetermissa*** Milne-Redh.— {AFP} Central FL.

\**Emilia sonchifolia* (L.)DC.— {AFP}

**Enydra** {AFP}

\**Enydra fluctuans* Lour.— {AFP}

**Erechtites** {AFP}

*Erechtites hieraciifolius* (L.)Raf. ex DC.— {AFP}

**Erigeron** {AFP}

1. Plant 4-15(20) cm long; heads 1-2 per stem ... *E. bellioides*

1. Plant (10)15-150+ cm long; heads 1-200+ per stem [2]

2. Stem usually densely leafy; leaves generally linear to narrowly lanceolate or narrowly oblanceolate, 7-30 times longer than wide; ray corolla laminae 0-2 mm long; annuals [3]

2. Stem sparsely to moderately leafy; leaves generally oblanceolate, spatulate, ovate, lanceolate, to oblong, 2-15 times longer than wide; ray corolla laminae 0.5-8 mm long; annuals or perennials [5]

3. Leaf surfaces mostly densely strigose to hispidulous; phyllaries usually hispidulous to strigose; receptacles 3-5 mm wide in fruit; pistillate florets 60-150+; pappi 3-4+ mm long ... *E. bonariensis*

3. Leaf surface mostly glabrate to sparsely strigose or hispidulous; phyllaries glabrous to sparsely strigose; receptacles 1-3 mm wide in fruit; pistillate florets 20-45+; pappi 2-3 mm long [4]

4. Phyllaries usually glabrous, sometimes sparsely strigose; corollas of pistillate florets with laminae 0.3-1+ mm; cypselae uniformly pale tan to light gray-brown ... *E. canadensis*

4. Phyllaries usually sparsely strigose; corollas of pistillate florets with laminae 0 or to 0.3 mm; cypselae pale tan (usually some in each head with reddish nerves) ... *E. floribunda*

5. Ray laminae to 2 mm long, shorter than the phyllaries; basal leaves mostly not persistent and not rosette-forming ... *E. laevigatus*

5. Ray laminae 3-8 mm long, subequal to longer than the phyllaries; larger leaves sometimes basal, persistent, and rosette-forming [6]

6. Pappi of rays and discs often dissimilar, the ray without bristles, the disc with 0 or 8-15 bristles [7]

6. Pappi of rays and discs similar, the ray and disc with 10-30 bristles [8]

7. Stems hairs spreading, sometimes strigose distally; basal leaves usually withering by flowering, cauline little reduced proximal to midstem, blades lanceolate to oblong or ovate, margins coarsely serrate to nearly entire ... *E. annuus*

7. Stems hairs usually ascending, rarely spreading; basal leaves usually persistent to flowering, blades spatulate to broadly or narrowly oblanceolate to linear, cauline usually gradually reduced distally, margins entire or obscurely serrate or crenate ... *E. strigosus*

8. Plant mostly glabrate; leaf margins entire to faintly toothed; cauline leaves extremely reduced, usually <3 cm long and <0.7 mm wide; cypselae 4-nerved, 1.2-1.6 mm long ... *E. vernus*

8. Plant usually strigose, hirsute, to villous; at least some leaves with distinct teeth; cauline leaves gradually to strongly reduced, usually some >3 cm long or >0.6 mm wide; cypselae 2-nerved, 0.6-1.5 mm long [9]

9. Plants with sparsely scaly rhizomes ... *E. pulchellus*

9. Plants without rhizomes [10]

10. Basal leaves petiolate, the blade base abruptly contracted to a distinct petiole; cauline leaves not clasping; ray corollas 3-5 mm long ... *E. tenuis*

10. Basal leaves sessile, the blade base cuneate or attenuate; cauline leaves clasping to subclasping; ray corollas 4-10 mm long [11]
11. Stem internodes usually shorter than the subtending leaves, the leaves gradually reduced upwards; involucre 4-6 mm long, 6-15 mm wide; ray florets 150-250(400), corollas usually white or pinkish, 5-10 mm; pappus bristles 15-20(30) ... *E. philadelphicus*
11. Stem internodes longer than the subtending leaves, the leaves strongly reduced upwards; involucre 2.5-4 mm long, 4.5-10 mm wide; ray florets 100-150, corollas white to lavender or pale blue, sometimes pinkish, 4-6 mm; pappus bristles 10-15 ... *E. quercifolius*

***Erigeron annuus*** (L.) Pers.— {AFP}  
**\**Erigeron bellioides*** DC.— {AFP}  
**\**Erigeron bonariensis*** L.— {AFP}  
***Erigeron canadensis*** L.— {AFP}  
**\**Erigeron laevigatus*** Rich.— {AFP}  
***Erigeron philadelphicus*** L.— {AFP}  
***Erigeron pulchellus*** Michx.— {AFP}  
***Erigeron quercifolius*** Poir.— {AFP}  
***Erigeron strigosus*** Muhl. ex Willd.— {AFP}  
***Erigeron tenuis*** Torr. & A.Gray— {AFP}  
***Erigeron vernus*** (L.) Torr. & A.Gray— {AFP}

## **Eupatorium** {AFP}

1. Leaves pinnatifid, or pinnately or ternately lobed, lobes linear to linear-lanceolate, margins entire (*Traganthes* group) ... Key A
1. Leaves simple, not lobed, margins crenate, entire, lacinate, serrate, or serrulate (*core Eupatorium* group) ... Key B

Key A: Leaves pinnatifid to lobed

1. Leaf blades or lobes linear-lanceolate, to 4 mm wide; heads in subcorymbiform to subpaniculiform arrays; florets 7-9 ... *E. x-pinnatifidum*
1. Leaf blades or lobes usually linear and <3 mm wide; heads in paniculiform arrays; florets usually 5 [2]
2. Stems glabrous; heads secund on branches ... *E. leptophyllum*
2. Stems puberulent; heads not secund on branches [3]
3. Leaf blades or lobes 0.2-0.5(1) mm wide (margins strongly revolute); phyllaries usually glabrate or glabrous, usually not gland-dotted ... *E. capillifolium*
3. Leaf blades or lobes 0.5-2.5(4) mm wide; phyllaries usually puberulent (mostly on midveins), usually gland-dotted ... *E. compositifolium*

Key B: Leaves simple, unlobed

1. Petioles of larger leaves 5-30 mm long [2]
1. Petioles 0-5(10) mm long [3]
2. Leaf blades deltate to rhombic, to 6(8) cm long, coriaceous-subsucculent, margins generally crenate-undulate; florets 5 ... *E. mikanioides*
2. Leaf blades lanceolate, to 15 cm long, chartaceous to membranaceous, margins mostly serrate to serrate-crenate; florets 9-15 ... *E. serotinum*
3. Leaf bases connate-perfoliate ... *E. perfoliatum*
3. Leaf bases not connate-perfoliate [4]

4. Phyllaries with a white filiform to acuminate apex [5]
4. Phyllaries with an acute, obtuse, to rounded, green to white apex [7]
5. Leaves 4-10(15) mm wide, secondary veins weak or obscure ... *E. leucolepis*
5. Leaves (5)10-45 mm wide, secondary veins conspicuous throughout [6]
6. Leaves usually gland-dotted; phyllaries puberulent to villous (at least toward bases and on midveins), gland-dotted ... *E. album*
6. Leaves eglandular or sparsely gland-dotted; phyllaries glabrous, eglandular ... *E. petaloideum*
7. Leaf blades usually broadest below the middle, bases usually broadly cuneate, rounded, subcordate, or truncate [8]
7. Leaf blades usually broadest near or above the middle, bases cuneate to attenuate [9]
8. Leaf blades elliptic, lanceolate, or lance-ovate, mostly 1.6-2.5 times longer than wide; inflorescence branches alternate; phyllary glands nearly colorless ... *E. pilosum*
8. Leaf blades usually ovate to deltate, mostly 1-1.6(2) times longer than wide; proximal inflorescence branches often opposite to subopposite; phyllary glands yellow to golden (*E. rotundifolium* group) ... Key C
9. Leaves strongly 3-nerved from the base to near the apex ... *E. altissimum*
9. Leaves 1-nerved, pinninerved, or weakly 3-nerved [10]
10. Leaves usually in whorls of 3s or 4s, sometimes opposite, blades linear, (6)8-40 times longer than wide [11]
10. Leaves usually opposite, occasionally whorled, blades elliptic, lance-elliptic, lance-oblong, oblanceolate, or oblong, 2.5-16 times longer than wide [12]
11. Leaves 2-5 mm wide, margins usually entire to obscurely serrulate ... *E. hyssopifolium* var. *hyssopifolium*
11. Leaves 5-15 mm wide, margins usually laciniately toothed ... *E. hyssopifolium* var. *laciniatum*
12. Leaf blade upper surface glabrous or glabrate [13]
12. Leaf blade upper surface finely puberulent or villous [14]
13. Leaves usually recurved, the blades 2-8 cm long, 0.5-1(2) cm wide ... *E. mohrii*
13. Leaves usually spreading to ascending, the blades 15-50 cm long, (0.5)1-2 cm wide ... *E. anomalum*
14. Plant usually with some branches near the base; leaf blades mostly 2-3.5(4.5) cm long, margins weakly serrate to subentire; phyllaries lanceolate, larger ones 3-5 mm long; corollas 3-3.5 mm long ... *E. linearifolium*
14. Plant usually unbranched below the middle; leaf blades (3)5-7 cm long, margins usually serrate; phyllaries elliptic, larger ones 2.5-3 mm long; corollas 2.5-3 mm long ... *E. semiserratum*

Key C: *E. rotundifolium*

1. Leaf blades 3-veined from base, base subtruncate to broadly cuneate, margins crenate ... *E. rotundifolium* var. *rotundifolium*
1. Leaf blades 3-veined distal to base, base broadly cuneate to cuneate, margins serrate [2]
2. Leaf blades 3-7 cm long, 3-6 cm wide, widest near middle ... *E. rotundifolium* var. *ovatum*
2. Leaf blades 2-5 cm long, 1.5-3 cm wide, widest proximal to middle ... *E. rotundifolium* var. *scabridum*

***Eupatorium album*** L.— {AFP}

***Eupatorium altissimum*** L.— {AFP}

***Eupatorium* × *anomalum*** Nash— {AFP}

***Eupatorium capillifolium*** (Lam.) Small ex Porter & Britton— {AFP}

***Eupatorium compositifolium*** Walter— {AFP}

***Eupatorium hyssopifolium*** L. var. ***hyssopifolium***— {AFP}

***Eupatorium hyssopifolium*** L. var. ***laciniatum*** A.Gray— {AFP} Sometimes recognized as the species *E. torreyanum*.

***Eupatorium leptophyllum*** DC.— {AFP}

***Eupatorium leucolepis*** (DC.)Torr. & A.Gray— {AFP}

***Eupatorium linearifolium*** Walter— {AFP}

***Eupatorium mikanioides*** Chapm.— {AFP} Endemic.

***Eupatorium mohrii*** Greene— {AFP} *Eupatorium recurvans* (putative diploid) is sometimes recognized as a separate species from *E. mohrii* (putative autopolyploid), but is included in synonymy here following [Schilling & Grubbs \(2016\)](#), who stated morphology was not reliable to distinguish two such species (except perhaps for pollen viability analyses) (see [Yahara & Sullivan 1986](#)).

***Eupatorium perfoliatum*** L.— {AFP}

***Eupatorium petaloideum*** Britton ex Small— {AFP}

***Eupatorium pilosum*** Walter— {AFP}

***Eupatorium* × *pinnatifidum*** Elliott— {AFP}

***Eupatorium rotundifolium*** L.— {AFP} Variety *scabridum* is thought to be a hybrid of *E. rotundifolium* and *E. semiserratum* ([Sullivan 1972](#); [Yahara & Sullivan 1986](#)); it was alleged to differ by its alternate branching in the inflorescence ([Montgomery & Fairbrothers 1970](#)).

***Eupatorium semiserratum*** DC.— {AFP}

***Eupatorium serotinum*** Michx.— {AFP}

## **Eurybia** {AFP}

1. Leaf margins (at least some) strongly spinulose-dentate; phyllary apex spinose and often spreading; phyllaries 70–140; ray florets 25-60, white to pinkish; disc florets 115-260 ... *E. eryngiifolia*

1. Leaf margins entire to weakly spinulose-dentate near the blade base; phyllary apex acute to acuminate, erect; phyllaries 20–80; ray florets 8-35, pale to dark purple; disc florets 18-60 [2]

2. Heads usually sessile or subsessile; phyllaries 20-40; ray florets 8-17 ... *E. spinulosa*

2. Heads pedunculate; phyllaries 30–80; ray florets 15-35 [3]

3. Heads borne in spiciform arrays, sometimes corymbiform terminally; outer phyllaries sometimes coriaceous, margins scabrous or scabroso-ciliate ... *E. hemispherica*

3. Heads borne in corymbiform arrays; outer phyllaries not coriaceous, margins densely ciliate proximally (indurate part), distally scabrous (foliaceous part) ... *E. paludosa*

***Eurybia eryngiifolia*** (Torr. & A.Gray)G.L.Nesom— {AFP}

***Eurybia hemispherica*** (Alexander)G.L.Nesom— {AFP} State Endangered.

***Eurybia paludosa*** (Aiton)G.L.Nesom— {AFP}

***Eurybia spinulosa*** (Chapm.)G.L.Nesom— {AFP} Endemic. State Endangered.

## **Euryops** {AFP}

^ ***Euryops chrysanthemoides*** (DC.)B.Nord.— {AFP}

## **Euthamia** {AFP}

1. Stems glabrous to glabrate; leaf blades 1-3 mm wide, faces glabrous to glabrate, abundantly and prominently gland-dotted ... *E. caroliniana*

1. Stems glabrous, scabrous, or hirtellous; leaf blades (2)3-12 mm wide, faces glabrous, scabrous, or hirtellous, usually sparsely and obscurely gland-dotted [2]

2. Stems, decurrent leaf bases, and leaf faces scabrous ... *E. scabra*

2. Stems, decurrent leaf bases and leaf faces glabrous or hirtellous ... *E. weakleyi*

***Euthamia caroliniana*** (L.) Greene ex Porter & Britton— {AFP}

***Euthamia scabra*** (L.) Nutt.— {AFP}

***Euthamia weakleyi*** G.L. Nesom— {AFP} Previously as *E. hirtipes*, misapplied ([Nesom 2021](#)).

### **Eutrochium** {AFP}

1. Stems hollow, usually purplish and glaucous throughout ... *E. fistulosum*

1. Stems solid (rarely hollow near bases), purple at nodes ... *E. purpureum*

***Eutrochium fistulosum*** (Barratt) E.E. Lamont— {AFP}

***Eutrochium purpureum*** (L.) E.E. Lamont— {AFP}

### **Facelis** {AFP}

\****Facelis retusa*** (Lam.) Sch. Bip.— {AFP}

### **Farfugium**

^ ***Farfugium japonicum*** (L.) Kitam.—

### **Filago** {AFP}

\****Filago germanica*** (L.) Huds.— {AFP}

### **Flaveria** {AFP}

1. Synflorescence sessile to subsessile; leaves serrate ... *F. trinervia*

1. Synflorescence conspicuously pedunculate; leaves entire to serrate [2]

2. Annual; leaf blade serrate; synflorescence cymiform ... *F. bidentis*

2. Usually perennial; leaf blade entire to subtly denticulate; synflorescence corymbiform [3]

3. Subtending leaf or bractlets to 6 mm long, at least some exerted beyond the synflorescence ... *F. floridana*

3. Subtending leaf or bractlets to 2.5 mm long, not exerted beyond the synflorescence ... *F. linearis*

\****Flaveria bidentis*** (L.) Kuntze— {AFP}

***Flaveria floridana*** J.R. Johnst.— {AFP} Endemic. Derived from within *F. linearis* lineage ([Adachi et al. 2022](#)).

***Flaveria linearis*** Lag.— {AFP}

***Flaveria trinervia*** (Spreng.) C. Mohr— {AFP}

### **Fleischmannia** {AFP}

***Fleischmannia incarnata*** (Walter) R.M. King & H. Rob.— {AFP}

### **Gaillardia** {AFP}

1. Phyllaries 5-7 mm wide; receptacle setae 5-8 mm long; ray corolla 25-35 mm long; disc corolla 7-10 mm long; cypselae 3-4 mm long; tetraploid ... *G. grandiflora*

1. Phyllaries 2-4 mm wide; receptacle setae 0-6 mm long; ray corolla 15-25 mm long; disc corolla 6-7 mm long; cypselae 1.5-2.5 mm long; usually diploid [2]



2. Stem hairs usually short, appressed; leaves unlobed; receptacle setae 0-1 mm long; lobes of disc corollas attenuate-terete (bearing jointed hairs to 0.3 mm long) ... *G. aestivalis*

2. Stem hairs usually coarse, spreading; leaves sometimes lobed; receptacle setae 0.3-6 mm long; lobes of disc corollas ovate to deltate, sometimes attenuate (usually bearing jointed hairs 0.3+ mm long) ... *G. pulchella* var. *picta*

### ***Gaillardia aestivalis*** (Walter)H.Rock— {AFP}

^ *Gaillardia* × *grandiflora* Van Houtte—

\****Gaillardia pulchella*** Foug.— {AFP} Throughout; primarily spread through extensive cultivation. Undoubtedly introduced to Florida, once thought to be native. Native to western and central USA.

### ***Galinsoga*** {AFP}

\****Galinsoga quadriradiata*** Ruiz & Pav.— {AFP}

### ***Gamochaeta*** {AFP}

1. Leaves concolor or weakly bicolor, the upper and lower surfaces equally greenish to gray-greenish and both loosely or sparsely tomentose or arachnose, sometimes subpannose [2]

1. Leaves bicolor, the lower surface densely closely white-pannose to pannose-tomentose, the upper surface glabrous to sparsely arachnose [3]

2. Basal and proximal leaves 2-6(10) mm wide; bracts among heads linear, oblanceolate, or oblong-oblanceolate ... *G. antillana*

2. Basal and proximal leaves 4-16 mm wide; bracts among heads spatulate to oblanceolate ... *G. pensylvanica*

3. Plants (30)50-85 cm tall or long; stems erect or ascending; basal and proximal cauline leaves usually withering before flowering (clusters of smaller leaves usually present in cauline axils); apices of inner phyllaries acute-acuminate; flowering mostly late Jun-Aug ... *G. simplicicaulis*

3. Plants mostly 10-50 cm tall or long; stems erect to decumbent-ascending; basal and proximal cauline leaves present or not at flowering; apices of inner phyllaries acute, obtuse, rounded, blunt, to acute-acuminate; flowering mostly Apr-Jun [4]

4. Leaf upper surface glabrous or glabrate; involucre (± purplish) 2.5-3 mm long, bases glabrous; outer phyllaries elliptic-obovate to broadly ovate-elliptic, apices rounded to obtuse; bisexual florets 2-3 ... *G. impatiens*

4. Leaf upper surface sparsely arachnose; involucre (sometimes purplish) 3-4.5(5) mm long, bases often sparsely arachnose proximally; outer phyllaries ovate, ovate-triangular, or ovate-lanceolate, apices acute to acuminate; bisexual florets 2-6 [5]

5. Stems not pannose (hairs usually not individually evident); involucre 3-3.5(4) mm long; apices of inner phyllaries acute to acute-acuminate; bisexual florets 2-4; cypselae purple ... *G. chionesthes*

5. Stems usually pannose or pannose-tomentose (hairs individually evident); involucre 3-4.5 mm long; apices of inner phyllaries acute, obtuse, or truncate-rounded, sometimes apiculate; bisexual florets 3-6; cypselae tan to brownish [6]

6. Cauline leaf blades oblanceolate to oblanceolate-oblong or oblanceolate-obovate; involucre 3-3.5 mm long; laminae of inner phyllaries elliptic-oblong to oblong, apices truncate-rounded or obtuse and apiculate; bisexual florets (3)4-6; usually fibrous-rooted, rarely taprooted ... *G. argyrinea*

6. Cauline leaf blades oblanceolate to spatulate; involucre 4-4.5 mm long; laminae of inner phyllaries triangular, apices acute (not apiculate); bisexual florets 3-4; fibrous-rooted or taprooted ... *G. purpurea*

***Gamochaeta antillana*** (Urb.)Anderb.— {AFP}

***Gamochaeta argyrinea*** G.L.Nesom— {AFP}

***Gamochaeta chionesthes*** G.L.Nesom— {AFP}

\****Gamochaeta impatiens*** G.L.Nesom— {AFP}

\****Gamochaeta pensylvanica*** (Willd.)Cabrera— {AFP}

***Gamochaeta purpurea*** (L.)Cabrera— {AFP}

\****Gamochaeta simplicicaulis*** (Willd. ex Spreng.)Cabrera— {AFP}

**Garberia** {AFP}

***Garberia heterophylla*** (W.Bartram)Merr. & F.Harper— {AFP} Endemic. State Threatened.

**Gerbera** {AFP}

^ *Gerbera jamesonii* Adlam— {AFP}

**Glebionis** {AFP}

^ *Glebionis coronaria* (L.)Cass. ex Spach— {AFP}

**Gynura** {AFP}

1. Stems and leaves densely villous to villosulous ... *G. aurantiaca*

1. Stems and leaves glabrous to sparsely pubescent (rarely moderately pubescent) [2]

2. Stems decumbent to erect, subsucculent (woody at the base) ... *G. bicolor*

2. Stems scrambling, procumbent, or climbing, fibrous or woody ... *G. procumbens*

^ *Gynura aurantiaca* (Blume)DC.— {AFP}

^ *Gynura bicolor* (Roxb. ex Willd.)DC.—Some references have alleged that *G. bicolor* can be distinguished by other characters (petiole 0-4 cm long; inflorescence terminal; calycular bracts 1-3 mm long; phyllaries 12-16) vs. *G. procumbens* (petiole 0.1-1 cm long; inflorescence axillary; calycular bracts 3-6 mm long; phyllaries 8-12), but these appear dubious.

^ *Gynura procumbens* (Lour.)Merr.—

**Haplocarpha** {AFP}

\****Haplocarpha lyrata*** Harv.— {AFP}

**Hartwrightia** {AFP}

***Hartwrightia floridana*** A.Gray ex S.Watson— {AFP} State Threatened.

**Hasteola** {AFP}

***Hasteola robertiorum*** L.C.Anderson— {AFP} Endemic. State Endangered.

**Helenium** {AFP}

1. Leaves filiform to linear, 1-4 mm wide, 15-150 times longer than wide, the bases not decurrent along the stem ... *H. amarum*

1. Leaves lanceolate, (2)5-40 mm wide, 2-20 times longer than wide, the base decurrent along the stem [2]
2. Heads 5-100 per stem, the arrays with numerous branches [3]
2. Heads 1-5(10) per stem, branches none to few [4]
3. Cauline leaves usually dentate, 0.8-3 cm wide; ray flower pistillate, fertile; disc corollas yellow to yellow-brown ... *H. autumnale*
3. Cauline leaves entire to subtly toothed, 0.2-1.4 cm wide; ray flower neuter; disc corollas reddish or purplish ... *H. flexuosum*
4. Disc corolla lobes reddish, purplish, to yellow-brown ... *H. brevifolium*
4. Disc corolla lobes mostly yellow [5]
5. Pappus scales fimbriate-fringed or deeply lacerate 1/2 or more of their length; leaves of basal rosettes entire, undulate, to subtly toothed; peduncles glabrate to sparsely hairy; cypselae hairy ... *H. drummondii*
5. Pappus scales entire to slightly lacerate; leaves of basal rosettes entire, undulate, subtly to coarsely toothed, or pinnatifid; peduncles glabrate to densely hairy; cypselae glabrous or hairy [6]
6. Leaves of basal rosettes undulate, subtly to coarsely toothed, or pinnatifid; peduncles moderately to densely hairy; cypselae hairy ... *H. pinnatifidum*
6. Leaves of basal rosettes entire, undulate, to subtly toothed; peduncles glabrous to sparsely hairy; cypselae glabrous ... *H. vernale*

***Helenium amarum*** (Raf.)H.Rock— {AFP}

***Helenium autumnale*** L.— {AFP}

***Helenium brevifolium*** (Nutt.)A.W.Wood— {AFP}

***Helenium drummondii*** H.Rock— {AFP}

***Helenium flexuosum*** Raf.— {AFP}

***Helenium pinnatifidum*** (Schwein. ex Nutt.)Rydb.— {AFP}

***Helenium vernale*** Walter— {AFP}

## **Helianthus** {AFP}

1. Plant subscapose, the basal leaves persistent, up to 4 nodes of cauline leaves; leaves not glandular-punctate; heads 1-4(12) [2]
1. Plant leafy throughout, the basal leaves often withering, leafy cauline nodes numerous; leaves sometimes glandular-punctate; heads 1- [5]
2. Stems (and leaves) usually glabrous; disc corolla lobes yellow ... *H. carnosus*
2. Stems (and leaves) usually hispid or hirsute to scabrous; disc corolla lobes yellow or reddish [3]
3. Ray florets 0 or 2-8, laminae 1-2(-10) mm (inconspicuous, often tinged reddish) ... *H. radula*
3. Ray florets 8-13(-25), laminae (7-)10-40 mm (yellow) [4]
4. Phyllaries lanceolate to ovate (the larger 3+ mm wide); abaxial faces usually not gland-dotted (if gland-dotted, cypselae 5-6 mm); disc corolla lobes reddish or yellow ... *H. heterophyllus*
4. Phyllaries lanceolate (the larger 1.5-2.5 mm wide); abaxial faces of leaves (and usually ray laminae) notably gland-dotted; disc corolla lobes yellow; cypselae 3-5 mm ... *H. occidentalis*
5. Leaves 0.2-1.1(1.7) cm wide ... *H. angustifolius*
5. Leaves 1.1-40 cm wide [6]
6. Disc corollas reddish or purplish [7]
6. Disc corollas yellow [15]

7. Stems (leaves, phyllaries) densely silvery white tomentose or floccose ... *H. argophyllus*
7. Stems (leaves, phyllaries) hispid to glabrate [8]
8. Petioles 0-1.2 cm long; leaf blades 4-12 times longer than wide [9]
8. Petioles 1-10+ cm long (at least of larger leaves, petiole sometimes winged from decurrent leaf bases); leaf blades 1.3-3(4) times longer than wide [11]
9. Annual; leaves not glandular-punctate; phyllaries 15-25, eglandular ... *H. agrestis*
9. Perennial, rhizomatous; leaves glandular-punctate; phyllaries 25-38, glandular-punctate [10]
10. Leaf blade margins usually undulate and revolute ... *H. floridanus*
10. Leaf blade margins not undulate, not or only slightly revolute ... *H. simulans*
11. Phyllaries oblong, ovate, to lance-ovate [12]
11. Phyllaries lanceolate [13]
12. Leaves primarily alternate, blade base mostly shortly cuneate to subtruncate; involucre 15-200+ mm wide ... *H. annuus*
12. Leaves primarily opposite, blade base decurrent along the petiole; involucre 9-16 mm wide ... *H. atrorubens*
13. Stem erect, hispid, usually red-brown mottled; peduncles 25-50 cm long ... *H. debilis* subsp. *cucumerifolius*
13. Stem decumbent, glabrous to hispid or hirsute; peduncles 9-20(22) cm long [14]
14. Stems glabrous to puberulent; leaf blades serrulate or shallowly, regularly serrate, lower surface sparsely, if at all, glandular-punctate ... *H. debilis* subsp. *debilis*
14. Stems hirsute; leaf blades deeply, irregularly serrate, lower surface densely glandular-punctate ... *H. debilis* subsp. *vestitus*
15. Tuber-bearing and rhizomatous; petioles 2-8 cm long ... *H. tuberosus*
15. Rhizomatous or not, without tubers; petioles 0-3 cm long [16]
16. Phyllaries glandular-punctate, usually squarrose to reflexed; leaf blade bases ... *H. resinosus*
16. Phyllaries eglandular, appressed, ascending, to loosely spreading [17]
17. Petioles 0-1.2 cm long [18]
17. Petioles (0.5)1-3 cm long [20]
18. Stem glabrous to glabrate; leaf blade base often subcordate, often partly overlapping with the stem ... *H. divaricatus*
18. Stem hispid; leaf blade base cuneate, not overlapping with the stem [19]
19. Leaf blade margins usually undulate and revolute ... *H. floridanus*
19. Leaf blade margins not undulate, not or only slightly revolute ... *H. simulans*
20. Stem hirsute ... *H. hirsutus*
20. Stem glabrous to glabrate [21]
21. Lacking rhizomes; involucre 5-7 mm wide; ray flowers 5-8; disc flowers 15-22 ... *H. microcephalus*
21. Rhizomatous; involucre 8-20 mm wide; ray flowers 10-20; disc flowers 30-60 ... *H. strumosus*

***Helianthus agrestis*** Pollard— {AFP} Nearly endemic.

***Helianthus angustifolius*** L.— {AFP}

^ *Helianthus annuus* L.— {AFP}

^ *Helianthus argophyllus* Torr. & A.Gray— {AFP}

***Helianthus atrorubens*** L.— {AFP}

***Helianthus carnosus*** Small— {AFP} Endemic. State Endangered.

***Helianthus debilis*** Nutt. subsp. ***debilis***— {AFP} Endemic.

***Helianthus debilis*** Nutt. subsp. ***vestitus*** (E.Watson)Heiser— {AFP} Endemic.

***Helianthus debilis*** Nutt. subsp. ***cucumerifolius*** (Torr. & A.Gray)Heiser— {AFP}

*Helianthus divaricatus* L.— {AFP}  
*Helianthus floridanus* A.Gray ex Chapm.— {AFP}  
*Helianthus heterophyllus* Nutt.— {AFP}  
*Helianthus hirsutus* Raf.— {AFP}  
*Helianthus microcephalus* Torr. & A.Gray— {AFP}  
*Helianthus occidentalis* Riddell— {AFP}  
*Helianthus radula* (Pursh)Torr. & A.Gray— {AFP}  
*Helianthus resinusus* Small— {AFP}  
\**Helianthus simulans* E.Watson— {AFP}  
*Helianthus strumosus* L.— {AFP}  
^ *Helianthus tuberosus* L.— {AFP}

### Heliopsis {AFP}

*Heliopsis helianthoides* (L.)Sweet var. ***gracilis*** (Nutt.)Gandhi & R.D.Thomas— {AFP}

### Heterotheca {AFP}

*Heterotheca subaxillaris* (Lam.)Britton & Rusby— {AFP}

### Hieracium {AFP}

1. Heads in thyriform arrays (length of arrays 3-8 times as wide); phyllaries usually glabrous or stellate-pubescent, sometimes stipitate-glandular, inner ones 6-8 mm long; florets 12-25; corollas 8-10 mm long ... H. gronovii

1. Heads in corymbiform arrays (length of arrays 1-3 times as wide); phyllaries stellate-pubescent and stipitate-glandular, inner ones 8-11 mm long; florets 20-60; corollas 10-14 mm long ... H. megacephalon

*Hieracium gronovii* L.— {AFP}

*Hieracium megacephalon* Nash— {AFP}

### Hymenopappus {AFP}

*Hymenopappus scabiosaeus* L'Hér.— {AFP}

### Hypochaeris {AFP}

1. Leaves basal and some smaller ones cauline; pappus bristles in 1 series, all plumose [2]

1. Leaves all basal, cauline absent or nearly so; pappus bristles in 2 series, the outer barbellate, the inner plumose and longer [3]

2. Involucre broadly campanulate; phyllaries hirsute medially; corollas yellow ... H. chillensis

2. Involucre cylindrical or narrowly campanulate; phyllaries glabrous to sparsely tomentulose; corollas white ... H. microcephala var. albiflora

3. Annuals; leaves glabrous or sometimes hirsute on veins; florets subequal to phyllaries at flowering; cypselae dimorphic, outer truncate or with a short beak, inner with longer beaks ... H. glabra

3. Perennials; leaves hirsute; florets surpassing phyllaries at flowering; cypselae monomorphic, all beaked ... H. radicata

\**Hypochaeris chillensis* (Kunth)Britton— {AFP}

\**Hypochaeris glabra* L.— {AFP}

\**Hypochaeris microcephala* (Sch. Bip.)Cabrera var. ***albiflora*** (Kuntze)Cabrera— {AFP}

\**Hypochaeris radicata* L.— {AFP}

*Ionactis* {AFP}

*Ionactis repens* G.L.Nesom— {AFP}

*Iva* {AFP}

1. Leaves linear to linear-lanceolate, 0.5-5 mm wide, margins entire [2]
1. Leaves narrowly lanceolate, ovate, or spatulate, 5-40 mm wide, margins entire or toothed [3]
2. Involucres conic or turbinate, 2.5-3 mm long; outer phyllaries partly connate ... *I. angustifolia*
2. Involucres hemispheric, 1.5-2 mm long; outer phyllaries distinct ... *I. microcephala*
3. Petioles indistinct, 0-2 mm long; leaf blades 1-4(6) cm long, glabrous, eglandular (rarely gland-dotted), margins entire or up to 3(6) teeth ... *I. frutescens*
3. Petioles mostly distinct, 5-30 mm long; leaf blades 3-15 cm long, scabrellous, gland-dotted, margins usually toothed [4]
4. Annuals, to 150 cm tall; leaf blades 1.5-3 times longer than wide ... *I. annua*
4. Perennials, to 350 cm tall; leaf blades 2.2-10 times longer than wide ... *I. imbricata*

\**Iva angustifolia* Nutt. ex DC.— {AFP} Sometimes treated as a variety of *I. apserifolia*.

*Iva annua* L.— {AFP} A domesticated form (var. *macrocarpa*) with large cypselae (~4-9.5 mm long) was known from the Eastern Agricultural Complex north of Florida but fell into disuse and went extinct (Yarnell 1972; Weiland & Gremillion 2018).

*Iva frutescens* L.— {AFP}

*Iva imbricata* Walter— {AFP}

*Iva microcephala* Nutt.— {AFP}

*Jacoeaea*

^ *Jacoeaea maritima* (L.)Pelser & Meijden—

*Koanophyllon* {AFP}

*Koanophyllon villosum* (Sw.)R.M.King & H.Rob.— {AFP} State Endangered. Miami-Dade Co.

*Krigia* {AFP}

1. Some leaves cauline in the upper  $\frac{2}{3}$  of the plant and usually entire; peduncles cauline, arising from the upper  $\frac{2}{3}$  of the plant; pappus absent ... *K. cespitosa*
1. All or nearly all leaves in a basal rosette (occasionally cauline and toothed or lobate in the lower  $\frac{1}{3}$  of the plant in late spring or summer plants); peduncles nearly all basal (occasionally cauline in the lower  $\frac{1}{3}$  of the plant); pappus of scales and bristles present [2]
2. Perennial; involucre of phyllaries 8-15 mm long; ligulate floret 15-25 mm long; pappus of ca. 10 outer scales and 25-40 inner bristles ... *K. dandelion*
2. Annual; involucre of phyllaries 4-8 mm long; ligulate floret 5-12 mm long; pappus of 5 outer scales and 5 inner bristles ... *K. virginica*

*Krigia cespitosa* (Raf.)K.L.Chambers— {AFP}

*Krigia dandelion* (L.)Nutt.— {AFP}

*Krigia virginica* (L.)Willd.— {AFP}

*Lactuca* {AFP}

1. Corolla blue, lavender [2]

1. Corolla yellow [3]
2. Leaves lanceolate to ovate, lobed, toothed; achene beakless or the beak stout and less than 1/3 as long as the body ... *L. floridana*
2. Leaves linear, lobed, entire; achene beak filiform, more than 1/2 as long as the body ... *L. graminifolia*
3. Cypselae with 1(3) nerves ... *L. canadensis*
3. Cypselae with (3)5-9 nerves [4]
4. Cypselae purplish to blackish, elliptic ... *L. virosa*
4. Cypselae pale brown to grayish to whitish, obovate to oblanceolate [5]
5. Cauline leaf blades ovate to orbiculate, midribs usually smooth; phyllaries usually erect in fruit ... *L. sativa*
5. Cauline leaf blades oblong, narrowly obovate, to lanceolate, midribs usually prickly setose; phyllaries usually reflexed in fruit ... *L. serriola*

***Lactuca canadensis*** L.— {AFP}

***Lactuca floridana*** (L.)Gaertn.— {AFP}

***Lactuca graminifolia*** Michx.— {AFP}

^ *Lactuca sativa* L.—

\****Lactuca serriola*** L.— {AFP}

\****Lactuca virosa*** L.— {AFP}

**Lagascea** {AFP}

\****Lagascea mollis*** Cav.— {AFP}

**Launaea** {AFP}

\****Launaea intybacea*** (Jacq.)Beauverd— {AFP}

**Leucanthemum** {AFP}

^ *Leucanthemum vulgare* Lam.— {AFP}

**Liatris** {AFP}

1. Rootstock elongate-tuberous to taprooted; heads in corymbiform to racemiform arrays; peduncle (often scaly) 10-75 mm long; involucre 17-27 mm long, 14-26 mm wide ... *L. ohlingerae*
1. Rootstock usually globose (except in *L. garberi*); heads in racemiform to spiciform arrays; peduncle (often scaly) 0-15(25) mm long; involucre 4-25 mm wide [2]
2. Pappus bristles plumose, the segments flexible and to 1 mm long [3]
2. Pappus bristles barbellate, the segments stiff and to 0.4 mm long [4]
3. Involucre 4-8 mm wide, the outer phyllaries 1-2 mm wide; inner phyllaries petaloid, white to pink; heads with 4-6 flowers ... *L. elegans*
3. Involucre 10-25 mm wide, the outer phyllaries 2-3 mm wide; inner phyllaries not petaloid, similar to outer ones; heads with (10)20-45(60) flowers ... *L. squarrosa*
4. Stems glabrous to sparsely pilose [5]
4. Stems puberulent, hispidulous, pilose, hirsute, to strigose, glandular [11]
5. Middle and inner phyllary apices truncate, obtuse, to rounded (rarely acute) [6]
5. Middle and inner phyllary apices mucronate, cuspidate, apiculate, acute, to acuminate [8]
6. Cauline leaves spreading, divergent; heads in loose to dense arrays (internodes 2-14 mm); involucre 5-7 mm wide ... *L. elegantula*

6. Cauline leaves ascending; heads in moderately dense arrays; involucre 4-12 mm wide [7]
7. Stem and leaves glandular-punctate; leaf margins with some hairs >1 mm long; corolla tube inside pilose ... *L. savannensis*
7. Stem and leaves eglandular to weakly glandular-punctate; leaf margins with hairs <0.9 mm long; corolla tube inside glabrous ... *L. spicata*
8. Involucres 10-15 mm long; phyllary apices acute to acuminate ... *L. pauciflora*
8. Involucres 5-9 mm long; phyllary apices retuse, mucronate, cuspidate, or apiculate [9]
9. Basal leaves 1-2(2.5) mm wide, margins usually ciliate proximally, faces glandular-punctate; inner phyllaries usually emarginate-mucronate, lacerate-denticulate ... *L. tenuifolia*
9. Basal leaves (1)2-6(10) mm wide, margins not ciliate, faces (minutely white-dotted by stomates) eglandular or weakly glandular-punctate; inner phyllaries usually obtuse-mucronate [10]
10. Culms (40)50-80(120) cm tall, 4-6 mm wide, the inflorescence ca. half of the culm height; leaves in a well-defined, densely leafy basal rosette, (4)5-7(10) mm wide and 15-20 cm long, mostly lax and spreading; flowering mostly Jul-Sep ... *L. laevigata*
10. Culms (60)75-100(150) cm tall, 2-3 mm wide, the inflorescence ca. 1/4 of the culm height; leaves in a diffuse, few-leaved basal rosette, 2-3 mm wide and 20-30 cm long, mostly somewhat ascending; flowering Oct-Nov ... *L. quadriflora*
11. Involucre (6)8-20 mm wide; florets 11-30 [12]
11. Involucre 2.5-10 mm wide [13]
12. Phyllaries bullate, the hyaline margin relatively wide and erose, lacerate, or irregular ... *L. aspera*
12. Phyllaries not bullate, the hyaline margin narrow to absent, entire ... *L. squarrosula*
13. Peduncles 0-2(3) mm long [14]
13. Peduncles 4-20(30) mm long (if 0-3 mm long, then heads usually secund) [15]
14. Heads rigidly ascending, appressed to rachises and each other, overlapping; phyllary margins usually not ciliolate, apices erect to ascending ... *L. chapmanii*
14. Heads spreading to ascending, not strongly overlapping; phyllary margins ciliolate, apices ascending to slightly spreading ... *L. provincialis*
15. Involucre 10-15 mm long; heads often secund ... *L. secunda*
15. Involucre 4-10 mm long; heads usually not secund [16]
16. Peduncles 10-25(30) mm long; involucres 5-7 mm wide; phyllary apices rounded to subtruncate; florets 7-12 ... *L. patens*
16. Peduncles 0-10(12) mm long; involucres 2.5-5 mm wide; phyllary apices rounded, obtuse, acute, to acuminate; florets 3-10 [17]
17. Rootstock elongate-tuberos; involucre 8-10 mm long; florets 6-10 ... *L. garberi*
17. Rootstock globose; involucre 4-6(7) mm long; florets 3-6(9) [18]
18. Proximal cauline leaves (8)11-22(27) mm wide; floral bracts of proximalmost heads (1.8)2-6(10) mm wide; phyllaries usually acuminate to rarely obtuse ... *L. gholsonii*
18. Proximal cauline leaves 3-8(10) mm wide; floral bracts of proximalmost heads 0.8-2.2 mm wide; phyllaries usually obtuse to rarely acute ... *L. gracilis*

***Liatris aspera*** Michx.— {AFP}

***Liatris chapmanii*** Torr. & A.Gray— {AFP}

***Liatris elegans*** (Walter)Michx.— {AFP}

***Liatris elegantula*** (Greene)K.Schum.— {AFP}

***Liatris garberi*** A.Gray— {AFP}

***Liatris gholsonii*** L.C.Anderson— {AFP} Endemic. State Endangered.

***Liatris gracilis*** Pursh— {AFP}



***Liatris laevigata*** Nutt.—

***Liatris ohlingerae*** (S.F.Blake)B.L.Rob.— {AFP} Endemic. Federally Endangered. State Endangered.

***Liatris patens*** G.L.Nesom & Kral— {AFP}

***Liatris pauciflora*** Pursh var. ***pauciflora***— {AFP}

***Liatris pauciflora*** Pursh var. ***secunda*** (Elliott)D.B.Ward— {AFP}

***Liatris quadriflora*** (Chapm.)— {AFP}

***Liatris provincialis*** R.K.Godfrey— {AFP} Endemic. State Endangered.

***Liatris savannensis*** Kral & G.L.Nesom— {AFP} Endemic.

***Liatris spicata*** (L.)Willd.— {AFP}

***Liatris squarrosa*** (L.)Michx.— {AFP}

***Liatris squarrulosa*** Michx.— {AFP}

***Liatris tenuifolia*** Nutt.— {AFP}

Potential hybrid taxa:

***Liatris* × *boykinii*** Torr. & A.Gray— Thought to be a hybrid of *L. elegans* and *L. tenuifolia*.

***Liatris* × *steelei*** Gaiser— Thought to be a hybrid of *L. aspera* and *L. spicata*.

**Lygodesmia** {AFP}

***Lygodesmia aphylla*** (Nutt.)DC.— {AFP}

**Marshallia** {AFP}

1. Cauline leaves mostly 5–33 mm wide, 3–13 times longer than wide; corolla white ... *M. obovata*

1. Cauline leaves mostly 1–5 mm wide, 13–30 times longer than wide; corolla white, pink, to purple [2]

2. Corollas usually white, rarely pale pink; peduncle hairs lacking purple color; phyllaries acute to obtuse; flowering May–Jun ... *M. ramosa*

2. Corollas usually pink to purple, rarely white; peduncle hairs usually with purple color (sometimes only the septae); phyllaries acuminate to subulate-tipped; flowering Jul–Sep [3]

3. Basal and proximal leaves linear-lanceolate, ascending, relatively firm, secondary veins prominent ... *M. graminifolia* subsp. *graminifolia*

3. Basal and proximal leaves spatulate, elliptic, oblong, spreading, relatively membranous, secondary veins not prominent ... *M. graminifolia* subsp. *tenuifolia*

***Marshallia graminifolia*** (Walter)Small— {AFP}

***Marshallia obovata*** (Walter)Beadle & F.E.Boynton— {AFP} State Endangered.

***Marshallia ramosa*** Beadle & F.E.Boynton— {AFP} State Endangered.

**Melampodium** {AFP}

^ ***Melampodium divaricatum*** (Rich.)DC.— {AFP}

**Melanthera** {AFP}

1. Fertile plants 0.5–2.2 m tall; main stems (2)4–15 mm wide at the base of the plant; petiole (2)5–40 mm long; larger leaf blades (2.5)4–12 cm wide; inflorescence head 0.8–3.2 cm wide with 30–100 florets; larger phyllaries (2.5)3–4 mm wide; corollas 7–9 mm long ... *M. nivea*

1. Fertile plants 0.2–1 m tall; main stems 2–5(7) mm wide at the base of plant; petiole 0–5 mm long; larger leaf blades 0.5–4 cm wide; inflorescence head 0.6–1.8 cm wide with 18–75 florets; larger phyllaries 1.5–3 mm wide; corollas 4.5–6.5 mm long [2]

2. Leaf blades linear to elliptic (lower ones sometimes broadly elliptic or rarely all short and broadly elliptic), unlobed or scarcely lobed, usually 5–13 times long as wide; peduncles (2)5–20 cm long; phyllaries 4–5.5 mm long; paleae 4–5 mm long ... *M. angustifolia*
2. Leaf blades ovate to 3-lobed, rarely elliptic, 1–4 times long as wide; peduncles 2.5–10 cm long; phyllaries 4.5–7 mm long; paleae 5.5–7 mm long ... *M. parvifolia*

***Melanthera angustifolia*** A.Rich.— {AFP}

***Melanthera nivea*** (L.)Small— {AFP}

***Melanthera parvifolia*** Small— {AFP} Endemic. State Threatened.

### **Mikania** {AFP}

1. Stems 6-angled, gray-tomentulose to tomentose; inflorescence heads 7–10 mm long; phyllaries 6–8 mm; corolla lobes linear to linear-deltate, subequal to longer than the upper dilated corolla throat; cypselae 3–4 mm ... *M. cordifolia*

1. Stems terete to 6-angled, glabrate to densely pilose; inflorescence heads 4–7 mm long; phyllaries 3–6 mm; corolla lobes triangular to deltate, ca. ½ the length of the upper dilated corolla throat; cypselae 1.5–2.2 mm [2]

2. Pseudostipule of several linear to deltate lobes basally connate into a membranous flap, the basal unlobed portion somewhat subequal to the lobe length (pseudostipules withered on older nodes); inflorescence branches glabrous to glabrate; phyllaries 3-3.5 mm long, glabrous to glabrate; corolla white, 2.5-3 mm long ... *M. micrantha*

2. Pseudostipule a low ridge with narrowly awl-shaped projections, the projections not basally connate or only scarcely so (pseudostipules withered on older nodes); inflorescence branches glabrate to pubescent; phyllaries (3-)3.5-6 mm long, glabrous to pubescent; corolla white to pinkish, 3.5-4 mm long ... *M. scandens*

***Mikania cordifolia*** (L.f.)Willd.— {AFP}

\*\****Mikania micrantha*** Kunth— {AFP}

***Mikania scandens*** (L.)Willd.— {AFP}

### **Nabalus** {AFP}

1. Inflorescence racemiform or spiciform; phyllaries glabrous; corolla pinkish, lavender, to white ... *N. autumnalis*

1. Inflorescence paniculiform or corymbiform; phyllaries hispid to setose; corolla pale greenish white to pale yellow ... *N. serpentaria*

***Nabalus autumnalis*** (Walter)Weakley— {AFP}

***Nabalus serpentaria*** (Pursh)Hook.— {AFP}

### **Oclemena** {AFP}

***Oclemena reticulata*** (Pursh)G.L.Nesom— {AFP}

### **Onopordum** {AFP}

\****Onopordum acanthium*** L.— {AFP}

### **Packera** {AFP}

1. Annual or biennial; basal leaves pinnately lobed ... *P. glabella*

1. Perennial; basal leaves simple or lobed only at the base of the blade [2]

- 2. Basal leaves cordate ... *P. aurea*
- 2. Basal leaves cuneate to subtruncate [3]
- 3. Plant producing filiform aerial stolons; basal leaf blades orbiculate, ovate, to obovate, mostly 1-2 times as long as wide ... *P. obovata*
- 3. Plant without stolons; basal leaf blades lanceolate, oblanceolate, to elliptic, mostly 2-3 times as long as wide [4]
- 4. Phyllaries 3-5 mm long; pappus 2-3 mm long; corolla tubes 1-2 mm long, lobes 1-2 mm long; cypselae 0.7-1 mm long ... *P. anonyma*
- 4. Phyllaries 5-10 mm long; pappus 3-5 mm long; corolla tubes 2-3 mm long, lobes 2-3 mm long; cypselae 1-2 mm long ... *P. paupercula*

***Packera anonyma*** (A.W.Wood)W.A.Weber & Á.Löve— {AFP}

***Packera aurea*** (L.)Á.Löve & D.Löve— {AFP}

***Packera glabella*** (Poir.)C.Jeffrey— {AFP}

***Packera obovata*** (Muhl. ex Willd.)W.A.Weber & Á.Löve— {AFP}

***Packera paupercula*** (Michx.)Á.Löve & D.Löve— {AFP} Bay Co.

### **Palafoxia** {AFP}

- 1. Plants 1-3 m tall; leaf blades mostly 1.8-9 times longer than wide; phyllaries subequal; corolla tube longer the lobes; pappus scales 1-2 mm long ... *P. feayi*
- 1. Plants 0.3-1.5 m tall; leaf blades 6-15 times longer than wide; phyllaries unequal or subequal; corolla tube shorter than the lobes; pappus scales 2-7 mm long [2]
- 2. Perennial; phyllaries 8-11 mm long, unequal ... *P. integrifolia*
- 2. Perennial or annual; phyllaries 5-8 mm long, subequal ... *P. texana*

***Palafoxia feayi*** A.Gray— {AFP} Endemic.

***Palafoxia integrifolia*** (Nutt.)Torr. & A.Gray— {AFP}

\****Palafoxia texana*** DC.— {AFP}

### **Parthenium** {AFP}

\****Parthenium hysterophorus*** L.— {AFP}

### **Pascalía** {AFP}

^ ***Pascalía glauca*** Ortega— {AFP}

### **Pectis** {AFP}

- 1. Peduncles 0-2 mm long [2]
- 1. Peduncles 3-54 mm long (rarely 1-2 mm long) [3]
- 2. Plant lemon-scented; leaves 8-16 times as long as wide; leaf blade underside with 2 rows of glands 0.2-0.5 mm long; phyllaries distinct and falling individually ... *P. linearifolia*
- 2. Plant without much scent; leaves 4-8 times as long as wide; leaf blade underside with scattered glands 0.1-0.3 mm long; phyllaries coherent at the base and falling as a unit ... *P. prostrata*
- 3. Plant without much scent; leaves narrowly obovate to spatulate ... *P. humifusa*
- 3. Plant spicy-scented; leaves linear [4]
- 4. Leaves congested and internodes short at the stem apex; peduncles usually <10 mm long; phyllaries coherent at the base and falling as a unit ... *P. ×floridana*

4. Leaves distant and internodes long at stem apex; peduncles usually >10 mm long, phyllaries distinct and falling individually ... *P. glaucescens*

***Pectis glaucescens*** (Cass.)D.J.Keil— {AFP} South Florida (northern Caribbean).

***Pectis × floridana*** D.J.Keil— {AFP} Endemic.

\****Pectis humifusa*** Sw.— {AFP}

***Pectis linearifolia*** Urb.— {AFP} Endemic.

***Pectis prostrata*** Cav.— {AFP}

### **Phoebanthus** {AFP}

1. Leaf blade linear to linear-lanceolate, 4-8 times longer than wide, the midrib below < 1/3 the blade width, the larger blades 3-7 mm wide ... *P. grandiflorus*

1. Leaf blade linear-filiform, 10-25 times longer than wide, the midrib below as much as 1/4-1/2 the blade width, the larger blades 0.5-2 mm wide ... *P. tenuifolius*

***Phoebanthus grandiflorus*** (Torr. & A.Gray) S.F.Blake— {AFP} Endemic.

***Phoebanthus tenuifolius*** (Torr. & A.Gray)S.F.Blake— {AFP} State Threatened.

### **Pilosella** {AFP}

^ *Pilosella aurantiaca* (L.) F.W.Schultz & Sch.Bip.— {AFP}

**Pityopsis** {AFP} Recent work has recognized as many as nine native species in Florida, but taxonomic clarity is lacking. The treatment below should be viewed as tentative and tenuous.

"A much larger study is needed to resolve questions on whether splitting up *Pityopsis graminifolia* into more narrowly defined separate species and how many species should be recognized." (Semple & Jabbour 2019). Semple's (1985, 1987, 2006) work is essentially the only thorough treatment of the genus and its taxa, studying specimens in the herbarium and field throughout their ranges. Most of the tissues utilized in a plastome analysis were apparently not vouchered and only vague localities were revealed (Hatmaker 2016; Hatmaker et al. 2020), making it difficult to utilize the results of the study.

1. Basal leaves subequal to shorter than the cauline leaves, the cauline leaves not strongly reduced upward; middle and upper cauline leaves ascending to somewhat spreading, 3-20 mm wide [2]

1. Basal leaves much longer than the cauline leaves; cauline leaves strongly reduced upward; middle and upper cauline leaves ascending to strict or appressed to the stem, <6 mm wide [5]

2. Stems conspicuously flexuous or zigzagged, at least in parts ... *P. flexuosa*

2. Stems generally straight or curving, not conspicuously zigzagged [3]

3. Basal leaves usually persistent when flowering; involucre 8-13 mm long; disc florets >30; stem leaves few, soft and obtuse or slightly acute at apex ... *P. latifolia*

3. Basal leaves usually withered when flowering; Involucre 5-9 mm long; disc florets 15-29; stem leaves dense, stiff and sharply pointed at apex [4]

4. Cauline leaves ascending ... *P. aequilifolia*

4. Cauline leaves spreading or divergent ... *P. falcata*

5. Upper stem, peduncles, phyllaries, and sometimes distal leaves moderately to densely stipitate-glandular [6]

5. Upper stem, peduncles, leaves, and sometimes phyllaries eglandular [7]

- 6. Cauline leaves >10; synflorescence with (4)10-70 heads; involucre 4.5–8 mm long ... *P. aspera*
- 6. Cauline leaves 2-7; synflorescence with 1-5(10) heads; involucre 9–11 mm long ... *P. oligantha*
- 7. Flowering plants robust, often 50-100 cm tall; largest basal leaves on sterile shoots 15-30 cm long, 5-10 mm wide; largest stem leaves 5-11 cm long, 3-5 mm wide; involucre 12-14 mm high; ray florets 13-25; disc florets >30 ... *P. tracyi*
- 7. Flowering plants more delicate, usually <50 cm tall; basal leaves on sterile shoots 10-25 cm long, 1-3 mm wide; largest stem leaves 2-6 cm long, 1-3 mm wide; involucre 5-8 mm long; ray florets 5-12; disc florets 15-29 [9]
- 8. Inner phyllaries densely stipitate-glandular, at least distally ... *P. graminifolia*
- 8. Inner phyllaries eglandular to sparsely glandular ... *P. microcephala*

***Pityopsis aequilifolia*** (F.D.Bowers & Semple)E.L.Bridges & Orzell—

***Pityopsis aspera*** (A.Gray)Small— {AFP}

\****Pityopsis falcata*** (Pursh)Nutt.— {AFP} Perhaps misapplied and absent from Florida.

***Pityopsis flexuosa*** (Nash)Small— {AFP} Endemic. State Endangered.

***Pityopsis graminifolia*** (Michx.)Nutt.— {AFP} [Semple & Jabbour \(2019\)](#) determined that *P. graminifolia* sensu Nesom (2019) was misapplied, though refuted by [Nesom \(2019\)](#).

***Pityopsis latifolia*** (Fernald)E.L.Bridges & Orzell—

***Pityopsis microcephala*** Small—

***Pityopsis nervosa*** (Willd.)Dress— Possibly deserves recognition, but variously interpreted. [Nesom \(2019\)](#) listed *P. nervosa* as a synonym of *P. graminifolia* but alleges the putative type of *P. nervosa* “unambiguously is” *P. microcephala*. On the contrary, Ward (2004) associates *P. nervosa* as part of the “large-headed” complex, following [Dress \(1975\)](#). [Semple \(FNA, vol. 20\)](#) listed *P. nervosa* as a synonym of var. *latifolia*. Type in B. “If additional research determines that *P. latifolia* should be limited to plants in Florida, then *Pityopsis nervosa* [...] is the oldest species epithet to apply to the much more widely distributed species level taxon occurring in much of the southeastern USA, southern Mexico, Guatemala, and Belize.” ([Semple & Jabbour 2019](#)).

***Pityopsis oligantha*** (Chapm. ex Torr. & A.Gray)Small— {AFP}

***Pitopsis tracyi*** (Small)Small—[Nesom \(2019\)](#) suggests some forms may have small heads.

## Pluchea {AFP}

- 1. Stems winged from decurrent leaf bases ... *P. sagittalis*
- 1. Stems unwinged [2]
- 2. Leaves petiolate [3]
- 2. Leaves sessile to subsessile [5]
- 3. Shrubby, 1-4 m tall; leaf blade margins entire to subtly toothed ... *P. carolinensis*
- 3. Herbaceous, 0.3-1.5(2.5) m tall; leaf blade margins conspicuously toothed [4]
- 4. Arrays of heads paniculiform; involucre 3-4 mm wide; inner phyllaries glabrous, sometimes glandular ... *P. camphorata*
- 4. Arrays of heads corymbiform; involucre 4-7 mm wide; inner phyllaries glandular and puberulent ... *P. odorata*
- 5. Involucre 4-6 mm long; phyllaries and corollas pink, purple, to reddish ... *P. baccharis*
- 5. Involucre 5-12 mm long; phyllaries and corollas white (rarely pinkish) [6]
- 6. Leaves mostly 3-13 cm long, 1-4 cm wide; involucre 5-10 mm long; middle phyllaries 1-1.5 mm wide ... *P. foetida*

6. Leaves mostly 8-20 cm long, 3-7 cm wide; involucre 9-12 mm long; middle phyllaries 2-3 mm wide ... *P. longifolia*

***Pluchea baccharis*** (Mill.) Pruski— {AFP}

***Pluchea camphorata*** (L.) DC.— {AFP}

\*\****Pluchea carolinensis*** (Jacq.) G. Don— {AFP} Small (1929:53, as the misapplied *P. odorata*) reported it was first known from Key West and subsequently had spread elsewhere in Florida. The epithet references the Carolinas, apparently in error, as this species is unknown from that area. Given the date of its earliest known collections and its habitat preference, this species is presently thought to be non-native to Florida (Bradley 2012).

***Pluchea foetida*** (L.) DC.— {AFP}

***Pluchea longifolia*** Nash— {AFP} Endemic.

***Pluchea odorata*** (L.) Cass.— {AFP}

\****Pluchea sagittalis*** (Lam.) Cabrera— {AFP}

**Polymnia** {AFP}

***Polymnia laevigata*** Beadle— {AFP} State Endangered.

**Praxelis** {AFP}

\****Praxelis clematidea*** (Kuntze) R. M. King & H. Rob.— {AFP}

**Pseudelephantopus** {AFP}

\****Pseudelephantopus spicatus*** (B. Juss. ex Aubl.) C. F. Baker— {AFP}

**Pseudognaphalium** {AFP}

1. Leaf surfaces concolorous, persistently tomentose on both surfaces, the bases clasping to subclasping [2]

1. Leaf surfaces discolorous, the upper greenish and glabrate to minutely pubescent, the lower densely tomentose, the base not clasping [3]

2. Leaf blades narrowly oblanceolate, margins not revolute; apex of corollas yellowish; cypselae glabrous ... *P. domingense*

2. Leaf blades linear-oblong, margins distinctly revolute; apex of corollas reddish; cypselae papillate with myxogenic hairs ... *P. luteoalbum*

3. Stems greenish and densely stipitate-glandular; pistillate florets 83-107; bisexual florets 9-15 ... *P. helleri*

3. Stems whitish-tomentose, usually eglandular; pistillate florets 38-96; bisexual florets 4-8(11) ... *P. obtusifolium*

\****Pseudognaphalium domingense*** (Lam.) Anderb.— {AFP}

***Pseudognaphalium helleri*** (Britton) Anderb.— {AFP}

\****Pseudognaphalium luteoalbum*** (L.) Hilliard & B. L. Burtt— {AFP}

***Pseudognaphalium obtusifolium*** (L.) Hilliard & B. L. Burtt— {AFP}

**Pseudogynoxys** {AFP}

\****Pseudogynoxys chenopodioides*** (Kunth) Cabrera— {AFP}

**Pterocaulon** {AFP}

***Pterocaulon pycnostachyum*** (Michx.) Elliott— {AFP}

## Pulicaria {AFP}

\**Pulicaria arabica* (L.)Cass.— {AFP}

## Pyrrhopappus {AFP}

*Pyrrhopappus carolinianus* (Walter)DC.— {AFP}

## Ratibida {AFP}

1. Ray corolla yellow to maroon; disc cylindrical or columnar, 1.8-4.3 times longer than wide ... R. columnifera

1. Ray corolla yellow; disc ellipsoid to globular or ovoid, 0.8-1.7 times longer than wide ... R. pinnata

\**Ratibida columnifera* (Nutt.) Wooten & Standl.— {AFP}

*Ratibida pinnata* (Vent.)Barnhart— {AFP}

## Rayjacksonia {AFP}

*Rayjacksonia phyllocephala* (DC.)R.L.Hartm. & M.A.Lane— {AFP}

## Rudbeckia {AFP}

1. Basal and proximal leaves 0.5-1 cm wide, linear to linear-lanceolate [2]

1. Basal and proximal leaves 1.3-12 cm wide, not linear [3]

2. Stems strigose; heads 1-3; ray corolla laminae orange-red to dark purplish red ... R. graminifolia

2. Stems glabrate; heads 3-15; ray corolla laminae yellow ... R. mohrii

3. Basal and proximal leaves lobed [4]

3. Basal and proximal leaves unlobed [5]

4. Disc corollas yellow (drying brownish); pappi coroniform or of 4 scales to 1.5 mm long; cypselae 3-5 mm long ... R. laciniata var. laciniata

4. Disc corollas primarily brown-purple (drying blackish); pappi coroniform to 0.2 mm long; cypselae 2-3 mm long ... R. triloba var. pinnatiloba

5. Mid-cauline leaves petiolate or the blade base cuneate to attenuate [6]

5. Mid-cauline leaves sessile, the blade base clasping to truncate [7]

6. Mid-cauline leaves petiolate, the blade base cordate to abruptly short-cuneate ... R. laciniata var. heterophylla

6. Mid-cauline leaves sessile to short-petiolate, the blade base cuneate to attenuate ... R. nitida

7. Stem and leaves glabrate [8]

7. Stem and leaves pubescent, strigose to hirsute [9]

8. Annual; pappus absent; disc longer than to subequal to width; cypselae 1.8-2.5 mm long ... R. amplexicaulis

8. Rhizomatous; disc wider than or subequal to length; pappus of 4-6 unequal scales; cypselae 3.5-5 mm long ... R. auriculata)

9. Stem and leaves softly pilose to woolly ... R. mollis

9. Stem and leaves glabrate, strigose to coarsely hispid or hirsute [10]

10. Stem and leaves glabrate to strigose, occasionally partly hirsute near the base; pappus coroniform to 0.2 mm long; cypselae 2.2-4 mm long ... R. fulgida

10. Stem and leaves copiously hispid or hirsute; pappus absent; cypselae 1.5-2.7 mm long ... R. hirta

***Rudbeckia auriculata*** (Perdue)Kral— {AFP} State Endangered.

***Rudbeckia fulgida*** Aiton— {AFP}

***Rudbeckia graminifolia*** (Torr. & A.Gray)C.L.Boynton & Beadle— {AFP} Endemic.

***Rudbeckia hirta*** L.— {AFP}

***Rudbeckia laciniata*** L.— {AFP}

***Rudbeckia mohrii*** A.Gray— {AFP}

***Rudbeckia mollis*** Elliott— {AFP}

***Rudbeckia nitida*** Nutt.— {AFP} State Endangered.

***Rudbeckia triloba*** L.— {AFP} State Endangered.

**Sachsia** {AFP}

***Sachsia polycephala*** Griseb.— {AFP} State Threatened.

**Sclerolepis** {AFP}

***Sclerolepis uniflora*** (Walter)Britton et al.— {AFP}

**Senecio** {AFP}

\****Senecio brasiliensis*** (Spreng.)Less. var. ***tripartitus*** (DC.)Baker— {AFP}

\****Senecio vulgaris*** L.— {AFP}

**Sericocarpus** {AFP}

1. Cauline (at least proximal ones) and basal leaf blades toothed, basal or proximal leaves usually persistent on flowering stems; phyllaries recurved or spreading ... *S. cespitosus*

1. Cauline leaf blades entire, sometimes the few most basal leaves toothed but these usually withered or absent on flowering stems; phyllaries erect or appressed (basalmost ones sometimes recurved or spreading) ... *S. tortifolius*

***Sericocarpus asteroides*** (L.)Britton et al.— {AFP}

***Sericocarpus tortifolius*** (Michx.)Nees— {AFP}

**Silphium** {AFP}

1. Stem hispid to scabrous; leaf blade unlobed (merely dentate to entire), to 5 cm wide ... *S. asteriscus*

1. Stem glabrous; leaf blade usually at least some lobed, rarely unlobed, to 52 cm wide ... *S. compositum*

***Silphium asteriscus*** L.— {AFP}

***Silphium compositum*** Michx.— {AFP}

**Smallanthus** {AFP}

***Smallanthus uvedalia*** (L.)Mack. ex Small— {AFP}

**Solidago** {AFP}

subg. *Solidago*

sect. *Erectae*, subsect. *Erectae*, ser. *Puberulae*: ***S. pulverulenta***

sect. *Thyrsoflorae*: ***S. petiolaris***



subg. Pleiactila

sect. Glomeruliflorae: ***S. caesia*, *S. flaccidifolia***

sect. Maritimae: ***S. mexicana*, *S. austrina*, *S. gracillima*, *S. chrysopsis*, *S. virgata***

sect. Argutae, subsect. Argutae: ***S. arguta* var. *caroliniana***

sect. Argutae, subsect. Patulae: ***S. salicina***

sect. Venosae, subsect. Venosae: ***S. fistulosa*, *S. latissimifolia*, *S. rugosa* var. *aspera*, *S. rugosa* var. *celandifolia***

sect. Venosae, subsect. Ulmifoliae, ser. Ulmifoliae: ***S. brachyphylla*, *S. ulmifolia***

sect. Venosae, subsect. Ulmifoliae, ser. Auriculatae: ***S. auriculata***

sect. Unilaterales, subsect. Triplinerviae, ser. Canadensae: ***S. altissima* var. *pluricephala***

sect. Unilaterales, subsect. Triplinerviae, ser. Tortifoliae: ***S. leavenworthii*, *S. tortifolia***

sect. Unilaterales, subsect. Serotinae: ***S. gigantea***

subg. Nemorales: ***S. nemoralis***

subg. Triactis, sect. Odorae: ***S. chapmanii*, *S. odora***

1. Leaf bases cordate- or auriculate-clasping around the stem ... *S. auriculata*

1. Leaf bases not clasping the stem [2]

2. Heads axillary in small clusters subtended by leaves 2 times or more as long as the clusters (at least the proximal clusters), occasionally the clusters elongate but then subtended by leaves >6 cm long [3]

2. Heads in thyrsiform, racemiform, or paniculiform arrays, the clusters subtended by reduced leafy bracts <6 cm long and subequal to shorter than the clusters [5]

3. Stems erect, not glaucous, weakly or not anthocyanic; proximal to mid-cauline leaves broadly lanceolate to elliptic, 3.6–18 cm long, 1–6 cm wide ... *S. flaccidifolia*

3. Stems arching, glaucous, strongly anthocyanic; proximal to mid-cauline leaves lanceolate, 5–15 cm long, 0.8–3 cm wide [4]

4. Stems strongly arching; proximal midcauline leaves narrowly lanceolate, 5–15 cm long, 0.8–3 cm wide ... *S. caesia* var. *caesia*

4. Stems weakly arching; proximal midcauline leaves shorter and broadly lanceolate to rhombic, 5–9 cm long, 1.3–2.4 cm wide ... *S. caesia* var. *zedia*

5. Leaves strongly rugose-veined, the lateral and some additional veins prominent and strongly discoloured from the lower surface, impressed on the upper surface [6]

5. Leaves not strongly rugose-veined, the lateral veins scarcely prominent and concolorous to slightly discolour with the lower surface, not or only scarcely impressed on the upper surface [7]

6. Distal cauline leaves lanceolate to elliptic, not much reduced distally ... *S. rugosa* var. *aspera*

6. Distal cauline leaves ovate, much reduced distally ... *S. rugosa* var. *celandifolia*

7. Stems below inflorescence arrays glabrous to glabrate or sparsely strigose [8]

7. Stems below inflorescence arrays distinctly pubescent [13]

8. Basal and proximalmost cauline leaves relatively large, distal cauline leaves strict to ascending-appressed, and much reduced; leaves glabrous (sect. Maritimae) ... Key A

8. Basal and proximalmost cauline leaves absent or relatively small, distal cauline leaves spreading to ascending or appressed; leaves sometimes pubescent or scabrous [9]

9. Leaves scabrous or hirsute on the upper surface [10]

9. Leaves glabrous to glabrate on the upper surface [11]

10. Basal and proximal leaves larger than distal ones, with long, winged petioles; disc florets 5–15 ... *S. salicina*

10. Basal and proximal leaves subequal to slightly smaller than distal ones, with short, winged petioles; disc florets 4–7 ... *S. ulmifolia*

11. Leaves linear-lanceolate to lanceolate ... *S. gigantea*
11. Leaves ovate, elliptic, to elliptic-lanceolate [12]
12. Basal leaves usually present at flowering, long-petiolate; cauline leaf blades abruptly contracted to the petiole ... *S. arguta* var. *caroliniana*
12. Basal leaves usually absent at flowering, short-petiolate; cauline leaf blades cuneate at the base ... *S. latissimifolia*
13. Main panicle branches not recurved, usually not secund [14]
13. Main panicle branches mostly secund and recurved [15]
14. Phyllaries stipitate-glandular; ray florets (5)7-9; cypselae 3-4 mm long ... *S. petiolaris*
14. Phyllaries not stipitate-glandular; ray florets 9-16; cypselae 0.8-1.5 mm long ... *S. pulverulenta*
15. Leaves entire, with anise-like odor when crushed [16]
15. Leaves (at least some) toothed, without anise-like odor [17]
16. Stems uniformly puberulent, sometimes with a short glabrous to glabrate strip below the leaf; mid-cauline leaves mostly (15)30-70 mm long, 8-20 mm wide (2-6 times as long as wide) ... *S. chapmanii*
16. Stems puberulent in lines decurrent from distal leaf bases; mid-cauline leaves mostly 40-110 mm long, 5-15(20) mm wide (4-15 times as long as wide) ... *S. odora*
17. Proximal leaf blades mostly <6 cm long, 2-4 times longer than wide; ray florest 0-2 ... *S. brachyphylla*
17. Proximal leaf blades mostly >6 cm long, 4-15 times longer than wide; ray florets 2-18 [18]
18. Cauline leaves long-tapering or long-cuneate at the base [19]
18. Cauline leaves truncate to scarcely tapering at the base [20]
19. Leaves spatulate to oblanceolate, 1-veined, the apex short-acute to rounded, often reduced and subentire distally ... *S. nemoralis*
19. Leaves lanceolate, often 3-veined, the apex long-acute to acuminate, mostly rather large distally ... *S. altissima* var. *pluricephala*
20. Stem short-hirsute; leaves lanceolate to elliptic-oblong ... *S. fistulosa*
20. Stem puberulent, scabrellous, to strigillose; leaves linear-lanceolate to narrowly elliptic [21]
21. Leaves not twisted, mostly with numerous teeth; ray florest 8-15 ... *S. leavenworthii*
21. Leaves twisted, subentire or with few teeth; ray florets 2-8 ... *S. tortifolia*

Key A: sect. *Maritimae*

1. Distal cauline leaves numerous, large, thick to somewhat fleshy; heads in narrowly to broadly cone-shaped secund arrays, branches secund, proximal arching ... *S. mexicana*
1. Distal cauline leaves fewer or leaves much reduced, not fleshy to somewhat fleshy; heads in thyriform or wand-shaped, sometimes secund arrays, proximal branches usually short, ascending, rarely some much elongated [2]
2. Basal leaves sparsely to obviously serrate; arrays sometimes with much elongate proximal arching branches [3]
2. Basal leaves entire, sometimes crenate; arrays narrow, without elongate proximal branches [4]
3. Basal leaves larger, oblanceolate; inflorescence arrays of many branches that grade from short to distally short to proximately mid length with the longest spreading and arching ... *S. austrina*
3. Basal leaves smaller, not oblanceolate; inflorescence arrays of few long to very long lower inflorescence branches ... *S. gracillima*
4. Basal leaves 2-5(10) mm wide; disc florets 2-5(8) ... *S. chrysopsis*
4. Basal leaves (5)10-40 mm wide; disc florets (6)8-12 ... *S. virgata*

***Solidago altissima*** L. var. ***pluricephala*** M.C.Johnst.— {AFP}

***Solidago arguta*** Aiton var. ***caroliniana*** A.Gray— {AFP}

***Solidago auriculata*** Shuttlew. ex S.F.Blake— {AFP}

***Solidago austrina*** Small—Eastern panhandle (Piedmont). Like *S. chrysopsis*, segregated from *S. virgata*; "Confusion in separating *Solidago austrina*, *S. stricta*, and *S. virgata* is understandable and complicated by multiple ploidy levels known in *S. austrina* (2x, 4x) and *S. virgata* (2x, 4x, 6x)." (Semple et al. 2016). Whether there is admixture and the potential to treat some segregates as infraspecific taxa remains nebulous.

***Solidago brachyphylla*** Chapm. ex Torr. & A.Gray— {AFP}

***Solidago caesia*** L.— {AFP}

***Solidago chapmanii*** A. Gray—{AFP}

***Solidago chrysopsis*** Small—Endemic. South Florida.

***Solidago fistulosa*** Mill.— {AFP}

***Solidago flaccidifolia*** Small— {AFP}

***Solidago gigantea*** Aiton— {AFP}

***Solidago gracillima*** Torr. & A.Gray— {AFP}

***Solidago latissimifolia*** Mill.— {AFP}

***Solidago leavenworthii*** Torr. & A.Gray— {AFP}

***Solidago mexicana*** L.— {AFP} Once treated as *S. sempervirens*, now called *S. mexicana* in Florida. "Confusion in separating *Solidago mexicana*, *S. sempervirens*, and *S. virgata* is understandable and complicated by multiple ploidy levels known in *S. mexicana* (2x, 4x) and *S. virgata* (2x, 4x, 6x)." and "Some collections of diploid *S. mexicana* from Florida can be difficult to separate from some *S. maya* and *S. virgata* collections; this is true in the field and with herbarium specimens." (Semple 2016).

***Solidago nemoralis*** Aiton— {AFP}

***Solidago odora*** Aiton— {AFP}

***Solidago petiolaris*** Aiton— {AFP}

***Solidago pulverulenta*** Nutt.— {AFP}

***Solidago rugosa*** Mill. subsp. ***aspera*** (Aiton)Cronquist— {AFP}

***Solidago salicina*** Elliott— {AFP}

***Solidago tortifolia*** Elliott— {AFP}

***Solidago ulmifolia*** Muhl. ex Willd.— {AFP}

***Solidago virgata*** Michx.— {AFP} Throughout (SE Coastal Plain). Once treated as *S. stricta*, now determined to be *S. virgata* in Florida (Semple 2013).

## Soliva {AFP}

1. Leaves 1-pinnately lobed, rarely 2-pinnately lobed, blades 1-2(3) cm long; cypselar wings rugulose or ribbed nearly throughout, shoulders spinose laterally ... *S. stolonifera*)
1. Leaves mostly 2- or 3-pinnately lobed, blades 2-8(15) cm long; cypselar wings not rugulose nor ribbed, or rugulose or ribbed only 2/3 of length, shoulders spinose or not laterally [2]
2. Heads mostly in the proximal leafless half of the plant; cypselar bodies oblanceolate to oblong-cuneate, marginal wings transversely rugulose or ribbed, shoulders not spinose laterally, faces distally villous to pilose or glabrescent ... *S. anthemifolia*
2. Heads mostly in the distal, leafy part of the plant; cypselar bodies obovate to oblanceolate, marginal wings not transversely rugulose or ribbed, shoulder usually spinose laterally, faces glabrous or scabrellous to hirtellous ... *S. sessilis*

\**Soliva anthemifolia* (Juss.)Sweet— {AFP}

\**Soliva sessilis* Ruiz & Pav.— {AFP}

\**Soliva stolonifera* (Brot.)Sweet— {AFP}

### Sonchus {AFP}

1. Leaf margin densely, copiously prickly throughout, the basal auricles often recurved or curled, rounded; peduncle and phyllaries usually glabrous, infrequently stipitate-glandular; corolla ligule mostly shorter than the tube; cypselae longitudinally ribbed, otherwise smooth ...  
S. asper

1. Leaf margin weakly prickly, the basal auricles usually mostly straight; peduncle and phyllaries usually stipitate-glandular; corolla ligule subequal to the tube; cypselae longitudinally ribbed, faces transversely rugulose or tuberculate ... S. oleraceus

\**Sonchus asper* (L.)Hill— {AFP}

\**Sonchus oleraceus* L.— {AFP}

### Sphagneticola {AFP}

\**Sphagneticola trilobata* (L.)Pruski— {AFP}

### Stokesia {AFP}

*Stokesia laevis* (Hill)Greene— {AFP}

### Symphyotrichum {AFP}

1. Annuals with a fibrous-rooted taproot; ray or pistillate florest in 1-5 series [2]

1. Perennials, with rhizomes or hardened rootstock; ray florets in 1 series [5]

2. Ray laminae pink to lavender, drying in 2-3(4) coils; disc florets 11-23; pappus (3.2)3.6-5 mm long ... S. bahamense

2. Ray laminae usually white (rarely pink or lavender), curling or drying in 1 coil; disc florets (3)4-15; pappus 3.5-5.5 mm long [3]

3. Phyllaries 30-42; ray laminae longer than pappi; pappus 3.5-3.8(4.2) mm long ... S. expansum

3. Phyllaries 18-30; ray laminae shorter than to subequal to pappi; pappus 3.5-5.5 mm long [4]

4. Green zones of phyllaries nearly absent from proximal portion; ray florets in (2)3 series; diploid ... S. squamatum

4. Green zones of phyllaries extending throughout the phyllary length; ray florets in 2 series; tetraploid ... S. subulatum

5. Stems densely covered in scabrous, stiff scale-like leaves, these <1 cm long (basal-most leaves larger) [6]

5. Stems not densely covered in scale-like leaves, most cauline leaves >1 cm long, not scale-like or not scabrous or not stiffened [7]

6. Plant scabridulous; cauline leaves appressed, distal ones adnate to stem for 1/2 or more of their length ... S. adnatum)

6. Plant glabrate; cauline leaves spreading, clasping ... S. walteri

7. Basal leaves linear, entire, to 15-30 cm long, 25-70 times longer than wide, cauline leaves highly reduced ... S. chapmanii

7. Basal leaves not linear, entire or toothed [8]

8. Rootstock corm-like, globose to elongate; leaves and phyllaries silvery, silky-pilose or usually at least some hispid-pilose [8]

8. Rootstock not corm-like; leaves and phyllaries green, glabrous to pubescent [12]

9. Stems ± branched; distal leaves 10–30 × 4–8 mm; arrays open, paniculiform; outer phyllaries ± foliaceous (at least distally); ray florets 13–36; disc florets 15–48; cypselae glabrous ... *S. plumosum*
9. Stems simple; distal leaves 8–15 × 1.8–5 mm; arrays narrow (wand-shaped), paniculiform, sometimes racemiform; outer phyllaries not foliaceous; ray florets 7–12; disc florets 9–21; cypselae densely strigose [10]
10. Leaf faces sparsely to moderately finely woolly-pilose, denser distally; involucre 7–9 mm; phyllaries spreading to reflexed ... *S. pratense*
10. Leaf faces glabrous or densely canescent distally; involucre 5–7 mm; phyllaries appressed [11]
11. Distal cauline leaves and phyllaries moderately to densely silky; e United States ... *S. concolor* var. *concolor*
11. Distal cauline leaves and phyllaries glabrous or sparsely hispid-pilose; panhandle Florida ... *S. concolor* var. *devestitum*
12. Stem base 5–15 mm wide; cauline leaves 2–5 cm wide, the base often sheath-like and persistent on older parts; involucre 8–15 mm wide ... *S. elliotii*
12. Stem base 1–3 mm wide; cauline leaves 0.1–2.5 cm wide, the base not sheath-like, sometimes clasping; involucre 4–10 mm wide [13]
13. Leaf bases truncate to cuneate, sometimes partly sheathing, not clasping at the base [14]
13. Leaf bases cordate- or auriculate-clasping [23]
14. Stems densely pilose or hirsute, rarely glabrate ... *S. pilosum*
14. Stems glabrous to scabrous or sparsely pubescent [15]
15. Plant subsucculent, of brackish areas; stems with few leaves [16]
15. Plant not succulent, of freshwater areas; stems leafy [17]
16. Rhizomes short; stems 1–many; mid-cauline leaves (1)1.5–2.7 mm wide; involucre 4.1–5.3 mm long; ray florets 10–16; disc florets (10)13–23, corollas 3.4–4.6 mm long; cypselae 1.5–2(2.5) mm long; pappi 3–4.4 mm long ... *S. tenuifolium* var. *aphyllum*
16. Rhizomes long; stems 1; mid-cauline leaves (1.5)3–6 mm wide; involucre 6–9.5(11) mm long; ray florets (12)17–25; disc florets 25–45(54), corollas (4)4.7–6(6.5) mm long; cypselae 2.8–4(4.5) mm long; pappi 5–6.1 mm long ... *S. tenuifolium* var. *tenuifolium*
17. Leaves subtending peduncles 2–7 mm long, 1–2 mm wide, peduncles often copiously bracteate, with 5–15 bracts; heads rather small [18]
17. Leaves subtending peduncles 10–80 mm long, 1–30 mm wide, peduncles usually with few bracts; heads rather larger [20]
18. Ray corollas white, rarely pinkish, the laminae 0.5–1.2 mm wide; pappus 2.5–3.5 mm long; cypselae 1–1.8 mm long, faintly 4–5-nerved ... *S. racemosum*
18. Ray corollas pinkish, bluish, to white, the laminae 1–1.7 mm wide; pappus 3–4.5 mm long; cypselae 1.5–2.5 mm long, prominently 3–4-nerved [19]
19. Middle and distal leaves mostly spreading to descending ... *S. dumosum* var. *coridifolium*
19. Middle to distal leaves strongly ascending ... *S. dumosum* var. *subulifolium*
20. Stems usually ascending to erect, sometimes arching; disc corollas whitish to cream, lobes strongly reflexed, lanceolate, 0.9–1.7 mm long (lengths 1/2–3/4 of corollas) ... *S. lateriflorum*
20. Stems erect; disc florets white to yellow, lobes sometimes spreading, triangular, 0.4–1.3 mm long (lengths to 1/2 of corollas) [21]
21. Leaves thin, margins flat; peduncle bracts 5–13; phyllaries linear-lanceolate, subequal to unequal, outer often foliaceous ... *S. lanceolatum* var. *latifolium*
21. Leaves firm, margins often recurved; peduncle bracts 1–3(5); phyllaries oblong-lanceolate, unequal, outer sometimes foliaceous [22]

22. Cauline leaves sharply reduced on array branches, adaxial faces not waxy, abaxial with indistinct, elongate areoles (axillary clusters absent); peduncle bracts reduced, grading into phyllaries; disc corollas yellow turning reddish; cypselae 2–2.6 mm ... *S. simmondsii*
22. Cauline leaves progressively reduced distally, adaxial faces waxy, abaxial with well-marked, isodiametric areoles (axillary clusters often present); peduncle bracts foliaceous, distal closely subtending heads, not grading into phyllaries; disc corollas cream to pale yellow turning pinkish; cypselae 1.5–2 mm ... *S. praealtum*
23. Proximal leaves sessile to subsessile, the blade base clasping; stems pubescent [24]
23. Proximal leaves winged-petiolate, the petiole base clasping (middle and distal sometimes sessile); stems glabrous to pubescent [26]
24. Phyllaries (stems, leaves) stipitate-glandular; leaf margins revolute, sometimes undulate; ray laminae 14–24 mm long, 1.5–3.5 mm wide ... *S. georgianum*
24. Phyllaries eglandular (if stipitate-glandular, then leaf margins flat, not undulate, ray laminae 10–18(20) mm long, 1–3 mm wide) [25]
25. Proximal cauline leaf bases not constricted proximally; distal leaf blades lanceolate or oblanceolate to oblong-lanceolate, bases cuneate to rounded, subclasping, apices acute or acuminate, subspinulose; involucre 6–7.6 mm; cypselae sparsely strigillose to glabrate ... *S. fontinale*
25. Proximal cauline leaf bases broadened proximal to constriction; distal leaf blades narrowly to broadly ovate, bases strongly cordate-clasping to auriculate-amplexicaul, apices usually acute, sometimes obtuse, mucronate to white-spinulose; involucre 5.5–12 mm; cypselae sericeous or strigillose ... *S. patens*
26. Ray florets white to pale pink ... *S. urophyllum*
26. Ray florets usually pale to dark blue or purple, rarely white [27]
27. Proximal cauline leaves winged-petiolate, wings wider distally and leaves sessile, the wings abruptly widening at the strongly auriculate-clasping petiolar bases ... *S. undulatum*
27. Cauline leaves narrowly winged-petiolate, the wings not widening at the clasping petiolar bases [28]
28. Basal leaf bases usually deeply cordate, sometimes rounded or abruptly attenuate, proximal cauline bases cordate, rounded, or truncate, sometimes cuneate ... *S. shortii*
28. Basal leaf bases shallowly cordate or rounded to attenuate, proximal cauline bases rounded to attenuate [29]
29. Leaf faces scabrous, adaxially strongly strigose, abaxially strigose to piloso-strigose or hirsute ... *S. oolentangiense*
29. Leaf faces glabrous ... *S. laeve* var. *concinnum*

***Symphyotrichum adnatum*** (Nutt.) G.L. Nesom — {AFP}

***Symphyotrichum bahamense*** (Britton) G.L. Nesom — {AFP}

***Symphyotrichum carolinianum*** (Walter) Wunderlin & B.F. Hansen — {AFP}

***Symphyotrichum chapmanii*** (Torr. & A. Gray) Semple & Brouillet — {AFP}

***Symphyotrichum concolor*** (L.) G.L. Nesom var. ***concolor*** — {AFP}

***Symphyotrichum concolor*** (L.) G.L. Nesom var. ***devestitum*** (S.F. Blake) Semple — {AFP}

***Symphyotrichum dumosum*** (L.) G.L. Nesom — {AFP}

***Symphyotrichum elliotii*** (Torr. & A. Gray) G.L. Nesom — {AFP}

***Symphyotrichum expansum*** (Poeppig ex Spreng.) G.L. Nesom — {AFP}

***Symphyotrichum fontinale*** (Alexander) G.L. Nesom — {AFP} Endemic.

***Symphyotrichum georgianum*** (Alexander) G.L. Nesom — {AFP}

***Symphyotrichum laeve*** (L.) Á. Löve & D. Löve var. *concinnum* (Willd.) G.L. Nesom — {AFP}

***Symphiotrichum lanceolatum*** (Willd.)G.L.Nesom var. *latifolium* (Semple & Chmiel.)  
G.L.Nesom— {AFP}

***Symphiotrichum lateriflorum*** (L.)Á.Löve & D.Löve— {AFP}

\****Symphiotrichum oolentangiense*** (Riddell)G.L.Nesom— {AFP}

***Symphiotrichum patens*** (Aiton)G.L.Nesom— {AFP}

***Symphiotrichum pilosum*** (Willd.)G.L.Nesom— {AFP}

***Symphiotrichum plumosum*** (Small)Semple— {AFP} Endemic.

***Symphiotrichum praealtum*** (Poir.)G.L.Nesom— {AFP}

***Symphiotrichum racemosum*** (Elliott) G.L.Nesom— {AFP}

***Symphiotrichum sericeum*** (Vent.)G.L.Nesom var. ***microphyllum*** (DC.)Wunderlin &  
B.F.Hansen— {AFP}

***Symphiotrichum shortii*** (Lindl.)G.L.Nesom— {AFP}

***Symphiotrichum simmondsii*** (Small)G.L.Nesom— {AFP}

\****Symphiotrichum squamatum*** (Spreng.)G.L.Nesom— {AFP}

***Symphiotrichum subulatum*** (Michx.)G.L.Nesom— {AFP}

***Symphiotrichum tenuifolium*** (L.)G.L.Nesom— {AFP}

***Symphiotrichum undulatum*** (L.)G.L.Nesom— {AFP}

***Symphiotrichum urophyllum*** (Lindl. ex DC.)G.L.Nesom— {AFP}

***Symphiotrichum walteri*** (Alexander)G.L.Nesom— {AFP}

**Synedrella** {AFP}

\****Synedrella nodiflora*** (L.)Gaertn.— {AFP}

**Tagetes** {AFP}

1. Perennial; leaves simple, toothed ... *T. lucida*

1. Annual or perennial; leaves pinnately lobed or compound, and toothed [2]

2. Perennial; leaf rachis often winged and toothed ... *T. lemmonii*

2. Annual; leaf rachis sometimes winged, but rarely with 1-2 teeth [3]

3. Leaflets or lobes mostly with 0-8 teeth per side; heads generally solitary; peduncles 30-  
100(150) mm; involucre 10-22 mm long, (3)5-13 mm wide; ray laminae (2)12-18(27) mm long ...

*T. erecta*

3. Leaflets or lobes mostly with 6-20 teeth per side; heads several together in a corymbiform  
cluster; peduncles 1-5(10) mm; involucre 7-11 mm long, 1.5-3 mm wide; ray laminae 1-2 mm  
long ... *T. minuta*

^ *Tagetes erecta* L.— {AFP}

^ *Tagetes lemmonii* A.Gray—

^ *Tagetes lucida* Cav.— {AFP}

^ *Tagetes minuta* L.— {AFP}

**Taraxacum** {AFP} The taxonomy of *Taraxacum* is extremely convoluted with 1000s of  
microspecies (Moonlight et al. 2024). See [here](#) for a recent discussion. Lucky for us,  
diversity is quite low in Florida and for convenience the most widely used name is applied, *T.*  
*officinale*.

\****Taraxacum officinale*** Weber ex F.H.Wigg.— {AFP}

**Tetragonotheca** {AFP}

***Tetragonotheca helianthoides*** L.— {AFP}

**Thymophylla** {AFP}

\****Thymophylla tenuiloba*** (DC.) Small— {AFP}

**Tithonia** {AFP}

1. Perennial, subshrub to shrubs; phyllaries 16-28, the outer shorter than the inner; ray laminae 48-69 mm long; disc florets 80-130; cypselae 4-6 mm long ... *T. diversifolia*

1. Annual; phyllaries 12-16, the outer longer to subequal to the inner; ray laminae 20-33 mm long; disc florets 60-90; cypselae 5-9 mm long ... *T. rotundifolia*

\****Tithonia diversifolia*** (Hemsl.) A. Gray— {AFP} Peninsula (native to Mexico, Central America).  
Disturbed areas (also commonly cultivated).

^ ***Tithonia rotundifolia*** (Mill.) S. F. Blake— {AFP}

**Tridax** {AFP}

\****Tridax procumbens*** L.— {AFP}

**Verbesina** {AFP}

1. Leaves alternate [2]

1. Leaves all opposite or nearly so, at least in the basal half, upper reduced ones sometimes alternate below the inflorescence [4]

2. Annual; leaf lower surface white strigose-canescens, especially when young; heads 10-20 mm wide, phyllaries 8-24 mm long ... *V. encelioides*

2. Perennial; leaf lower surface scabrous, strigellous, to glabrate; heads 4-13 mm wide, phyllaries 2-8 mm long [3]

3. Heads globose; phyllaries reflexed to spreading; corolla yellow; disc florets 40-60 ... *V. alternifolia*

3. Heads hemispheric to obconic; phyllaries erect to ascending, the tips sometimes reflexed; corolla white or whitish; disc florets 8-15 ... *V. virginica*

4. Stem unwinged, leaves not decurrent [5]

4. Stem winged from decurrent leaves [6]

5. Leaf blade sharply serrate nearly to the base; heads 3-15(20), 0.7-1.2 cm wide, radiate ... *V. aristata*

5. Leaf blade bluntly or coarsely toothed mostly above the middle; heads 1-3(5), 1-2 cm wide, discoide ... *V. chapmanii*

6. Cauline leaves sessile, the distal ones sharply reduced below the inflorescence; heads usually 1-15 ... *V. heterophylla*

6. Cauline leaf blade abruptly reduced and decurrent along a petiole, the distal ones gradually reduced; heads usually 20 or more ... *V. occidentalis*

***Verbesina alternifolia*** (L.) Britton ex Kearney— {AFP}

***Verbesina aristata*** (Elliott) A. Heller— {AFP}

***Verbesina chapmanii*** J. R. Coleman— {AFP} Endemic. State Threatened.

\****Verbesina encelioides*** (Cav.) Benth. & Hook. f. ex A. Gray— {AFP}

***Verbesina heterophylla*** (Chapm.) A. Gray— {AFP} State Endangered.

***Verbesina occidentalis*** (L.) Walter— {AFP}

***Verbesina virginica*** L.— {AFP}



## Vernonia {AFP}

1. Leaves entire or toothed, lateral veins obscure to evident, at mid-stem the leaves 2-15 mm wide [2]
1. Leaves toothed, lateral veins distinct, at mid-stem the leaves 13-40 mm wide [3]
2. Leaves toothed, lateral veins slightly distinct, at mid-stem the leaves 9-15 mm wide ... V. *×concinna*
2. Leaves entire or very faintly toothed, lateral veins obscure, at mid-stem the leaves 2-9 mm wide [3]
3. Leaves narrowly lanceolate to linear, mostly 10-50 times longer than wide, upper surface typically scabrelous ... V. *angustifolia*
3. Leaves narrowly elliptic to linear-elliptic, mostly 8-18 times longer than wide, the upper surface smooth or nearly so ... V. *blodgettii*
4. Middle and inner phyllaries filiform to linear-lanceolate ... V. *noveboracensis*
4. Middle and inner phyllaries ovate to oblong-lanceolate [5]
5. Leaf lower surface usually scabrelous (with appressed, awl-shaped hairs), sometimes glabrescent, not or sparsely resin-gland-dotted; heads with 9-25(30) flowers ... V. *gigantea*
5. Leaf lower surface usually puberulous to tomentose or pannose (with erect or curled hairs), seldom glabrescent, conspicuously resin-gland-dotted; heads with 30-60 flowers ... V. *missurica*

***Vernonia angustifolia*** Michx.— {AFP}

***Vernonia blodgettii*** Small— {AFP}

***Vernonia ×concinna*** Gleason— {AFP} Endemic.

***Vernonia gigantea*** (Walter)Trel. ex Branner & Coville— {AFP}

***Vernonia missurica*** Raf.— {AFP}

***Vernonia noveboracensis*** (L.)Michx.— {AFP}

## Xanthium {AFP}

\****Xanthium strumarium*** L.— {AFP}

## Youngia {AFP}

\****Youngia japonica*** (L.)DC.— {AFP}

## Zinnia {AFP}

1. Involucre hemispheric; paleae with a strongly differentiated, fimbriate apex; pappus awnless; cypselae cartilaginous-winged ... Z. *elegans*

1. Involucre subcylindric to campanulate; paleae with a weakly differentiated, erose to subentire apex; pappus of disk flowers with a prominent awn; cypselae wingless ... Z. *peruviana*

^ ***Zinnia elegans*** Jacq.— {AFP}

^ ***Zinnia peruviana*** (L.)L.— {AFP}

## Appendix A. Very Brief Botanical History of Florida.

Knowledge of the Florida flora began in the Florida panhandle as early as 15,000 years ago, when humans occupied the Aucilla River region (Halligan et al. 2016; Faught & Pevny 2019) and the Florida land mass was significantly larger, with sea levels ~80 m lower than present. Pollen of *Corylus* and *Picea* were present (Watts et al. 1992; Carr 2012). Shortly after humans arrived, numerous large animals went extinct or were extirpated (e.g. American lion, armadillo, bison, camelids, caracara, dire wolf, ground sloth, horse, jaguar, mammoth, mastodon, peccary, saber-toothed tiger, spectacled bear, tapir; Webb 1974). Sea level rose rapidly, reaching ca. -10 m about 7,000 years ago. Around this time or shortly thereafter, shell mound architecture began to take place (Marquardt 2010; Saunders & Russo 2011). Humans reached the Florida Keys by 2,500 years ago (LeFebvre et al. 2022).

In the early 1500s, several hundred thousand peoples probably inhabited Florida (Milanich 2017). In 1513 (3 April–24 June, 3 July–17 July), a fleet of three ships led by Ponce de Leon (including peoples from Spain, Africa, and the Caribbean) marked the first unequivocal visitation of peoples from across the Atlantic Ocean and Florida Straits to reach Florida, whereupon they encountered and skirmished with indigenous peoples, a few of which were taken aboard (Williams, Jr. 1949; Murga Sanz 1959: 105; Feder 1994; Fuson 2000; Seidemann 2001; Peck 2003; Turner 2013). By the late 1700s, indigenous Florida cultures were largely dissipated by exploitation, persecution, disease, and removal (Friedson 1994; Worth 2003; Wasserman 2010; Weatherford 2015; Broadwell & Dubcovsky 2023; Bassi 2024) (the American lineage of domestic dogs also disappeared, Zimmer 2007; Leathlobhair et al. 2018). Herbarium studies initiated in the 1760s during British occupation (Franck 2018; excluding the Plukenet folios probably collected outside of present-day Florida; Dandy 1958). In the late 1700s, the Bartrams both conducted fieldwork in Florida and described new species via Latin binomial nomenclature (and shortly thereafter Andre Michaux did the same).

Continued immigrations of others took place, including peoples from Africa, the Americas, and Europe, and Spain ceded Florida to the USA in 1821 (Neyland 1965; Ellsworth & Dysart 1981; Sturtevant & Cattelino in Fogelson & Sturtevant 2004). From 1835–1899, Alvan W. Chapman was a physician in the panhandle, and botanized as far as the Florida Keys, publishing a flora of the southeastern USA (Chapman 1860, 1883, 1897) (Trelease 1899).

In 1850, Florida's human population was ~85,000, almost half of whom were enslaved, and ~95% of the total was north of present-day Orlando. From the 1880s–1930s, railroads, steamboats, and highways allowed the population to reach nearly 1.5 million in 1930, spread throughout the state (Drapeau 1994). Populations of numerous animal taxa were severely diminished, eventually becoming extinct or extirpated (Caribbean monk seal, Carolina parakeet, flamingo, Chadwick beach mouse, Goff's pocket gopher, ivory-billed woodpecker, passenger pigeon, red wolf, whooping crane). In 1903, Pelican Island National Wildlife Refuge was established and, in 1908, the Ocala National Forest was established. John K. Small produced three versions of a flora for the southeastern USA, including all of Florida (Small 1903, 1913, 1933). Around the early to mid-1900s, virgin timber became depauperate and numerous long canals had been excavated in south Florida. By the 1970s, several plant species had been extirpated and feral hogs were abundant (Hanson & Karstad 1959). As the human population grew (nearly 13 million in 1990, over 22 million currently), the introduction of species accelerated, e.g. arthropods (Frank & Thomas 2004), birds (Pranty & Ponzio 2017), amphibians, and reptiles (Krysko et al. 2011). Presently, conservation land, private timber, and agriculture each comprise roughly 25% of Florida, with the remaining being developed or open water (Franck & Farid 2020).

Regional floras were completed for south Florida (Long & Lakela 1971), central Florida (Wunderlin 1982), and the panhandle (Clewell 1985). A state-wide guide was deployed online in 1995 (Wunderlin et al. 1995), as a CD-ROM (Wunderlin et al. 1996), and book (Wunderlin 1998).

## Appendix B. Taxonomic Perspectives.

[Lloyd 1907](#): "new species-making. There is no one but that has more or less of a touch of the fever. We are all more or less affected with the disease, not excepting the writer."

[Payson 1920](#): "The practice of grouping a mass of distinguishable and distinct things under a single name deserves no sympathy; but, on the other hand, the habit of giving a specific name to every slight variation is equally bad."

[Gentry 1989](#): "Are species real objective evolutionary entities? (Our job being to find out what they are.) Or are they essentially artificial constructs whose delimitation more or less depends on taxonomic convenience and preference? In the latter case, there is no 'solution' to the taxonomists' dilemma. Certainly, many people working in the temperate zone, where rampant autogamy means that every clone of *Taraxacum* is essentially a different microspecies, tend to feel that this is the case. However, many of us working in the Neotropics feel that species are mostly far better defined and are, for the most part, quite objective entities. Indeed, as I see it, if species are not in some sense real units whose nature and limits we are trying to discover via scientific thought processes, taxonomy would hardly be worth doing, and we should turn our efforts to some other field of endeavor, say, population genetics, where the scientific method does provide insight into the real world."

[Wheeler 2004](#): "Revisionary taxonomy is frequently dismissed as merely descriptive, which belies its strong intellectual content and hypothesis-driven nature."

[Wheeler 2013](#): "The need for serious descriptive taxonomy is undiminished. It is through careful, thorough, competent descriptive taxonomy that the most fascinating details of evolutionary history are revealed and the billions of ways in which organisms are adapted for survival are opened to exploitation in our quest for sustainable ways to meet human needs. That the backlog of undescribed species, perhaps numbering 10 million for eukaryotes alone, is confronted, homologies interpreted, classifications made predictive, and names kept informative matters a great deal in the face of a biodiversity crisis."

Taxa are real things that we observe and attempt to categorize ([Sharp 1871](#); [Wilkins in Joyce 2017](#)), as a means of communication. The current approach seeks moderation and practicality, to avoid heterogeneously lumping and avoid infinitesimally split microspecies. Perhaps, the most notorious example of lumping in vascular plants is that of the pantropical *Allophylus*, where [Leenhouts \(1967\)](#) cogitating over 200 binomials wrote "the only species accepted by me: *Allophylus cobbe* [...] This implies that I consider all [other] names [...] as synonyms." Extreme examples of splitting include *Crataegus*, *Ophrys*, *Rubus*, and *Taraxacum*, where species become 'microspecies'. Basic taxonomic concepts strived for here in this flora are given below.

Species: almost always readily morphologically diagnosable (morphologically cryptic species being extremely rare), rare to no admixture (at least in recent history, preceding the Anthropocene), hybrids with other species none or extremely rarely forming self-perpetuating and spreading populations, deeper genomic analyses (e.g. RADseq, probe sets, genome skimming, whole genome) revealing strongly supported clades of sister species or monophyletic species derived within another paraphyletic species and lack of admixture, morphological variation may exhibit localized patterns that can be recognized as infraspecific taxa.

Subspecies: weakly morphologically distinct (morphologically cryptic or subcryptic subspecies relatively frequent), usually in close geographic proximity, intermediate populations often present but infrequent, admixture frequent to rare, deeper genomic analyses may reveal strongly to weakly supported bifurcating clades along with signals of admixture (e.g. STRUCTURE, Neighbor-net). In many instances, it is reasonable to use subspecies or varieties, but occasionally the category is neglected since trinomials are mnemonically complex and the

species rank can be more appealing. Putative microspecies are probably best placed here or below.

Variety: very weakly morphologically distinct, in close geographic proximity with regular admixture such that intermediate populations are widely persistent or were persistent in recent history.

Form: an oft ignored category that generally names phenotypes that may independently arise in multiple populations.

## About

The task of rewriting and compiling identification keys commenced around fall 2015, and, in February 2020, keys began to be posted on the *Atlas of Florida Plants* (through the assistance of Keith Bornhorst). Groups were intermitently worked on or updated since then. Of course, all are subject to continual updates. Invaluable to this work was access to herbaria (digitized and physical specimens), libraries (digitized and physical literature), iNaturalist, and nature itself. Further appreciation is owed to land stewards, field assistants, collectors, researchers, authors, and the staff of herbaria, libraries, and various other groups and institutions. Special thanks to Dick, Bruce, Brett, Jenn, Jimmy, Jimi, Roger, Anne, Lucas, Marc, Ron, John, Arian, Rose, Peter, Alex, Erick, Bobby, Scott, Andreas, Patrick, Ann, Keron, Philip, William, Teodoro, Theogene, Aline, Haydn, Carmel, Colleen, Sean, Jasmina, Randy, Ralph, George, Jean, Sally, Sherri, Bob, Stephen, Kenneth, Albert, Lydia, Tiffany, Etienne, Gloria, Javier, Suzanne, Fred, et al. Especial thanks to Andy, Mandy, Drew, Audrey, Peg, Tom, Doug, Annie, Ljutic, Maurice, Annette, Kait, Mac, Fern, Etta, Poppers, Andy, Jeff, Joe, Julieta, Wolfie, Rodney, Ryan, Ariel, Aidan, Austin, Stella, Aidric, Wolf, Alex, Rene, Paul, Kris, Dave, Russ, Dave, Devin, Felicia, Tom, Brian, Pam, Jackie, Bart, Jessica, Derrick, grandpa, grandma, aunts, uncles, cousins, Bill, Harry, Elliott, Hamilton, et al.

