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Identification Manual for Wetland Plant Species of Florida

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COASTAL ZONE INFORMATION CENTER

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Identification Manual for Wetland Plant Species of Florida

Used by
The Florida Department of Environmental Regulation
in
Determining the Landward Extent of Waters of the State

**Robert L. Dressler, David W. Hall,
Kent D. Perkins, and Norris H. Williams**

Vascular Plant Herbarium
Florida State Museum
and
Institute of Food and Agricultural Sciences
University of Florida

COASTAL ZONE
INFORMATION CENTER

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INTRODUCTION

On July 1, 1984, the Warren S. Henderson Wetlands Act went into effect. A portion of this act amended the list of wetland plant species that the Florida Department of Environmental Regulation uses to determine the landward extent of Waters of the State under Chapter 403, Florida Statutes. The Department incorporated the revised list of species and methods for using these species into Florida Administrative Code Rule 17-4.022. This field guide was developed to facilitate the identification of these wetland indicator species.

The authoritative manuals for taxonomy and nomenclature are given below. Godfrey and Wooten, and Lakela and Long are authorities specified by legislation; no authorities are given in the legislation for mosses, algae or conifers.

Breen, R. S. 1963. Mosses of Florida, an illustrated manual. Univ. Florida Press, Gainesville.

Godfrey, R. K., and J. W. Wooten. 1979. Aquatic and Wetland Plants of Southeastern United States: Monocotyledons. Univ. Georgia Press, Athens.

Godfrey, R. K., and J. W. Wooten. 1981. Aquatic and Wetland Plants of Southeastern United States: Dicotyledons. Univ. Georgia Press, Athens.

Kurz, H., and R. K. Godfrey. 1962. Trees of Northern Florida. Univ. Florida Press, Gainesville (for conifers).

Lakela, O., and R. W. Long. 1976. Ferns of Florida. Banyan Books, Miami.

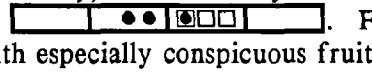
The nomenclature used for flowering plants follows Godfrey and Wooten. In some cases, other names or synonyms are mentioned for the same kind of plant, and in a few cases the names used by Godfrey and Wooten are now considered incorrect. Thus, when we cite "*Scirpus americanus* (= *S. pungens*)," the botanically correct name is *Scirpus pungens*. We must cite also "*Scirpus olneyi* (= *S. americanus*)", since the plant originally described as *Scirpus americanus* is the one we have known as *S. olneyi* until recently. A few of the names were misspelled in the legislation; these misspellings are indicated in parentheses.

Within each section the plants are arranged alphabetically by family and by genus within each family. The family to which each plant belongs appears at the right, and one or more common names appear on the second line. The common name used in the legislation is given first, with minor corrections. One must realize, of course, that some plants do not have a common name, while others have far too many. A list of the family names used in the book is given on pages ix-xi.

A brief description is provided for each plant treated. Layman's terms have been used where feasible. Some features, such as leaf shape, are difficult to describe in layman's terms, and the botanical terms used in this book are defined in the glossary. One area in which botanical terminology is especially unwieldy is the description of "gender" in flowers. When the flowers of a given plant have only "male" (staminate) or "female" (pistillate) elements, the flowers are referred to as "unisexual." When any individual plant will have only male flowers or female flowers, "M/F" is used. When genera or groups of species are treated, the species known in Florida are listed, or if more than six species are included, the total number is given. Key features that will help the reader recognize the plant in question have been provided under the heading of **Recognition**.

This book includes three categories of plants, as specified by the Legislature: "submerged species," "transitional species" and "excepted species." Upland species ("U") are included only to help distinguish them from close relatives that are "submerged" or "transitional". Species in the "submerged" category are identified by "S." Species in the "transitional" category are identified by "T." Species not categorized as submerged, transitional or upland are identified as "I" and are not considered when determining dominance in an area. When a single asterisk (*) follows a "T," that species is considered submerged when strata are combined. When a double asterisk (**) follows a "T," that species is considered as "upland" except when strata are combined; then it is considered "transitional." Finally, some species that are not part of the wetlands legislation are listed for the Department of Natural Resources. These are indicated by "DNR."

For discussion of Distribution, the state is divided into four major areas (see accompanying map on page viii) as in Bell and Taylor, Florida Wildflowers. The term "northwest" is used for the panhandle area, and "north peninsular" is used for north Florida east of the Aucilla River. An unqualified "north" is used to refer to both of these areas. Similarly, "peninsular" is used to refer to all of Florida except the panhandle. The simplified maps that accompany each description indicate only the presence of a given plant in at least one county of the sector marked, but more details are provided where appropriate. Distribution is based on material in the University of Florida Herbarium and published records.

Where feasible, flowering season has been indicated for the monocotyledons and dicotyledons, using a twelve-month calendar divided into three-month sections. A hypothetical case in which the plant flowers in May, June and July and fruits in July, August and September would appear as  . Fruiting season has been given only for some plants with especially conspicuous fruits, such as hickories, hollies and oaks. In the case of grasses and sedges no attempt has been made to distinguish between fruiting and flowering seasons. In fact, it is far easier to identify these plants after seeds have developed, but their appearance remains much the same. Information on flowering and fruiting season is based largely on material in the University of Florida Herbarium, supplemented by information from published works and field experience. It must be emphasized, though, that our information may be incomplete and that flowering season varies a great deal in Florida, from year to year, from place to place, and even from plant to plant in a given area. Thus, the reader should expect some exceptions to the flowering seasons given. When flowering throughout the year is indicated, one should remember that this happens more frequently in southern Florida than in the northern areas. In more northern counties, such plants are likely to flower in December, January or February only in exceptionally mild winters.

Acknowledgements - A number of people have assisted in the preparation of this handbook. We are grateful to Sydney T. Brinson[1] and Maureen Powers MacLaughlin, Florida Department of Environmental Regulation[2], for their help throughout the development of the book and for reviewing the manuscript at several stages. Sarah McLeod Knox, IFAS Editorial Department, has provided guidance throughout the planning of the book. We are especially grateful to

[1] Current address: St. Johns River Water Management District, 618 E. South Street, Suite 200, Orlando, FL 32801.

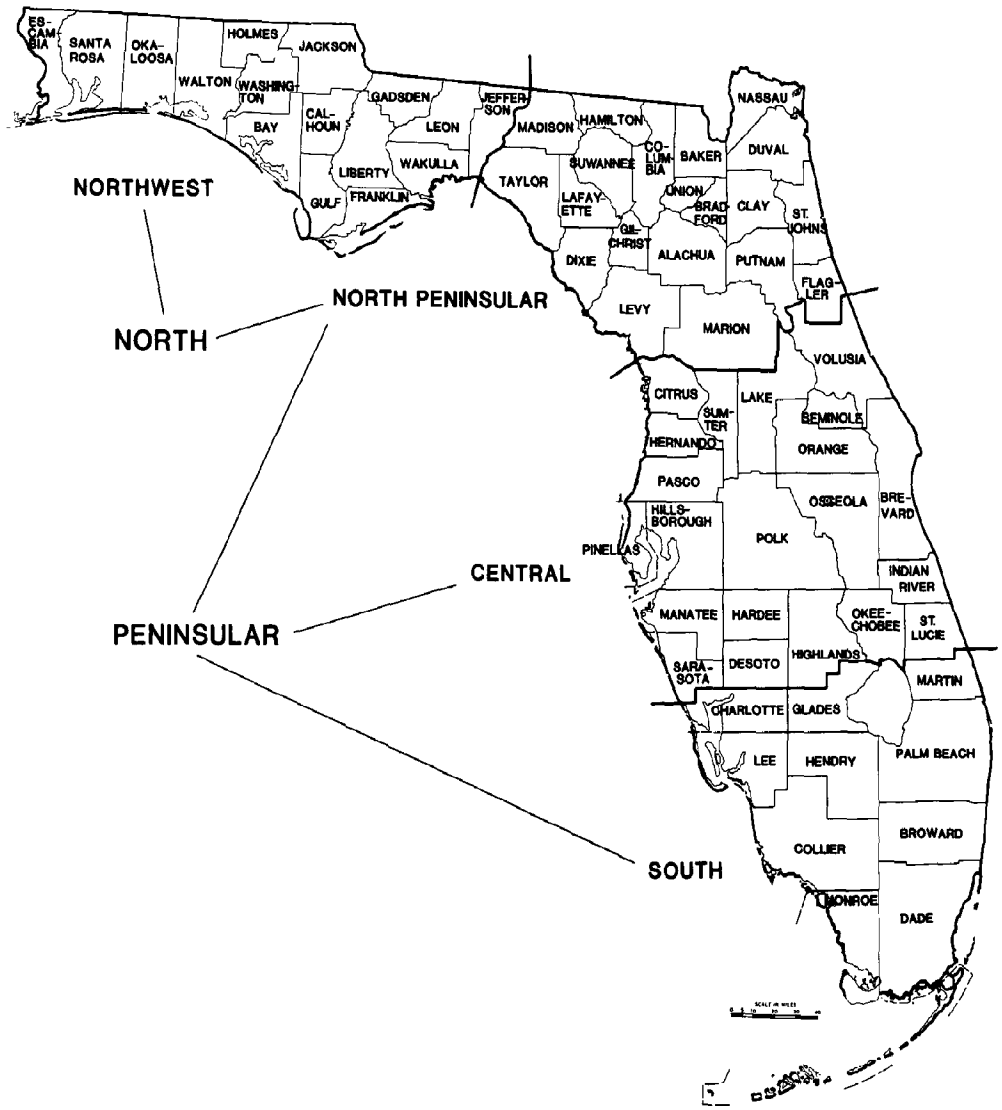
[2] 2600 Blair Stone Road, Tallahassee, FL 32399-2400.

Angus Gholson, always ready to help find necessary material, to Dr. Robert K. Godfrey, for much needed advice, to Dr. Dana Griffin, for assistance with the cryptogams, and to Dr. Rob Kalmbacher, for help in finding material of *Schizachyrium*. The line drawings in the glossary and the small distribution maps were prepared by Byron Walsh; all other drawings were prepared by Wendy B. Zomlefer, and the drawings of *Juncus*, *Spirodela* and *Wolffia* are used with permission from Common Florida Angiosperm Families, Parts I and II, by Wendy B. Zomlefer. Jess Van Dyke and Andrew J. Leslie very kindly let us photograph material in their research greenhouse. Most of the photographs were taken by Kerry Ann Dressler, who cheerfully suffered mud, thorns, mosquito bites and long hours on the road. She also provided Cibachrome prints of all the transparencies and her assistance with layout and final preparation of this manual was invaluable. The following photographs were supplied by others, as indicated:

Mike Bodle: *Spartina bakeri*, inflorescence
James Eggert: *Rhapidophyllum hystrix*, habit
Joseph Joyce: *Mimosa pigra*
Walter Judd: *Acer negundo*, foliage and fruits; *Acer saccharinum*, flowers; *Annona glabra*, fruit; *Cyrilla racemiflora*, fruit; *Litsea aestivalis*, flowers
Helen Leitman: *Nyssa aquatica*, base; *Nyssa ogeche*, base
Maureen Powers MacLaughlin: *Dichromena* sp., close-up; *Hymenocallis* sp., close-up; *Ruppia maritima*, habitat
Jess Van Dyke: *Ipomoea aquatica*, habit
Department of Environmental Regulation: *Crinum americanum*, close-up
Department of Natural Resources: *Azolla caroliniana*, habitat

Front cover photo by Kerry Ann Dressler: view of Manatee Springs State Park.

Back cover photo by Kent D. Perkins: view of pond at Paynes Prairie State Preserve.



Map showing regions of the state as defined for purposes of this book.

List of Plant Families Represented in this Book

Algae and Mosses (Non-vascular plants)

Amblystegiaceae	Flood-zone Moss Family
Characeae	Stonewort Family
(Division Cyanobacteria)	Blue-green Algae
Fontinalaceae	Spring Moss Family
Sphagnaceae	Sphagnum Family

Ferns (Pteridophytes)

Aspidiaceae	Shield Fern Family
Blechnaceae	Blechnum Family
Osmundaceae	Royal Fern Family
Parkeriaceae	Water Horn Fern Family
Pteridaceae	Bracken Family
Salviniaceae	Water Fern Family
Schizaeaceae	Curly-grass Family

Conifers (Gymnosperms)

Cupressaceae	Cedar or Cypress Family
Pinaceae	Pine Family
Taxodiaceae	Bald-cypress Family

Monocotyledons

Alismataceae	Water-plantain Family
Amaryllidaceae	Amaryllis Family
Araceae	Arum Family
Cannaceae	Canna Family
Cymodoceaceae	Manatee-grass Family
Cyperaceae	Sedge Family
Eriocaulaceae	Pipewort Family
Gramineae	Grass Family
Haemodoraceae	Bloodwort Family
Hydrocharitaceae	Frog's Bit Family
Iridaceae	Iris Family
Juncaceae	Rush Family
Lemnaceae	Duckweed Family
Liliaceae	Lily Family
Marantaceae	Arrowroot Family
Najadaceae	Water-nymph Family
Orchidaceae	Orchid Family
Palmae	Palm Family
Pontederiaceae	Pickerelweed Family
Potamogetonaceae	Pondweed Family
Ruppiaceae	Ditch-grass Family
Sparganiaceae	Bur-reed Family
Typhaceae	Cat-tail Family
Xyridaceae	Yellow-eyed-grass Family

Dicotyledons

Acanthaceae	Acanthus Family
Aceraceae	Maple Family
Aizoaceae	Carpet-weed Family
Amaranthaceae	Amaranth Family
Anacardiaceae	Sumac Family
Annonaceae	Custard-apple Family
Aquifoliaceae	Holly Family
Avicenniaceae	Black Mangrove Family
Bataceae	Saltwort Family
Betulaceae	Birch Family
Cabombaceae	Water-shield Family
Campanulaceae	Bellflower Family
Caprifoliaceae	Honeysuckle Family
Ceratophyllaceae	Hornwort Family
Chenopodiaceae	Goosefoot Family
Chrysobalanaceae	Cocoplum Family
Clethraceae	White-alder Family
Combretaceae	White Mangrove Family
Compositae	Sunflower Family
Convolvulaceae	Morning-glory Family
Cornaceae	Dogwood Family
Cruciferae	Mustard Family
Cyrillaceae	Cyrilla Family
Ericaceae	Heath Family
Fagaceae	Oak Family
Gentianaceae	Gentian Family
Guttiferae	St. John's-wort Family
Haloragaceae	Water-milfoil Family
Hamamelidaceae	Witch-hazel Family
Hydrophyllaceae	Waterleaf Family
Illiciaceae	Anise-tree Family
Juglandaceae	Walnut Family
Labiatae	Mint Family
Lauraceae	Laurel Family
Leguminosae	Bean Family
Lentibulariaceae	Bladderwort Family
Lythraceae	Loosestrife Family
Magnoliaceae	Magnolia Family
Malvaceae	Mallow Family
Melastomataceae	Melastome Family
Menyanthaceae	Bogbean Family
Myricaceae	Wax-myrtle Family
Myrtaceae	Myrtle Family
Nelumbonaceae	Lotus Family
Nymphaeaceae	Water-lily Family
Nyssaceae	Sour Gum Family
Oleaceae	Olive Family
Onagraceae	Evening-primrose Family
Platanaceae	Plane-tree Family
Plumbaginaceae	Leadwort Family

Polygalaceae	Milkwort Family
Polygonaceae	Smartweed Family
Primulaceae	Primrose Family
Rhizophoraceae	Red Mangrove Family
Rosaceae	Rose Family
Rubiaceae	Madder Family
Salicaceae	Willow Family
Sarraceniaceae	Pitcher-plant Family
Saururaceae	Lizard's-tail Family
Saxifragaceae	Saxifrage Family
Scrophulariaceae	Figwort Family
Styracaceae	Storax Family
Symplocaceae	Sweetleaf Family
Theaceae	Camellia Family
Ulmaceae	Elm Family
Umbelliferae	Carrot Family
Urticaceae	Nettle Family
Vitaceae	Grape Family

Section 1

Algae and Mosses (Non-vascular Plants)

A. without water transporting tissue.

B. reproducing by one-celled spores.

C. having appendages one cell thick.

***Leptodictyum* spp. (misspelled as "*Leptodictyon*")** **Amblystegiaceae**
Water Mosses

Mosses, aquatic or in wet places, stems irregularly branched, branches and leaves more or less flattened; leaves: spreading, ovate-lanceolate, tip narrowly pointed, midvein reaching mid-leaf, but not tip; reproducing by spores produced in tiny, inconspicuous capsules.

3 species: *L. riparium*, *L. trichopodium*, *L. sipho*.

Recognition: an aquatic moss with short midveins to about mid-leaf; leaves ⅛-¼ in. long.

Habitat: S - in water, floating or attached to stones or wood.

Distribution: throughout Florida.

***Chara* spp.** **Characeae**
Musk-grasses

Algae, but superficially resembling seed plants or diminutive horsetails (*Equisetum*); no part more than 3 cells thick; branched, with shorter branchlets arranged in whorls at intervals, branchlets not forked; stems usually ridged, with rough surface, outer layer of cells often lime-encrusted; sporangia dark, ovoid, borne in seedlike fashion on branchlets, each sporangium surrounded by spiral cells and with a cap of 5 cells.

Six species: *C. braunii*, *C. fibrosa*, *C. globularis*, *C. hornemannii*, *C. zeylanica*, *C. vulgaris*.

Recognition: submersed plant, relatively rough to the touch, does not have either hard spines or divided leaves; the plants have a characteristic, musky odor.

Habitat: S - alkaline or hard water, lakes, ponds, ditches.

Distribution: throughout Florida.

***Nitella* spp.** **Characeae**
Stoneworts

Algae, but structurally complex and superficially resembling flowering plants; stems only 1 cell thick, branched with short branchlets in whorls at intervals; branchlets may be redivided; stems smooth, without calcium deposits; sporangia dark, rounded, borne in seedlike fashion, each sporangium surrounded by spiral cells and with a cap of 10 cells in 2 layers.

About 9 species.

Recognition: *Nitella* resembles *Chara*, but is much more delicate and is not rough to the touch.

Habitat: S - ponds, streams and pools, especially on silty bottoms.

Distribution: north and central Florida.

Blue-green Algal Mats **Division Cyanobacteria**

Microscopic **algae** that often form mats; the cells are embedded in gelatinous material, and may be either scattered or arranged in rows; the color may be green, bluish green, brownish green or reddish green.

Recognition: gelatinous greenish mats floating in still water or growing in wet areas.

Habitat: S - in still waters and in very wet areas.

Distribution: throughout Florida.

***Brachelyma* spp. (misspelled as "*Brachylema*")** **Fontinalaceae**
Water Mosses

Mosses, submersed or floating, to 6 in. long, stem 3-angled, branched; leaves: 3-ranked, with midvein reaching leaf tip or nearly so, oblong-lanceolate, folded along midvein, tip pointed to blunt, more or less toothed; sexual reproduction by spores, but sporangia not seen in Florida material.

Two species: *B. subulatum*, *B. robustum*.

Recognition: aquatic mosses with well developed midvein reaching near leaf tip; leaves 1/8-3/16 in. long.

Habitat: S - ponds and streams, at or below high water mark on trees and pilings.

Distribution: northwest Florida.

***Fontinalis* spp.** **Fontinalaceae**
Water Mosses

Mosses, aquatic, floating, submersed, or exposed when water is low; attached at stem bases only; stem up to 6 in. long, branched; **leaves**: 3-ranked, without midveins, flat or keeled and folded, tips pointed to blunt, or toothed; sexual reproduction by spores, but sporangia not seen in Florida material.

Four species: *F. novae-angliae*, *F. disticha*, *F. filiformis*, *F. flaccida.*

Recognition: aquatic mosses without midveins in the leaves; leaves 3/16-5/16 in. long.

Habitat: S - in flowing water, attached to stones or trees.

Distribution: north and central Florida south to Highlands County.

***Sphagnum* spp.** **Sphagnaceae**
Sphagnum Mosses

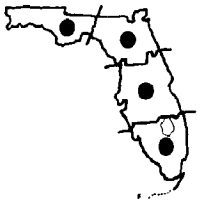
Mosses, plants to 12 in. long, with erect or floating stems that continue growing, and clusters of spreading branchlets of limited growth; **leaves**: 1 cell thick, without midveins, in several spiral ranks on branchlets; plant composed of a network of slender green cells surrounded by larger, clear, water-holding cells with holes in cell walls; sexual reproduction by spores produced in tiny, inconspicuous capsules.

Seventeen species.

Recognition: very distinctive in form and texture; often pale or yellowish green; soft and spongy; usually forming dense mats. *Sphagnum* has remarkable water-holding capacity. Squeezing a handful of wet *Sphagnum* yields nearly a handful of water.

Habitat: S - relatively few species grow in water, but all are limited to moist habitats.

Distribution: throughout Florida, but more frequent in north and central Florida.



Section 2

Ferns (Pteridophytes)

A. with water transporting tissues.

B. reproducing by one-celled spores.

C. with distinct roots, stems and leaves.

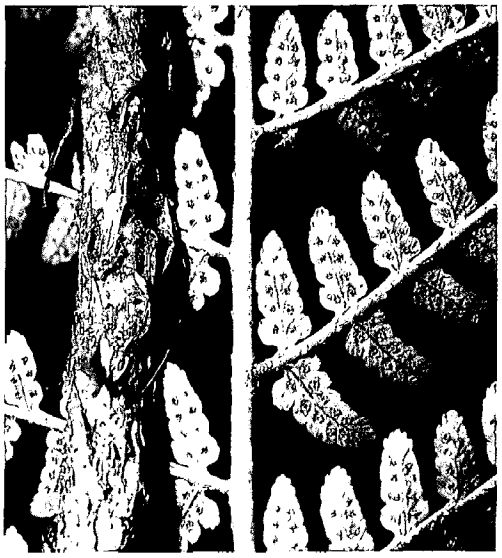
Dryopteris ludoviciana **Aspidiaceae**
Southern Shield Fern, Florida Shield Fern

Rhizome stout, horizontal or ascending; **leaves**: pinnate, to 5 ft. tall, 8 in. wide; usually smaller; leaflets pinnately lobed, widest at the base; sporangia round, 1-7 on a leaflet lobe.

Recognition: a fern with the sporangia clustered in circular spots, these covered by a centrally attached flap; the bases of the leaf stalks bear many flat, brownish scales.

Habitat: T - swamps and other low wet areas.

Distribution: peninsular Florida and west to Gadsden County.



***Thelypteris* spp.** **Aspidiaceae**
Shield Ferns

Rhizome slender and creeping; **leaves**: clustered or scattered, either pinnate with the leaflets pinnately lobed, or bipinnate; sporangia in many dots between midvein and leaflet margin; these usually bear kidney-shaped flaps that may be hairy.

Eighteen species.

Recognition: leaves all similar, hairy at least on stalks; leaf blades tapering at tips; stiff hairs on upper surface of leaflets near midvein, but these not easily seen, often with stiff hairs underneath.

Habitat: T - along streams, moist or wet forests, cypress swamps, roadside ditches.

Distribution: throughout Florida.

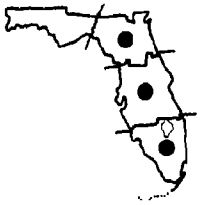
Blechnum serrulatum **Blechnaceae**
Swamp Fern

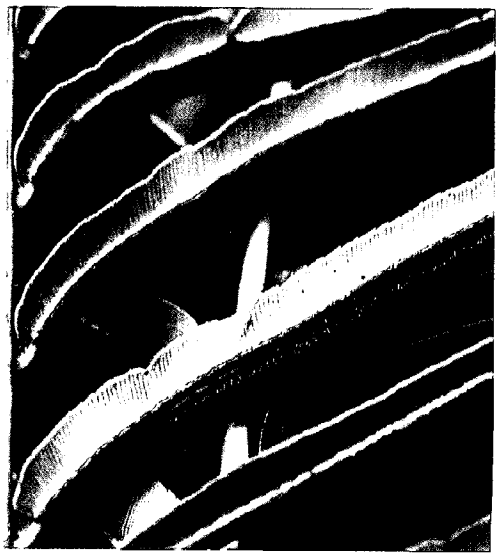
Rhizome ascending to erect, blackish, winding and branching; **leaves**: clustered, simply pinnate, to 3 ft. tall, leaflets narrowly oblong, with parallel sides, 1¼-6 in. long, about ⅝ in. wide, saw-toothed, blunt or pointed; sporangia clustered, forming bands on each side of the midvein.

Recognition: pinnately compound leaves; straplike leaflets with prominent, parallel lateral veins and distinctly saw-toothed margins; sporangia clustered in 2 rows paralleling the midvein, each cluster partially covered by an elongate flap attached on the outer side (away from the midvein).

Habitat: **T*** - open forests and hammocks.

Distribution: peninsular Florida.





***Woodwardia* spp.** **Blechnaceae**
Chain Fern

Rhizome stout, creeping; **leaves**: pinnately compound or lobed, with chainlike pattern of major veins along midveins of lobes; sporangia borne on a separate dark greenish-brown leaf, or leaves pinnately compound with the leaflets pinnately divided and the sporangia borne on vegetative leaves; sporangia in elongate clusters, alternating on each side of midvein.

Three species: *W. areolata*, *W. radicans* (not native), *W. virginica*; common in Florida are *W. areolata*, with sporangia on separate leaves with very narrow leaflets, and *W. virginica*, with sporangia on foliage leaves, all leaflets of about the same width.

Recognition: chainlike pattern of major veins along midvein of lobes; sporangia clusters elongate, in rows parallel with the midvein, each cluster partially covered by a flap attached on the outer side of the cluster.

Habitat: T* - wet forests, marshes, swamps, bogs, near streams.

Distribution: throughout Florida.

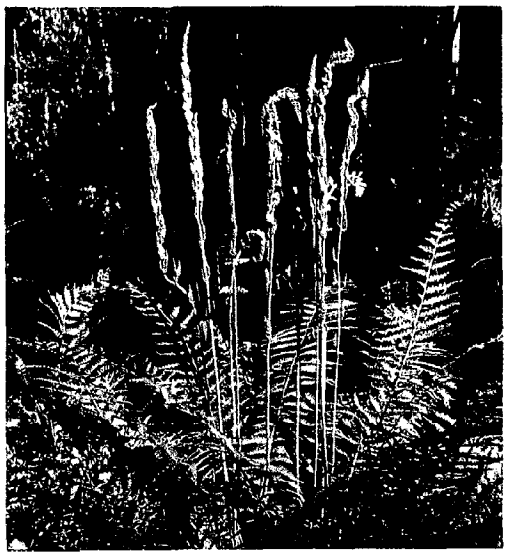
Osmunda cinnamomea Osmundaceae
Cinnamon Fern

Rhizome thick, creeping, roots black, fibrous, forming a thick mass; leaves: to 5 ft. tall, erect, clustered, woolly with cinnamon brown hairs, especially when young; pinnately compound, leaflets tapering, pinnately divided, the notches not quite reaching midvein, the lobes oblong, rounded; sporangia borne on separate, non-green leaves.

Recognition: leaves pinnately compound with the leaflets pinnately divided, with a tuft of orange hair at the upper side of the point of attachment of each leaflet and often near base of leaf stalk; sporangia borne on a separate leaf; the sporangium bears a patch of thick-walled cells on one side, rather than a ring of thick-walled cells surrounding the sporangium, as in most other ferns; root mass large and fibrous with age.

Habitat: **T*** - moist woods, swamps, shores of lakes, streams and ponds.

Distribution: north and central Florida and northern south Florida.



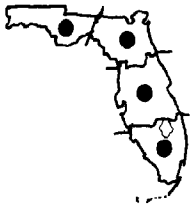
Osmunda regalis **Osmundaceae**
Royal Fern

Rhizome thick, creeping, roots black, fibrous, forming a thick mass or cushion up to 2 ft. thick; **leaves**: 2½-5 ft. tall, bipinnate, the leaflets to 2 in. long, oblong or lance-oblong, short-stalked, the bases rounded or slightly notched, margins very finely toothed; sporangia borne on the upper parts of the vegetative leaves.

Recognition: bipinnately compound leaves with oblong, stalked leaflets; sporangia on upper part of leaf; the sporangium bears a patch of thick-walled cells on one side, rather than a ring of thick-walled cells surrounding the sporangium, as in most other ferns; root mass large and fibrous with age.

Habitat: S - moist woods, swamps, shores of lakes, streams and ponds.

Distribution: throughout Florida.



***Ceratopteris* spp.** **Parkeriaceae**
Floating Ferns, Water Horn Ferns

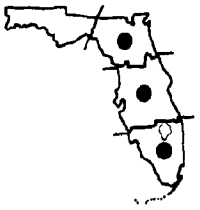
Rhizome short, rooted or floating; **leaves**: highly variable, vegetative leaves 3-lobed to 4-pinnately lobed; reproductive leaves similar but with very narrow leaflets, bearing rows of sporangia, produces plantlets from margins.

Two species: *C. pteridoides* with wide leaf stalk tapering to the base and rounded leaflets; and *C. thalictroides* with narrower leaf stalk with parallel sides, and pointed leaflets.

Recognition: floating or rooting in mud, a fern with thin, irregularly lobed leaves; the spore-bearing leaves erect, with very narrow leaflets, scarcely wider than thick, with their margins inrolled.

Habitat: S - still and sluggish water, lakes, streams, canals.

Distribution: peninsular Florida from St. John's County south.



***Acrostichum* spp. (misspelled as "*Acrosticum*")** **Pteridaceae**
Leather Ferns

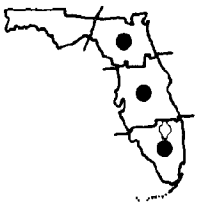
Colonial **fern**, with stout, woody rhizomes; **leaves**: erect, leathery, pinnately divided, to 12 ft. tall; leaflets short-stalked, to 12 in. long, oblong or lanceolate-oblong; fertile leaflets borne on upper part of leaf or whole leaf fertile, covered beneath by dark brown sporangia (not in discrete clusters).

Two species: *A. aureum*, sporangia, when present, only on upper leaflets, leaflets that lack sporangia are oblong, not overlapping; *A. danaeifolium*, sporangia, when present, on all or most leaflets, leaflets closely set, overlapping, leaflets that lack sporangia taper.

Recognition: a large fern with simply pinnate, leathery leaves and the upper leaflets covered beneath by sporangia.

Habitat: **S** - freshwater and brackish shores and swamps.

Distribution: peninsular Florida north to St. John's and Dixie Counties.



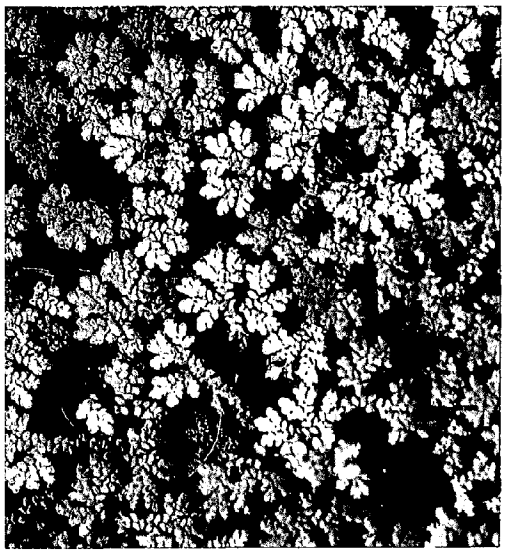
Azolla caroliniana **Salviniaceae**
Mosquito Fern

Free-floating fern, less than ½ in. across, stems branching; **leaves**: tiny, bilobed, in 2 ranks, green or reddish (especially in winter); sporangia small, of 2 sorts, inconspicuous; propagating vegetatively and rapidly forming large, floating mats.

Recognition: a small free-floating fern with many tiny, closely overlapping leaves; red when in sun.

Habitat: **S** - floating in still or sluggish water, streams, lakes, ponds and ditches.

Distribution: throughout Florida.



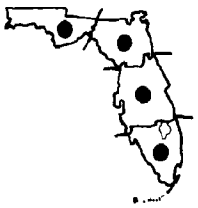
***Salvinia rotundifolia* (= *S. minima*)** **Salviniaceae**
Water Spangles, Water Fern

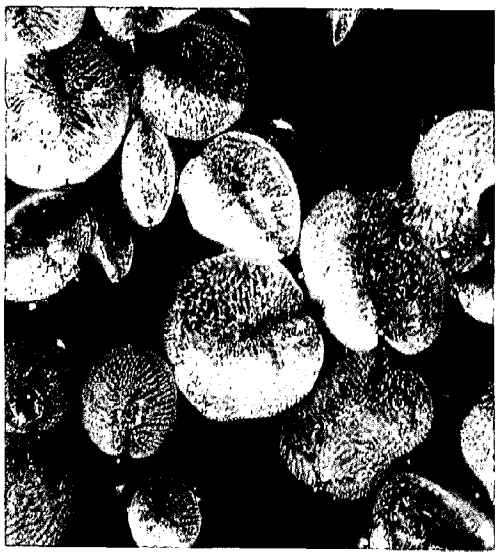
Free-floating fern; **leaves**: appear 2-ranked, spreading, with root clusters arising from the stem beneath; leaves broadly rounded, the bases notched, about ¾ in. across, the upper surface covered with stiff, branched hairs; sporangia of 2 types, borne beneath the stem.

Recognition: small, floating fern with paired, rounded leaves; with stiff, branched hairs above, roots hanging beneath.

Habitat: **S** - floating in still or sluggish water, lakes, ponds, ditches.

Distribution: throughout Florida.





Lygodium japonicum **Schizaeaceae**
Japanese Climbing Fern

Rhizome creeping; **leaves**: to 6 ft. long or more, about 12 in. wide, climbing and continuing growth, the leaflets triangular or ovate, palmately lobed, the margins toothed or lobed; sporangia borne on fingerlike lobes of fertile leaflets.

Recognition: climbing fern, the leaflets in pairs, the fertile and sterile leaves similar.

Habitat: T - moist forests, disturbed floodplain forests, thickets.

Distribution: not native; escaped and naturalized throughout Florida.

Section 3

Conifers (Gymnosperms)

A. woody trees.

B. reproducing by seeds in cones.

***Chamaecyparis* spp.** **Cupressaceae**
White Cedars

Tree to about 80 ft. tall and 3 ft. in diameter, crown narrowly cone-shaped; bark thin, grayish to reddish brown, peeling off in long strips; **leaves**: in opposite pairs, 4-ranked, very small (1/16-1/8 in. long), scalelike, narrowly ovate, sharp-pointed; 2 ranks of leaves are keeled, with the other 2 ranks flattened, so that the twigs are flattened and borne in flat sprays; female cones globular, 1/8-1/4 in. across, each with 6-12 winged seeds; male cones short-cylindrical.

One species: *C. thyoides*.

Recognition: a cedarlike tree, leaves very small, scalelike; twigs forming a flattened fan-shaped spray; bears pea-size spherical cones.

Habitat: **S** - swamps and woods along streams.

Distribution: north Florida.

Pinus glabra **Pinaceae**
Spruce Pine

Tree, twigs smooth, gray and slender; bark ridged and furrowed, forming small, thin, flat plates; **leaves** (needles): 2-4 in. long, in clusters of 2; male cones small, yellow; female cones becoming 2-4 in. long, conic-ovoid before opening, may remain on tree for 3 to 4 years, the cone scales are slightly thickened, and bear slight transverse keels on which a dark central knob bears a small straight or curved spine.

Recognition: needles 2-4 in. long, always in clusters of 2; the twigs are smooth below the needles (not scaly); older bark with small, thin, flat plates (resembling a hardwood bark); cones 2-4 in. long, with minute spines.

Habitat: T - usually mixed with hardwoods in rich hammocks and bottomland woods.

Distribution: north Florida south to Alachua County.

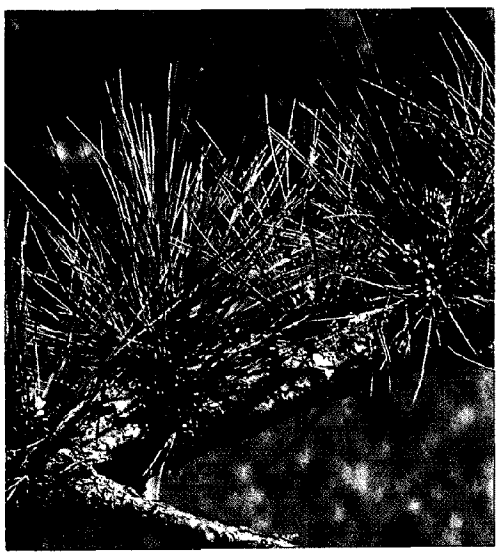
Pinus serotina **Pinaceae**
Pond Pine

Medium-sized **tree**; twigs rough-scaly; bark dark gray or reddish brown, with narrow, irregular, thin, vertical plates; crown branches often irregular or crooked; **leaves** (needles): usually 4-8 in. long, in clusters of 3 or 3 and 4; male cones small, yellow; female cones 2-3 in. long, ovoid, broader at base, remaining on tree for several to many years, becoming embedded in wood; open cones broader and nearly spherical; face of cone scale with a transverse ridge or keel, each scale with a darkened, elongate central knob and a sharp, curved spine.

Recognition: glossy, ovoid cones, 2-3 in. long; needles in 3's or 3's and 4's; needles sprout in tufts along trunk and main branches, especially after fire.

Habitat: T - poorly drained sites with fluctuating water table and subject to frequent fires.

Distribution: north and central Florida south to Osceola County.



***Taxodium* spp.** **Taxodiaceae**
Cypresses

Small to large **trees**, commonly with buttressed bases and with "knees" formed near the base; bark grayish to reddish brown, ridged and furrowed; **leaves**: either scalelike or very narrow and ¼-½ in. long, with the tips pointed; the twigs are deciduous and shed as units in the fall; female cone about 1 in. across, spherical, with several 2- to 3-angled or winged seeds.

Two species: in *T. distichum* (Bald-cypress) the leaves are long, with parallel sides and are borne in a featherlike arrangement, and the knees are pointed, while *T. ascendens* (Pond-cypress) normally has short, scalelike leaves spirally arranged on the branchlets, and rounded knees.

Recognition: tree with soft, short, flat needles; spherical cones; trunk with grayish to reddish brown bark; both species have buttressed trunks; the only conifer with deciduous twigs.

Habitat: S - ponds, wet depressions, pond and lake margins, swamps, floodplains and stream banks.

Distribution: throughout Florida.

Section 4

Monocotyledons

A. flowers with parts in threes.

B. seeds enclosed in fruits.

C. leaves usually with parallel veins.

D. stems with scattered vascular bundles (in cross section).

E. never form true wood.

***Echinodorus* spp.** **Alismataceae**
Burheads

Annual or perennial **herbs**, commonly spreading by runners; leaves: clustered at base, usually erect, with long, thick stalk; blade may be oblanceolate to broadly ovate; inflorescence as long as leaves or longer, with 1 to several clusters of flowers along stalk; **flowers**: with 3 green sepals, 3 white petals, 9-25 stamens and many pistils; **fruit**: a cluster of 1-seeded nutlets, the style persisting as angles or claws on the developing fruit, giving it a burlike appearance.

Three species: *E. cordifolius*, *E. parvulus*, *E. rostratus*.

Recognition: leaves narrow to wide, with a long, thick stalk, wider leaves ovate to nearly arrowhead-shaped, with several strong veins from base to tip; burlike fruits; similar to *Sagittaria*, but with bisexual flowers.

Habitat: S - shallow ponds, pond margins, shores, marshes and ditches.

Distribution: north Florida.

Flowering:

***Sagittaria* spp.** **Alismataceae**
Arrowheads

Perennial **herbs**, sometimes with rhizome or rhizome and potato-like corms, roots branched; **leaves**: clustered, linear and slightly flattened, straplike or stalked with blades elliptical to ovate or broadly arrowhead-shaped; inflorescence stalked, erect or sprawling, with few to many flowers clustered at joints; **flowers**: unisexual, usually with the female lower and the male above in the same inflorescence; sepals 3, green, petals 3, white or pinkish, sometimes with spots of other colors at bases; stamens many; pistils many; **fruit**: a cluster of 1-seeded nutlets (1 from each pistil).

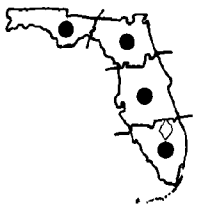
Eight species.

Recognition: leaf blade varies from broadly arrowhead to strap-shaped; flowers in long, stalked clusters, white with 3 petals; forms with strap-shaped leaves may resemble *Vallisneria*, but the roots of *Sagittaria* are branched.

Habitat: S - wet meadows, fresh or brackish marshes, wet forests and swales, sloughs and ditches, shallow water springs, streams; plants with straplike leaves are commonly submersed, while those with stalked, bladed leaves commonly emerge from the water.

Distribution: throughout Florida.

Flowering:



Crinum americanum **Amaryllidaceae**
Swamp-lily, String-lily

Perennial **herb** with an onionlike bulb; leaf bases forming a short stalk above the bulb; **leaves**: erect to spreading, straplike, 14-40 in. long, 2½-3 in. wide, with prominent internal air spaces; inflorescence about as long as leaves, arising from base of bulb; **flowers**: 2-6 at tip of stalk, with papery bracts, fragrant, white or white and pink, with a floral tube 4-6 in. long; petals 6, oblanceolate, 3-5½ in. long, spreading and then drooping; stamens 6, projecting from throat of flower; **fruit**: a capsule with 1-several large, fleshy seeds.

Recognition: thick, strap-shaped leaves with white flowers; vegetatively similar to *Hymenocallis* spp.

Habitat: S - swamps, marshes, stream shores, ditches.

Distribution: throughout Florida.

Flowering:

Hymenocallis **spp.** **Amaryllidaceae**
Spider-lilies

Perennial **herb** from a large, onionlike bulb; **leaves**: straplike, from top of bulb; inflorescence stalked, with 1-several flowers; **flowers**: with a long floral tube and 6 narrow, white petals, with a continuous white crown above the petals, the 6 stamens attached to the edge of the crown; style slender; **fruit**: a capsule with few to several seeds.

About 6 species: *H. choctawensis*, *H. crassifolia*, *H. kimballiae*, *H. henryae*, *H. latifolia*, *H. palmeri* (a difficult group, no species names used by Godfrey and Wooten).

Recognition: a white lily-like flower with 6 narrow, white petals; white, membranous tissue connecting the stamens, and broad, strap-shaped leaves.

Habitat: S - swamps, floodplain forests, wet forests, sloughs, streams, ditches, meadows.

Distribution: throughout Florida.

Flowering:

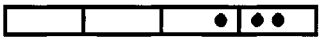
Colocasia esculenta **Araceae**
Wild Taro, Dasheen

Large perennial **herb** with a thick underground corm; **leaves**: very large, peltate, with long and fleshy stalk; blade ovate, the base notched to arrowhead-shaped, upper surface dark, velvety green; inflorescence stalked, fleshy, shorter than leaf stalk, enfolded by a green-yellow bract that is constricted below the middle; **flowers**: small, densely crowded on a fingerlike cluster, unisexual; female flowers near base, male flowers above; **fruit**: a cluster of berries, enclosed by bract.

Recognition: large, "elephant ear" or arrowhead-shaped leaves with peltate blades.

Habitat: **S** - along streams, marshes, marshy shores, drainage canals and ditches, marshy clearings.

Distribution: not native; widely escaped from cultivation, especially from Alachua County south.

Flowering: 

Orontium aquaticum Araceae
Golden Club

Perennial **herb** with stout rhizome; **leaves** clustered, long-stalked, blades oblong-elliptic, 6-8 in. long, 2-4 in. wide, velvety bluish-green, often floating; **flowers**: borne on a dense, club-shaped, stalked cluster, yellow; lower flowers bisexual with 6 sepals and 6 stamens, upper flowers male; **fruit**: a blue-green berry.

Recognition: leaves oblong-elliptic, dark green and velvety, with a water repellant surface; yellow flowers clustered at tip of club-shaped structure.

Habitat: S - shallow water, pools, streams and swamps.

Distribution: north and central Florida.

Flowering:

***Peltandra* spp.** **Araceae**
Spoon Flowers

Perennial **herbs**, erect, to 2 ft. tall; **leaves**: clustered, long-stalked, blade arrowhead-shaped with 3 main veins, to about 20 in. long and 10 in. wide; inflorescence enclosed in a leaflike greenish yellow or white bract (spathe); **flowers** unisexual, on a fingerlike cluster, female flowers near base, male flowers above; **fruit**: 1- to 3-seeded berries, enclosed by the leathery bract.

Two species: *Peltandra sagittifolia* with showy, open bract that is white above, bright red berries; *P. virginica* with yellowish green bract that spreads only slightly, green to brown berries.

Recognition: long-stalked, arrowhead-shaped leaf blades; blades whitish beneath with 3 prominent veins.

Habitat: **S** - bogs, swamps, marshes, swampy forests, wet clearings, ditches and canals, shores.

Distribution: throughout Florida.

Flowering:

Pistia stratiotes **Araceae**
Water-lettuce

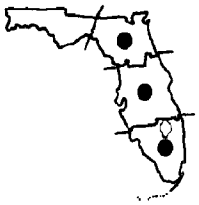
Floating **herb** with a rosette of gray-green leaves, multiplying by runners, with feathery roots beneath; **leaves**: ovate to obovate, densely hairy, 1¼-6 in. long; **flowers**: tiny, in a small, folded bract, not conspicuous; **fruit**: seed with a rough, warty coat.

Recognition: floating rosette of gray-green leaves (resembles a loose head of lettuce).

Habitat: S - floating in streams, lakes and ponds, forming dense mats.

Distribution: peninsular Florida.

Flowering:



***Canna* spp.** **Cannaceae**
Cannas

Tall perennial **herbs**, to about 4 ft. tall, from rhizome; **leaves**: several on each stem, spiral, 8-24 in. long, 2-6 in. wide, oblong or oblong-elliptic; **flowers**: in terminal clusters; sepals 3, green, petals 3, small and inconspicuous; stamens 3, petallike and showy, one of them with an anther on side; **fruit**: a 3-parted, rough capsule, 1-2 in. across, with spherical, brown or black seeds.

One native species, *Canna flaccida*, with yellow flowers to 3 in. long; *C. indica* and the garden hybrid, *C. generalis*, both usually with larger flowers and some red in the flower, may become naturalized.

Recognition: large flat leaves with many lateral veins spreading upward at a sharp angle; base tapering; tip pointed; yellow flowers of irregular shape.

Habitat: **S** - edges of ponds, lakes, marshes, savannas, ditches.

Distribution: peninsular Florida and west to Franklin County.

Flowering:

Cymodocea filiformis (=*Syringodium filiforme*) **Cymodoceaceae**
Manatee-grass

Submersed perennial **herb** with slender, wiry runner; **leaves**: sheathing at base, blades narrow and grasslike, cylindrical or somewhat flattened, to 15 in. long; **flowers**: unisexual, M/F, male flowers with 2 anthers on a single stalk, and 2 leafy bracts; female flower with 1 or 2 pistils in similar bracts; **fruit**: 1-seeded, in a papery fruit wall.

Recognition: submersed marine herb with cylindrical or slightly flattened leaves.

Habitat: **DNR** - coastal saline waters.

Distribution: throughout coastal Florida.

Flowering:

***Halodule beaudettei* (*H. wrightii*)** **Cymodoceaceae**
Cuban Shoal-weed, Shoal-grass

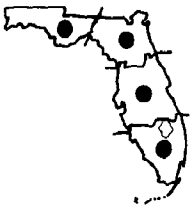
Perennial submersed **herb**, with short, wiry runners; **leaves**: blades very narrow, flattened, with sheaths at bases, tips 3-toothed (if not broken) 4-10 in. long; **flowers**: unisexual, M/F, borne in sheaths near base of plant; male flowers of 2 anthers on a single stalk; female of 2 pistils; **fruit** 1-seeded, in a papery covering.

Recognition: submersed marine herb, may be distinguished from *Cymodocea* by the distinctly flattened leaves.

Habitat: **DNR** - seagrass beds and tidal streams, generally below low tide levels.

Distribution: throughout Florida along coasts.

Flowering:



***Carex* spp.** **Cyperaceae**
Sedges

Perennial **herbs**, with grasslike solid stems; **leaves**: 3-ranked, with tubular, sheathing bases; **flowers**: unisexual, in separate spikes, or in different parts of same spike; male flowers with 2-3 stamens only; female flower enclosed in a sacklike structure (perigynium), which later encloses the fruit; **fruit**: a nutlet, 2-sided or 3-angled.

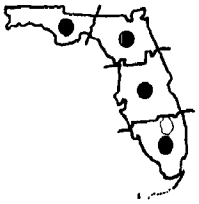
About 64 species (41 wetland species).

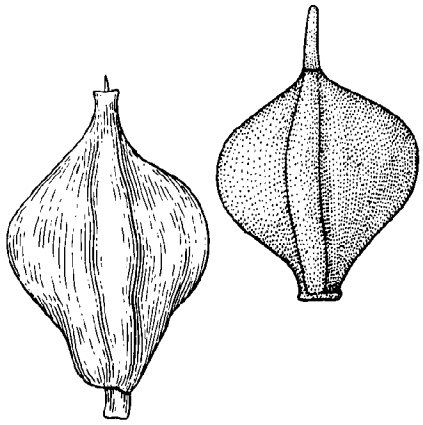
Recognition: *Carex* is very diverse, but the ovary or fruit is always enclosed in a sac or "perigynium."

Habitat: T (except species on next 5 pages) - from moderately moist to quite wet, in many diverse habitats.

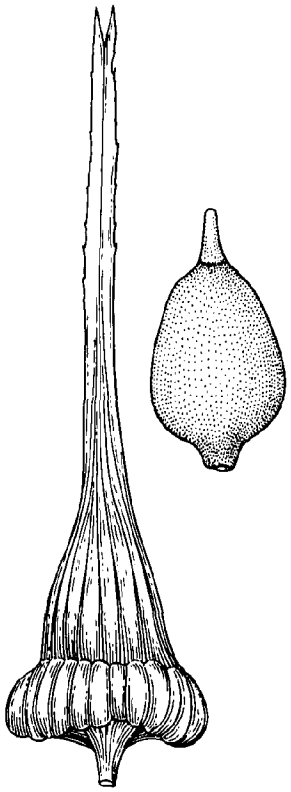
Distribution: throughout Florida.

Flowering:

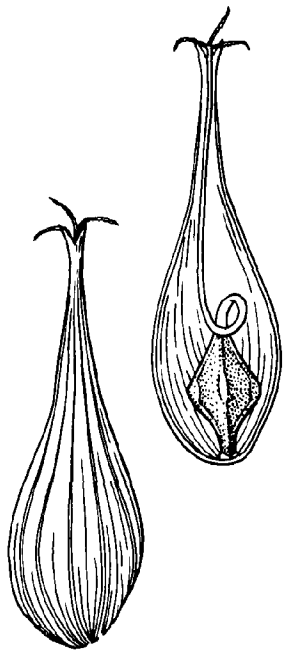




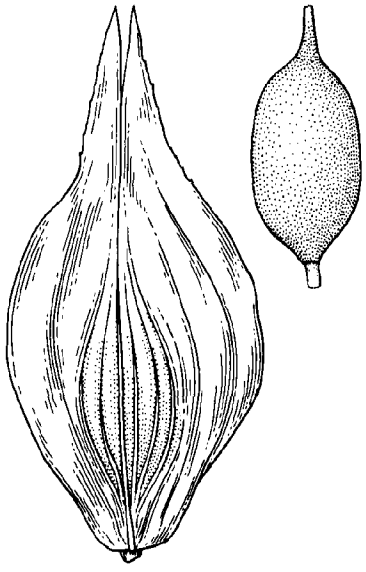
Sac and fruit of
Carex glaucescens



Sac and fruit of
Carex crus-corvi



Sac and fruit of
Carex lupulina



Sac and fruit of
Carex albolutescens

Carex decomposita **Cyperaceae**
Sedge

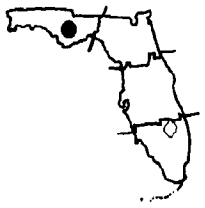
Perennial **herb,** forming clumps, stem 20-40 in. tall, slender, may be shorter or longer than leaves; **leaves:** 3/16-5/16 in. wide, sheathing bases whitish-papery, smooth, red-dotted; inflorescence: a cluster branched to above the middle, 2-4 in. long, not bristly or burlike; **flowers:** unisexual, male flowers in upper parts of some spikes; female flowers with 2 stigmas; scales ovate, pointed or short-bristled, about as long as fruit; **fruit:** a brown nutlet, 2-sided.

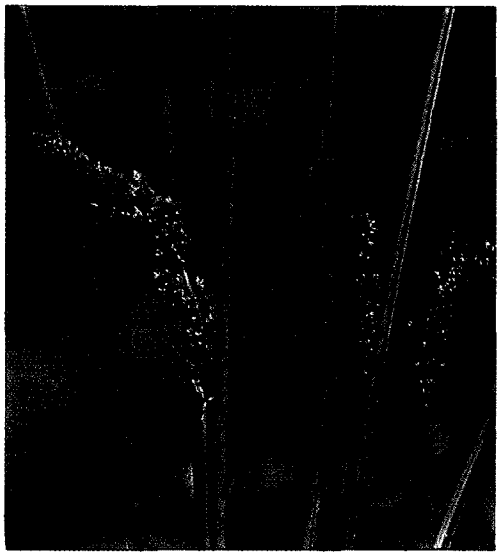
Recognition: fruit 2-sided; spikes less than 2-3 times as long as broad with male flowers at tip, female flowers below; sacklike structure not corky-thickened at base.

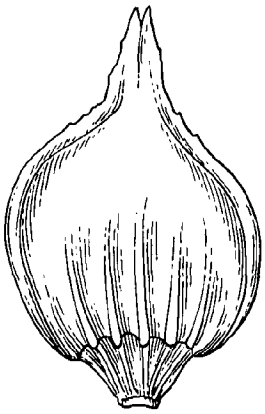
Habitat: S - swamps, especially on floating or exposed logs or stumps.

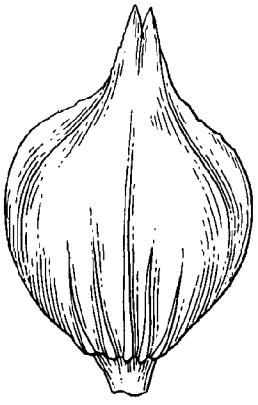
Distribution: northwest Florida: Jackson and Jefferson Counties.

Flowering:

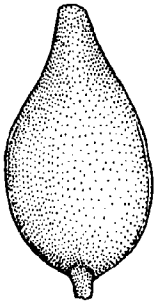








Sac (2 sides)



Fruit

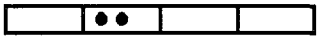
Carex howei **Cyperaceae**
Sedge

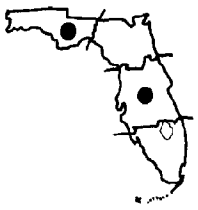
Perennial **herb**, forming dense clumps; stems slender, 12-30 in. tall; **leaves**: blades narrow, about 1/16 in. wide; **flowers**: in short, sessile spikes, unisexual, male flowers in lower part of some spikes; female flowers spreading, beaked, with 2 stigmas; **fruit**: a small nutlet, broadest below the middle, 2-sided and equally convex on each side.

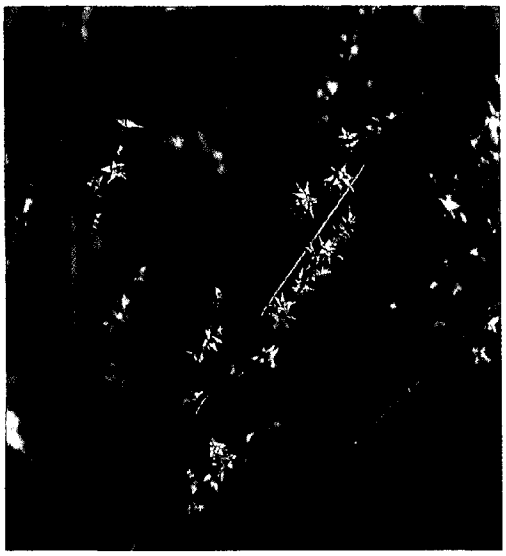
Recognition: fruit 2-sided; spikes approximately as long as broad; male flowers in lower part of some spikes; female flowers spread at right angles from stem; beak of sac is toothed; leaf blades about 1/16 in. wide.

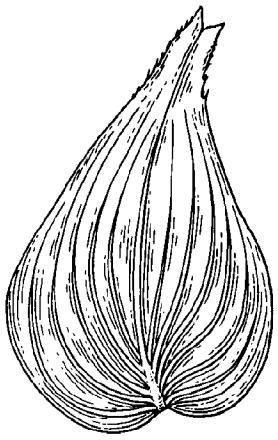
Habitat: S - swamps, wet forests, bogs, floodplain forests, cypress-gum ponds and depressions, often abundant on rotting logs and stumps.

Distribution: northwest Florida and locally in central Florida (Highlands County).

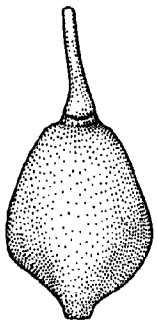
Flowering: 







Sac



Fruit

Carex leptalea **Cyperaceae**
Sedge

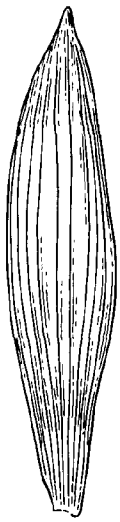
Perennial **herb**, with slender runners; stems slender, tufted, eventually forming dense clumps; 4-15 in. tall, equal to the leaves or longer; **leaves**: main blades about 1/32 in. wide, lower sheaths without leaf blades; **flowers**: in solitary, terminal spikes, these 3/16-1/2 in. long, narrow; male flowers in upper part of spike; female flowers few, loosely clustered, style branches 3; **fruit**: a 3-angled, brown nutlet, about 1/16 in. long.

Recognition: a delicate sedge from runners; 3-angled fruit; a single, narrow, terminal spike; lower sheaths without blades.

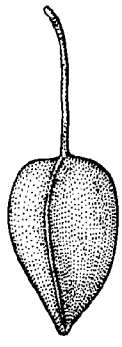
Habitat: T* - sphagnum bogs, swamps, floodplain forests and seepage areas, especially in *Chamaecyparis* swamps.

Distribution: north Florida.

Flowering:



Sac



Fruit

Carex stipata **(misspelled as *C. "stipitata"*)** **Cyperaceae**
Sedge

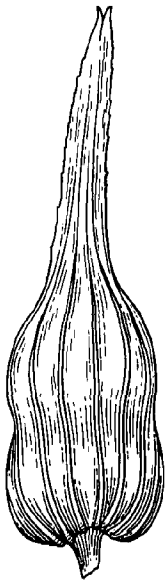
Perennial **herb**, forming clumps, stem stout, shorter than leaves; main blades 3/16-3/8 in. wide, with loose, whitish, papery sheaths, these minutely warty; **flowers**: in an irregularly branched cluster, unisexual, male flowers above; female flowers below, long-beaked, the beaks toothed, the enclosing sac thick and corky at the base, this corky base slightly wider than the fruit-bearing part; **fruit**: a 2-sided nutlet, about 1/16 in. long.

Recognition: fruit 2-sided; spikes 2-3 times as long as broad; male flowers at tip of spike, female flowers below; sac with a thick, corky base; upper portion of leaf sheaths with a loose, whitish, usually wrinkled surface.

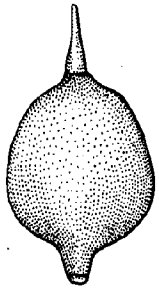
Habitat: T* - stream banks, marshy shores, swampy floodplains, bottomland and wet forests.

Distribution: north and central Florida.

Flowering:



Sac



Fruit

Carex walteriana **Cyperaceae**
Sedge

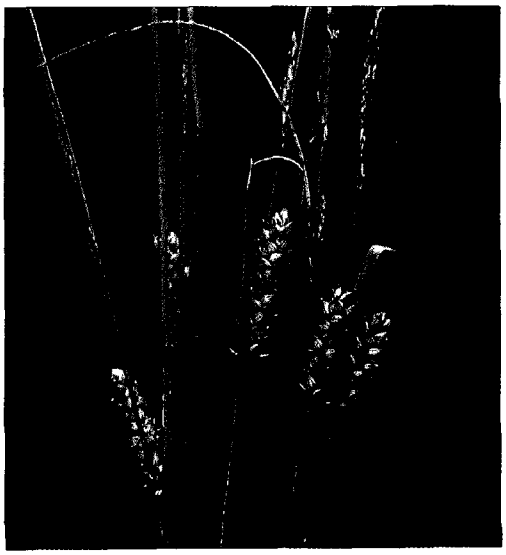
Perennial **herb**, rhizomatous, often forming pure stands, stems 15-50 in. tall, slender; **leaves**: main blades 1/16-3/16 in. wide, stiff, margins rough (minutely saw-toothed); sheaths somewhat spongy near base; **flowers** in 2 or few well separated spikes, unisexual, the uppermost spike male; female spikes 1-2, stiffly erect, oblong, 3/4-1 1/2 in. long, female flowers short-beaked, 1/8-1/4 in. long; **fruit**: a 3-angled nutlet, widest at middle, to 1/8 in. long.

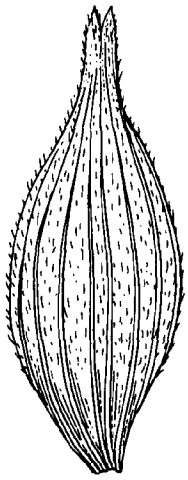
Recognition: fruit 3-angled; spikes 2 or more, densely flowered; uppermost spike male; slender, elongate rhizomes; sacs are hairy.

Habitat: S - usually in shallow water, cypress-gum ponds and depressions, evergreen shrub-tree bayheads and bogs.

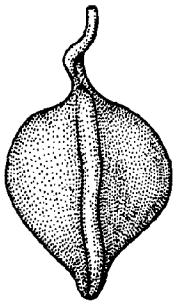
Distribution: north Florida.

Flowering:





Sac



Fruit

Cladium jamaicense Cyperaceae
Saw-grass

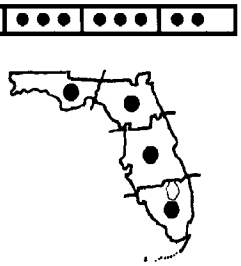
Coarse, perennial **herb**, with stout runners; stem 3-angled, 3-10 ft. tall; **leaves**: flat, 12-40 in. long, ¼-⅝ in. wide, the midrib and margins harshly and finely saw-toothed; inflorescence up to 8 ft. tall; with leafy bracts below, much-branched, with 2-6 spikelets at branch-tips; **flowers**: in spikelets, with 1 bisexual flower at base, and 1 male flower above; scales 2-3, spreading, overlapping; **fruit**: a nutlet, rounded-ovoid, about 1/16 in. long, wrinkled.

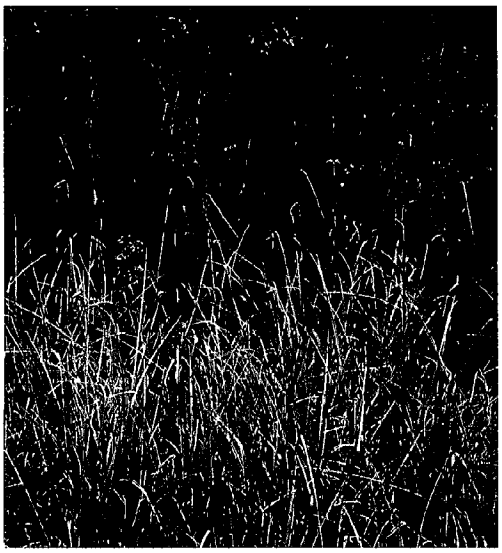
Recognition: leaves coarse, gray-green, saw-toothed on both margins and midrib; over-sized sedge with large, much-branched inflorescence of brown spikelets.

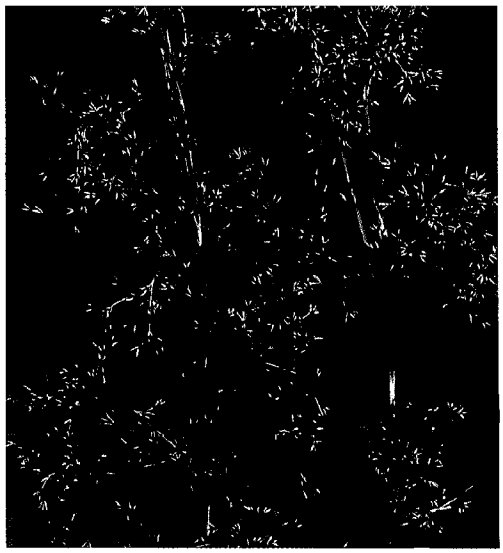
Habitat: S - swamps, marshes and shores, especially near the coast.

Distribution: throughout Florida.

Flowering:







Cyperus alternifolius **Cyperaceae**
Umbrella Flatsedge

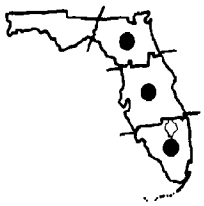
Perennial **herb**, forming clumps; stems to 4½ ft. tall, to about ¾ in. thick near base, triangular; **leaves**: sheaths present at base, but without blades; the inflorescence with a cluster of 10-25 leaflike bracts, mostly longer than the inflorescence; inflorescence with a sessile central spikelet cluster, and 15-25 stalked clusters; **flowers**: in narrow spikelets 3/16-3/8 in. long, with 12-30 flowers; scales keeled, in 2 ranks; **fruit**: a dark brown, 3-angled nutlet.

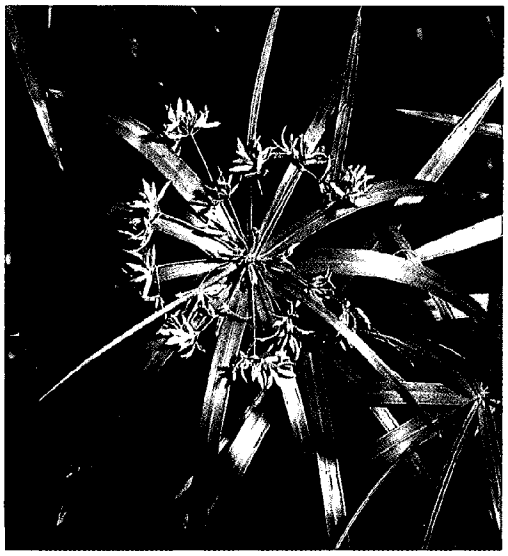
Recognition: the only sedge without leaf blades and with 10-25 leafy bracts below the inflorescence.

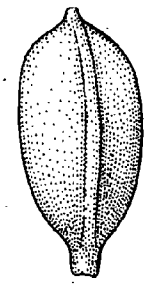
Habitat: S - cultivated and sometimes naturalized; in moist to wet and swampy areas and along streams.

Distribution: not native; occasional in peninsular Florida.

Flowering:







Fruit

Cyperus articulatus **Cyperaceae**
Umbrella Sedge

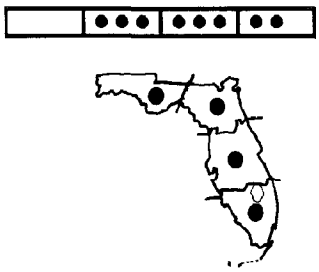
Perennial **herb**, with coarse rhizome; stem 3-6 ft. tall; ⅜-¾ in. thick near base, cylindrical, hollow, with many cross-walls, these visible as rings; **leaves**: no foliage leaves, some bladeless sheaths at base of stem; inflorescence of both short- and long-stalked spikelet clusters; **flowers**: in narrow spikelets ⅜-1½ in. long, scales 2-ranked, shallow-boatlike, about ⅛ in. long; **fruit**: a dark brown, shiny, 3-angled nutlet.

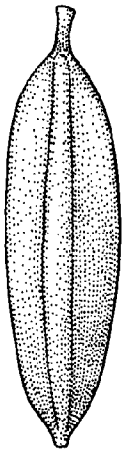
Recognition: tall, leafless, ringed stems with a cluster of very slender spikelets at the top.

Habitat: S - brackish and fresh marshes, drainage ditches and canals, borders of swamps, commonly in shallow water.

Distribution: peninsular Florida and Wakulla County.

Flowering:





Fruit

Cyperus haspan **Cyperaceae**
Flat Sedge

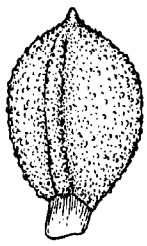
Perennial **herb**, stem 8-30 in. tall, 3-angled; **leaves**: few loose sheaths without blades, at base of stem; inflorescence with few, narrow bracts, usually one as long as inflorescence and several shorter; spikelets in long- and short-stalked clusters; **flowers**: in linear spikelets to about ⅜ in. long; scales 2-ranked, keeled, long-pointed; **fruit**: a slightly 3-angled nutlet.

Recognition: a sedge without leaf blades at base and with inconspicuous floral bracts; the spikelets are flattened, in irregular clusters.

Habitat: **S** - wet places, commonly in shallow water; marshy shores, shallow streams, borders of swamps, swales, alluvial outwash, wet clearings.

Distribution: throughout Florida.

Flowering:



Fruit

Cyperus odoratus **Cyperaceae**
Umbrella Sedge, Flat Sedge

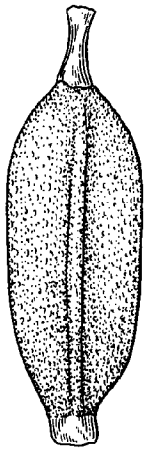
Coarse annual **herbs**, the stem solitary or tufted, 4-30 in. tall, commonly purplish and thick at base; **leaves**: loose sheaths at base, some with leaf blades, blades to ⅜ in. wide, the longer reaching the inflorescence; inflorescence with 3-10 conspicuous leaflike bracts, the larger ones much longer than inflorescence, to 12 in. long and ⅝ in. wide; very variable in size and density; **flowers**: in very narrow spikelets, these in bottlebrush-like clusters; scales overlapping, 1/16-⅛ in. long, **fruit**: a narrow, brown 3-angled nutlet; the spikelets breaking up into 1-seeded segments when mature.

Recognition: a sedge with both foliage leaves and conspicuous, leaflike bracts below the inflorescence; the spikelets are very narrow and break up into 1-jointed segments at maturity.

Habitat: T - marshy shores of streams, lakes, ponds, borders of mangrove swamps, exposed shores and bottoms, edges of swamps, wet clearings, spoil banks and flats.

Distribution: throughout Florida.

Flowering:



Fruit

***Dichromena* spp.** **Cyperaceae**
(sometimes treated as *Rhynchospora* spp.)
White-tops, Star-rushes

Perennial **herbs**; **leaves**: mostly near base, flattened, spreading; inflorescence a dense cluster of spikes, surrounded by leafy bracts that are partly white; **flowers**: in few- to several-flowered spikelets; scales spiral, overlapping; **fruit**: a 2-sided nutlet with tubercle at tip.

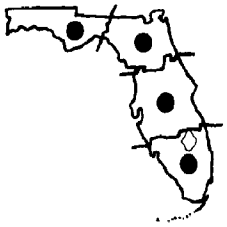
Three species: *D. colorata*, *D. floridensis*, *D. latifolia.*

Recognition: the only sedgelike plant with 3-10 conspicuous white leaves (bracts) in the inflorescence.

Habitat: T - wet, sandy-peaty open areas, flatwoods or savanna, depressions, ditches, bogs.

Distribution: throughout Florida.

Flowering:



***Eleocharis* spp.** **Cyperaceae**
Spikerushes

Annual or perennial **herbs**, tufted or creeping; stems unbranched; **leaves**: with sheaths, but no leaf blades, no leaflike bracts; **flowers**: in a single, terminal spike, scales overlapping, usually spiral; stamens 2-3; **fruit**: a nutlet, 2-sided or 3-angled, with a definite tubercle at tip, usually with 6-9 bristles surrounding the nutlet.

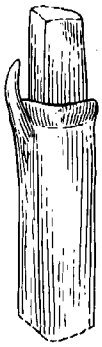
Twenty-nine species.

Recognition: sedge with unbranched, leafless stems that end in single spikes; tubercled seeds; may form mats.

Habitat: S - usually in water; marshes, lakes, ponds, drainage ditches and canals; some species form extensive or floating mats.

Distribution: throughout Florida.

Flowering:



Leaf sheath

***Fimbristylis* spp.** **Cyperaceae**
Fringe-rushes

Perennial or annual **herbs**; **leaves**: grasslike, near base of stem; **flowers**: in spikelets with spiral, overlapping scales; the spikelets in dense or branched clusters; flowers without sepals or bristles, and without bractlets within the main scales; **fruit**: a nutlet, without tubercle.

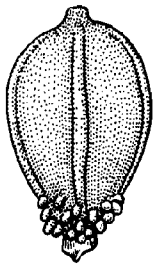
Thirteen species.

Recognition: herb with grasslike leaves; spikelets with spiral bracts, without bristles, sepals or bractlets within the inflorescence, seeds without tubercles.

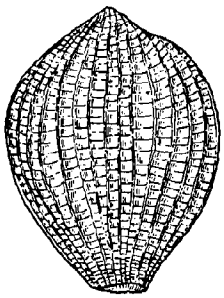
Habitat: S (except species on next 3 pages) - moist or wet areas, fresh or saline.

Distribution: throughout Florida.

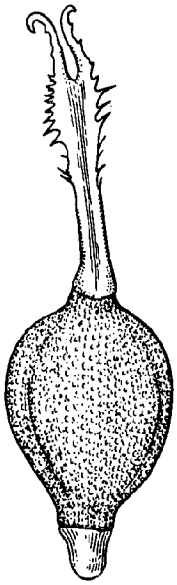
Flowering:



Fruit of
F. autumnalis



Fruit of
F. caroliniana



Fruit of
F. schoenoides

Fimbristylis annua **Cyperaceae**
Fringe-rush

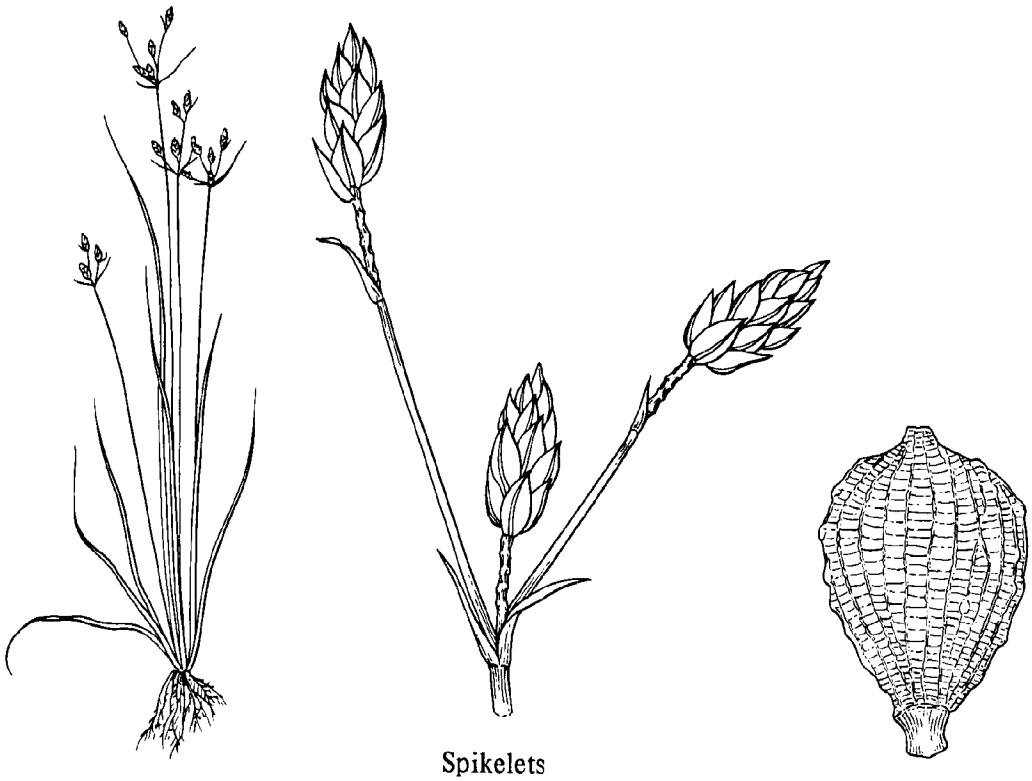
Annual **herb**, forming clumps, up to 20 in. tall; **leaves**: narrow, to 1/16 in. wide, with sheaths at base; inflorescence erect or ascending, with few leaflike bracts; **flowers**: in spikelets 1/8-5/16 in. long, narrowly ovoid or oblong, pointed, scales spiral, overlapping, oblong to ovate; **fruit**: a nutlet, 2-sided, surface netted, warty or not.

Recognition: an annual with 2 stigma branches, 15-20 in. tall, with thick, ovoid spikelets.

Habitat: U - moist, open areas, weedy, savannas, grasslands, roadsides.

Distribution: not native; scarce and sporadic in north Florida; reports from central and south Florida may refer to *F. dichotoma*.

Flowering:



Habit

Spikelets

Fruit

Fimbristylis puberula **Cyperaceae**
Fringe-rush

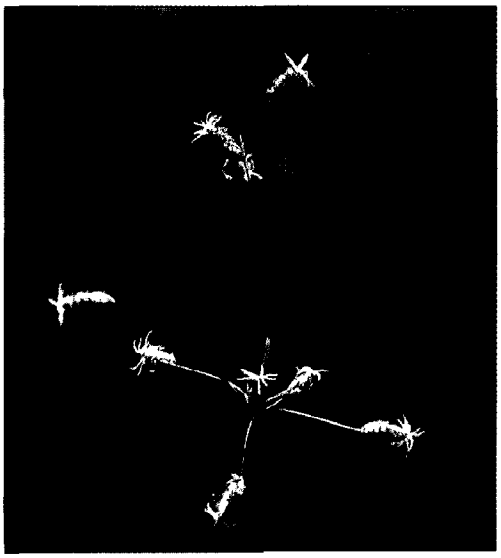
Perennial **herb**, tufted, up to 3 ft. tall; base often hard and knotty; **leaves**: blades narrow, about 1/32 in. wide; sheaths hard, thick, fibrous; inflorescence with a few, inconspicuous bracts, mostly shorter than the inflorescence; **flowers**: in spikelets, these narrowly ovoid, ovoid or ellipsoid, few-flowered, in compact or open clusters; scales spiral, overlapping, ovate, obovate or kidney-shaped, the midrib extended as a long point; style 2-branched; **fruit**: a 2-sided nutlet with netted surface.

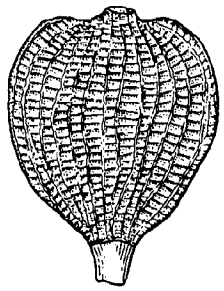
Recognition: a sedge with a hard, bulbous base, forming relatively small clumps (not large and dense, as in *F. castanea*).

Habitat: U - savannas, pinelands, edges of bogs, meadows, prairies.

Distribution: north and central Florida.

Flowering:





Fruit

Fimbristylis spathacea **Cyperaceae**
Fringe-rush, Hurricane-grass

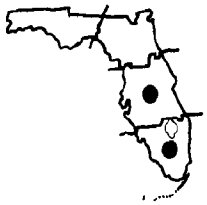
Perennial **herb**, solitary or tufted, to 20 in. tall; **leaves**: narrow, to 1/8 in. wide, spreading, about 1/2 as tall as inflorescence; inflorescence stiff, with few small leafy bracts below spikelet cluster; **flowers**: in spikelets, these densely clustered, ovoid, to 3/16 in. long; scales spiral, overlapping, ovate, slightly keeled; 2 style branches; **fruit**: a nutlet about 1/32 in. long, netted or warty, brown to almost black.

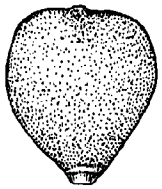
Recognition: the only perennial *Fimbristylis* with densely clustered spikelets; seed head needed for positive identification; stiff, ascending leaves are distinctive.

Habitat: U - coastal dunes, beaches, edges of brackish marshes, disturbed areas.

Distribution: central and south Florida.

Flowering:





Fruit

Fuirena scirpoidea **Cyperaceae**
Rush Fuirena

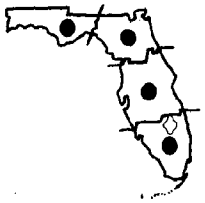
Perennial **herb**; stem to about 2 ft. tall, jointed, with short sheaths at joints; **leaves**: no foliage leaves, only sheaths; **flowers**: in terminal spikelets, these 1-several on each stem; scales spiral, overlapping, hairy, oblong-ovate, long-pointed; flowers with 3 paddle-like sepals alternating with barbed bristles; **fruit** a dark brown nutlet.

Recognition: leaf sheaths without blades, jointed stems and 1 to few spikelets at stem-tips.

Habitat: S - wet sands, peaty sands, wet marls, lake and pond shores, boggy depressions, shores, pineland depressions, cypress prairies, ditches.

Distribution: throughout Florida.

Flowering:



Fuirena squarrosa **Cyperaceae**
Lake-rush

Perennial **herb**, with short runners, forming clumps; stems 4-20 in. tall; **leaves**: grasslike, spreading, to ¼ in. wide and 6 in. long, sheaths hairy; **flowers**: in burlike spikelets, these 2-several in terminal clusters, ovoid to oblong, ⅜-¾ in. long; scales spiral, overlapping, about ⅛ in. long, oblong or obovate, tipped with a spreading or recurved, hairy spine longer than the scale; each flower with 3 paddle-like sepals, these long-pointed, alternating with barbed bristles that are about ¾ as long as the nutlet; **fruit**: a tiny, stalked nutlet.

Recognition: there are several very similar species; in *F. squarrosa* the bristles are more than half as long as (but not longer than) the nutlet.

Habitat: S - bogs and boggy shores, frequently in beaver ponds.

Distribution: northwest Florida.

Flowering:

Rhynchospora corniculata **Cyperaceae**
Horned Beak-rush

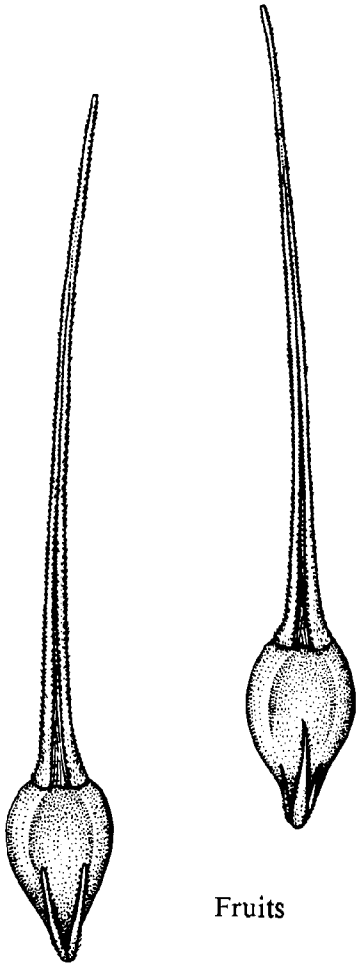
Coarse perennial **herb**, tufted or colonial, 3-5 ft. tall; the stem 3-angled, leafy; **leaves**; coarse, to ¾ in. wide, flat or keeled; inflorescence variable, open and branched, the spikelets loosely clustered (5-14) at branch-tips; **flowers**: in narrow spikelets, these lanceolate, chestnut brown, to about 1 in. long (including beak); scales spiral and overlapping; **fruit**: a nutlet, flattened, to 3/16 in. long, with a long-beaked tubercle ⅜-¾ in. long; surrounded by 4-6 unequal bristles shorter than the body of the nutlet.

Recognition: fruit about 1 in. long including long beak at tip; the spikelet is similar to that of *R. inundata*, but the plant of *R. corniculata* is larger, and the bristles are shorter than the body of the nutlet.

Habitat: S - marshy shores of ponds, lakes, streams, flatwoods depressions, in swamps, ditches, canals, sloughs.

Distribution: throughout Florida.

Flowering:



Fruits

Rhynchospora divergens **Cyperaceae**
Beak-rush

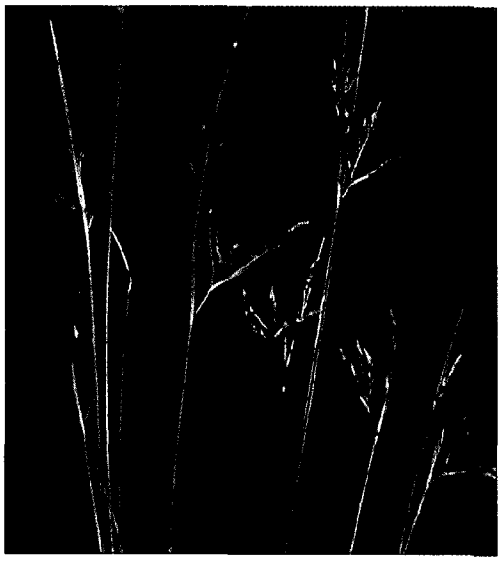
Delicate, perennial **herb**, 6-12 in. tall, stems and **leaves**: very slender; **flowers**: in spikelets, these in loose, terminal and axillary clusters; spikelets 1/16-1/8 in. long, brown, with 1-2 flowers; scales spiral and overlapping; **fruit**: a 2-edged nutlet, the surface smooth, but visibly netted at high magnification, without bristles.

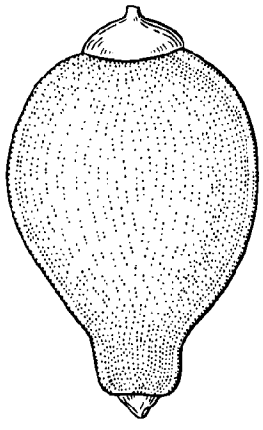
Recognition: not more than 1 ft. tall, delicate, with narrow leaves; spikelets in loose clusters, without bristles; nutlet microscopically netted (appearing smooth), with a small, tapering, conic tubercle.

Habitat: S - cypress and cypress-gum depressions and ponds, interdune swales, bogs, marl prairies, depressions in pine savannas and flatwoods.

Distribution: throughout Florida.

Flowering:





Fruit

Rhynchospora inundata **(=*R. careyana*)** **Cyperaceae**
Inundated Beak-rush

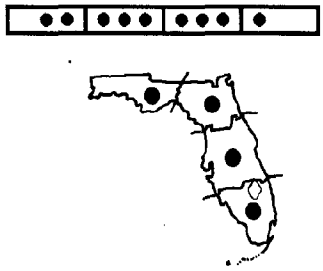
Perennial **herb** with long runners, commonly colonial, about 3-4 ft. tall; **leaves:** to 3/8 in. wide; inflorescence variable, open and branched, the spikes loosely clustered at branch-tips; **flowers:** in narrow spikelets, these lanceolate, brown, to about 1 in. long (including beak); scales spiral and overlapping; **fruit:** a nutlet, obovate, flattened, to 3/16 in. long, with a tubercle at tip about 1/2 in. long, and with 5-6 bristles to 5/8 in. long, longer than the nutlet.

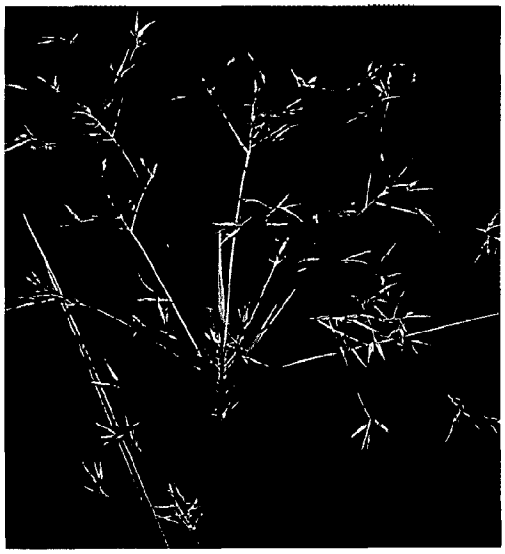
Recognition: fruit about 1 in. long including long beak at tip; similar to *R. corniculata*, but the bristles are longer than the body of the nutlet, and the plant is smaller.

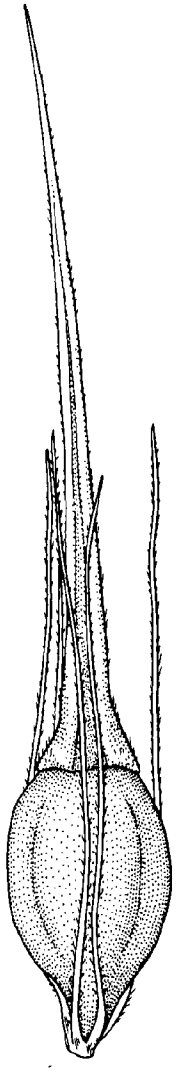
Habitat: S - peaty or mucky soils, swamps, cypress and cypress-gum ponds and depressions, savannas and flatwoods, bogs, ditches and canals.

Distribution: throughout Florida.

Flowering:







Fruit

Rhynchospora microcarpa **Cyperaceae**
Small-fruited Beak-rush

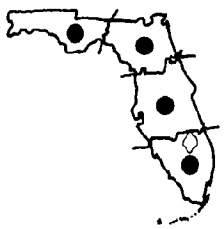
Perennial **herb**, clumped, to 3 ft. tall; **leaves**: flat, 1/16-1/8 in. wide; inflorescence variable, loose or compact, terminal and lateral clusters of spikelets; **flowers**: in spikelets, these ovate or lance-ovate, with 2-3 flowers, scales spiral and overlapping; **fruit**: a 2-sided nutlet, the surface narrowly ridged-netted, a tubercle at tip with short, stiff hairs; with bristles longer than nutlet.

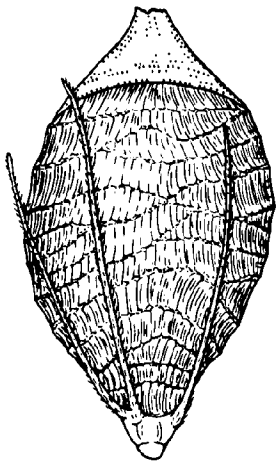
Recognition: nutlet has rounded faces, is strongly transversely ridged, with a triangular tubercle, and the bristles are longer than the nutlet; distinguished from the upland species *R. fascicularis* by shorter, more rounded, separated dark brown spikelets; *R. fascicularis* has longer, narrow, very tightly clustered, short-stalked, light brown spikelets.

Habitat: **S** - pond shores, cypress-gum pond margins, depressions in pine savannas and flatwoods, colonizing wet clearings, ditches and roadsides.

Distribution: throughout Florida.

Flowering:





Fruit

Rhynchospora miliacea **Cyperaceae**
Beak-rush

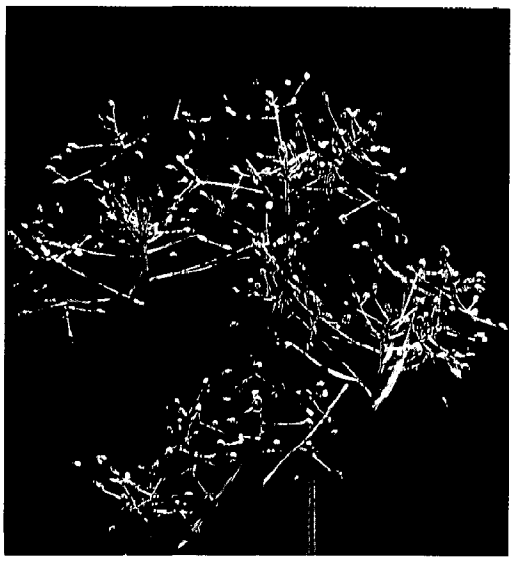
Perennial **herb** with runners, to 3 ft. tall; **leaves**: flat, to 5/8 in. wide; inflorescence 1¼-4 in. across, branching at right angles; **flowers**: in light brown, stalked spikelets, these to ⅛ in. long, the inflorescence branches and stalks spreading or recurved; **fruit**: a nutlet with tubercle at tip and transverse ridges, the bristles longer than the nutlet.

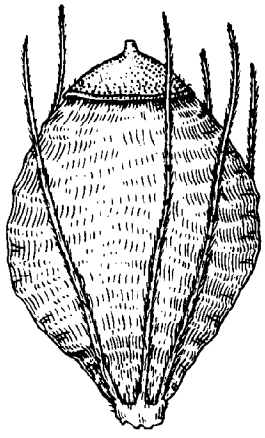
Recognition: loose, spreading inflorescence, with branches at right angles.

Habitat: S - floodplain forests, swamps, wet forests, cypress-gum ponds and swamps, marshy shores of streams.

Distribution: throughout Florida.

Flowering:





Fruit

Rhynchospora mixta **Cyperaceae**
Beak-rush

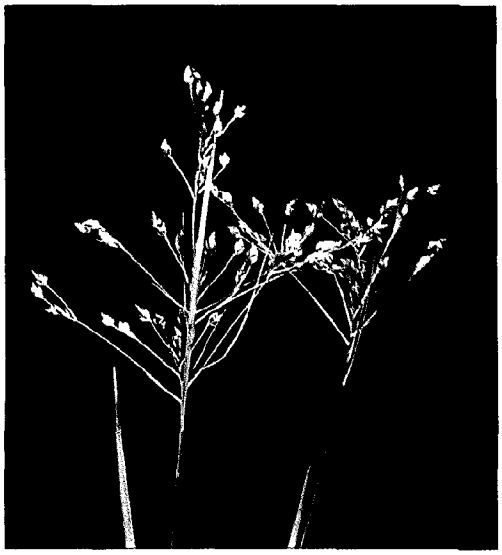
Perennial **herb**, with runners; stem slender, flexible, to about 3 ft. tall; **leaves**: to 3/16 in. wide, flat; inflorescence of terminal and 4-5 lateral, loose clusters, the main branches thin and spreading or ascending; **flowers**: in spikelets, these solitary or few, clustered on the stalks, ovate, brown, to 3/16 in. long, with 1 or few flowers; scales spiral and overlapping; **fruit**: a nutlet, 2-edged, both faces convex, the surface netted, with the spaces nearly as wide as long, without transverse ridges; tubercle at tip narrowly triangular, with short stiff hairs; bristles longer than nutlet.

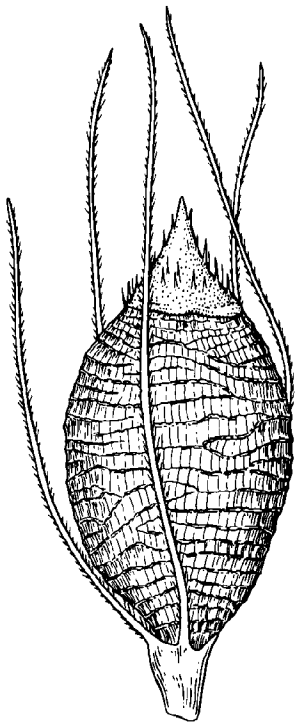
Recognition: best identified by the details of the nutlet, with netted but not ridged surface, the tubercle with short, stiff hairs, and the bristles longer than the nutlet; spikelets at ends of long stalks, branches spreading upwards (not at 90^{0} as in *R. miliacea*).

Habitat: S - wet forests, cypress-gum swamps, marshy shores.

Distribution: north Florida.

Flowering:





Fruit

Rhynchospora tracyi **Cyperaceae**
Tracy's Beak-rush

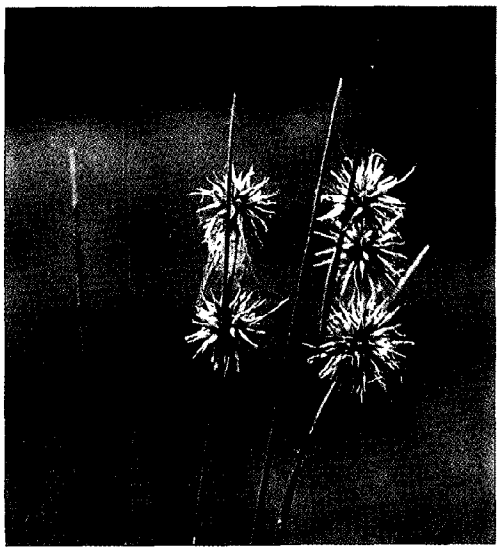
Slender perennial **herb**, with runners, usually colonial; stems to over 3 ft. tall, ridged, nearly cylindrical; **leaves**: slender, to 5/8 in. wide, strongly inrolled, some as long as the stems; inflorescence 1-2 dense, spherical clusters of spikelets to 3/4 in. across; **flowers**: in narrow, light chestnut brown spikelets, scales spiral and overlapping; **fruit**: a flattish nutlet, widest above, body about 1/8 in. long, bearing a slender, beaked tubercle about 3/16 in. long; nutlet surrounded by 6 finely toothed bristles longer than the body of the nutlet.

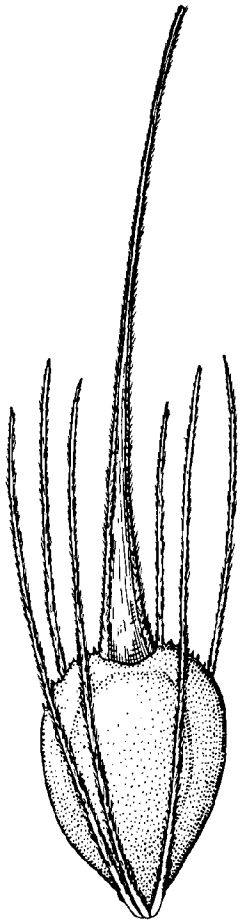
Recognition: leaves slender, strongly inrolled; spherical clusters of beaked spikelets; beaks about 3/16 in. long.

Habitat: S - commonly in water; ponds, marshes, wet pinelands, cypress-gum depressions and ditches.

Distribution: throughout Florida.

Flowering:





Fruit

Schoenus nigricans Cyperaceae
Black Sedge

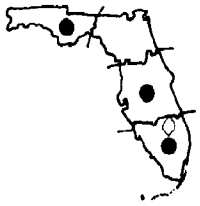
Perennial **herb**, forming large, very dense clumps, stems to 30 in. tall, squarish, smooth; **leaves**: the sheaths dark reddish brown to almost black; blades stiff, triangular, channelled, the edges rough; **flowers**: in dark, reddish brown spikelets, these densely clustered at stem tip, with 1-2 leaflike bracts up to 3 in. long; scales of spikelets 2-ranked, overlapping, keeled, pointed; **fruit**: a bluntly 3-angled or rounded whitish nutlet without tubercle, with 3-6 short bristles.

Recognition: dense clump; leaves blackened at base, thin and stiff; seedhead a tight bunch with white nutlets and 3-6 bristles.

Habitat: T - marshes, wet limestone pinelands and prairies.

Distribution: south, west central and eastern northwest Florida.

Flowering:



Fruit

***Scirpus americanus* (=*S. pungens*)** **Cyperaceae**
Common Three-square, Sword-grass

Perennial **herb**, with runners, commonly colonial; stems to 3 ft. tall, sharply 3-angled, **leaves**: mainly sheaths, with 1-3 leaf blades up to 8 in. long; inflorescence at stem tip, but the bract appears as a continuation of the stem (inflorescence appears lateral); bract 1-5 in. long; **flowers**: in spikelets, these 1-5, sessile, up to ¾ in. long, ovoid or narrowly ovoid; scales spiral, overlapping, chestnut brown, deeply notched, the notch including a prominent point (continuation of midvein) that is longer than the notch; **fruit**: a nutlet, about ⅛ in. long, with usually 4 barbed bristles.

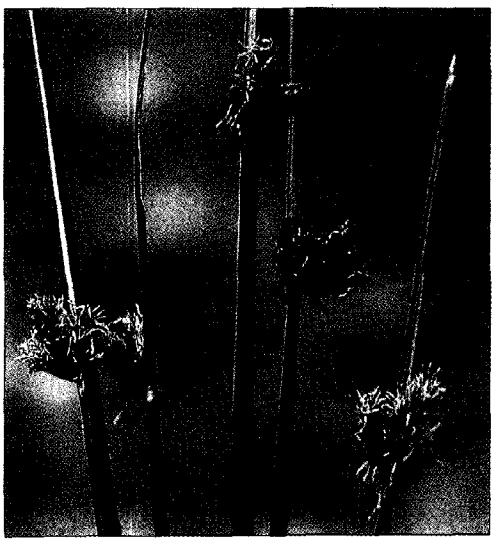
Scirpus americanus has been confused with *S. olneyi*, and the correct name for the "old" *S. americanus* is *S. pungens*.

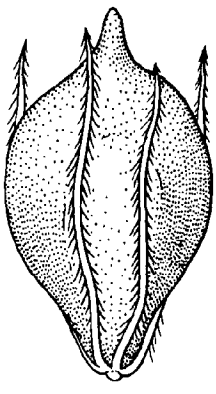
Recognition: sedge with sharply triangular stems, the bract extends 1-5 in. beyond the inflorescence and resembles a continuation of the stem; the spine on the spikelet scales is borne in a deep notch and projects above the sides of the notch.

Habitat: S - wet, usually sandy, fresh to brackish or saline shores and marshes.

Distribution: throughout Florida.

Flowering:





Fruit

Scirpus californicus **Cyperaceae**
Southern Bulrush, Giant Bulrush

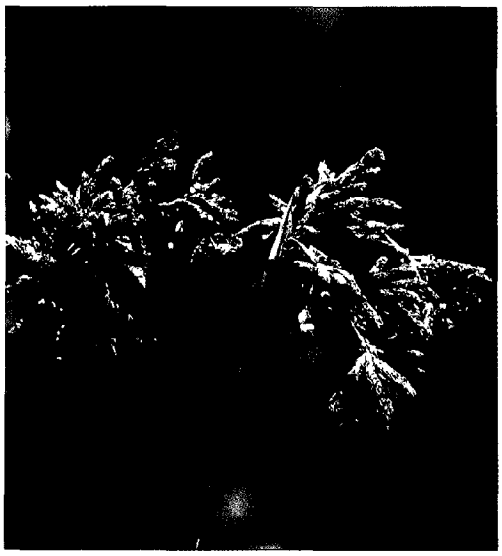
Coarse, tall perennial **herb**, with thick runners; stems bluntly 3-angled, 3-10 ft. tall, dark green, smooth; **leaves**: none; inflorescence with a stemlike bract ½-3 in. long; **flowers**: in spikelets, these stalked, the stalks unequal; spikelets narrowly ovoid, to ½ in. long, many-flowered; scales spiral and overlapping; chestnut brown; **fruit**: a gray or grayish brown nutlet, smooth, with 2-4 feathery bristles.

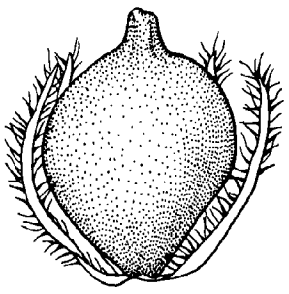
Recognition: a 3-10 ft. tall sedge with rounded 3-angled stems and stalked spikelets; the spikelets are rather pointed, and the bristles surrounding the nutlet are feathery.

Habitat: S - often in shallow water; marshes, pools, drainage canals and ditches, shores.

Distribution: north and central Florida.

Flowering:





Fruit

Scirpus cubensis **Cyperaceae**
Bulrush

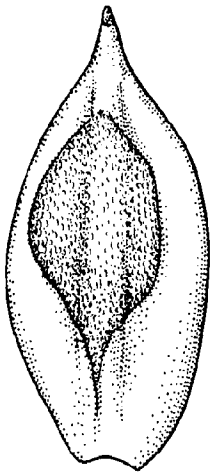
Perennial **herb**, with slender, reddish runners; stems slender, triangular, to 3 ft. tall; **leaves**: all near base, many longer than stem; inflorescence with 2-6 leaflike bracts; **flowers**: in spikelets, these in dense, spherical heads to ¾ in. across; some heads stalked; scales spiral, overlapping, translucent brown, keeled, the midrib continuing as a long point; **fruit**: an olive nutlet about ⅛ in. long, base, tip and edges of nutlet with a white, bony material; without bristles.

Recognition: sedge with triangular stems and lumpy, rounded, sessile heads at the stem tips, above 2-6 leaflike bracts.

Habitat: S - in floating mats of vegetation, sandy to peaty shores.

Distribution: north and central Florida, especially frequent in Polk County.

Flowering:



Fruit

Scirpus cyperinus **Cyperaceae**
Woolgrass Bulrush

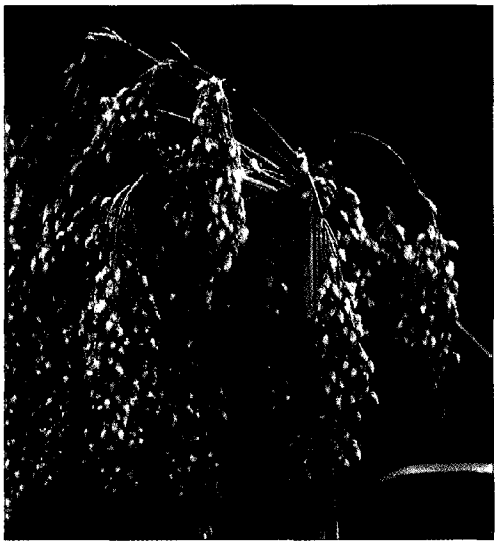
Coarse, perennial **herb**, 3-6 ft. tall, stems bluntly triangular, leafy; **leaves**: up to 30 in. long, to ¾ in. wide, channelled and folded, margins rough; inflorescence with 2-3 leafy bracts, with several long, flexible and drooping stalks up to 6 in. long, branched; **flowers**: in stalked spikelets, these ovoid, to ¼ in. long, reddish brown; **fruit**: a nutlet, 3-angled, smooth; bristles long and curly, projecting from the mature spikelet and making it woolly.

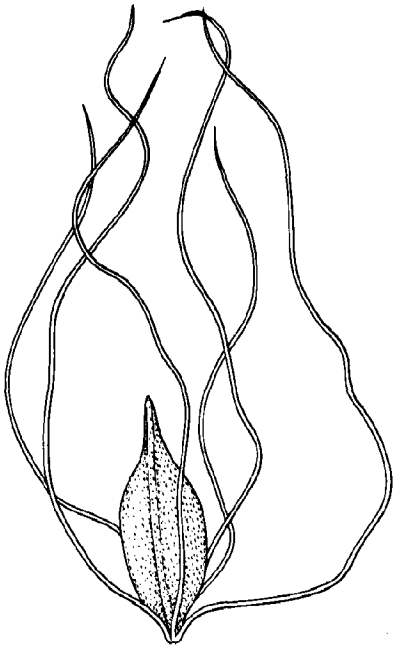
Recognition: a 3-6 ft. tall sedge with bluntly triangular stems forming dense clumps; spikelets in clusters at ends of drooping stalks, woolly at maturity.

Habitat: S - marshes, meadows, cypress and gum swamps and ponds, boggy places, swales, ditches.

Distribution: north and central Florida.

Flowering:





Fruit

Scirpus erismanae **Cyperaceae**
Bulrush

Perennial **herb**, clumped; stems to 12 in. tall, subcylindric, with small leaves at base; **leaves**: blades to 8 in. long, usually shorter; inflorescence bract appearing as a continuation of the stem, ½-8 in. long; **flowers**: in spikelets without stalks, in clusters of 1-10, ovate to lance-ovate, to about 1 in. long, spikelet scales spiral and overlapping, reddish brown; style branches 2; **fruit**: a black nutlet, one side more rounded than other, with transverse ridges, without bristles.

Recognition: small, tufted sedge with rounded stem, the spikelets sessile, the nutlet ridged and without bristles.

Habitat: S - wet sands, peats or peaty sands of pond shores, pools, in swampy forests, flatwoods depressions.

Distribution: north and central Florida.

Flowering:

Habit Fruit Spikelets

Scirpus etuberculatus Cyperaceae
(=*S. subterminalis* var. *cylindricus*)
Bulrush

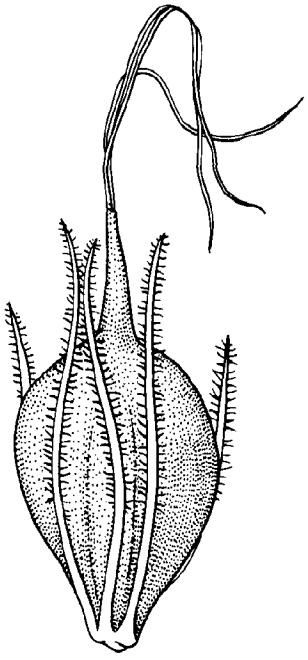
Perennial **herb**, with red runners; stems becoming swollen, 3-4½ ft. tall, weakly triangular below, sharply so above; **leaves**: mostly at base, channeled, nearly as long as stem, to ½ in. wide, tapering to a narrowly blunt tip; inflorescence usually with 1 bract, this to 8 in. long; **flowers**: in spikelets, these on slender, arching stalks, up to 1 in. long, narrowly ovoid; scales spiral and overlapping, about ¼ in. long, with green midrib and a stout point; **fruit**: a nutlet, about ⅛ in. long, 3-angled with 4-6 bristles, these longer than the nutlet.

Recognition: sedge with red runners, sharply triangular stems and spikelets on arching stalks.

Habitat: S - ponds, fresh and brackish marshes, streams.

Distribution: north and central Florida.

Flowering:



Fruit

Scirpus olneyi (=*S. americanus*) **Cyperaceae**
Olney's Three-square

Perennial **herb** with runners, commonly colonial; stem to about 3 ft. tall, sharply triangular; **leaves**: mostly sheaths, with 1-3 small leaf blades; inflorescence at stem tip, but the bract appears to be a continuation of the stem; bract 3/8-2 in. long, tapering; **flowers**: in spikelets, these 1-5, sessile, up to 3/4 in. long, ovoid or narrowly ovoid; scales spiral, overlapping, chestnut brown, shallowly notched, with a small, inconspicuous point in the notch; **fruit**: a nutlet, about 1/8 in. long, usually with 4 barbed bristles.

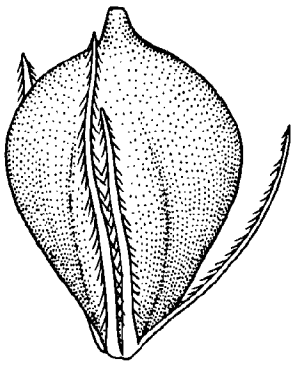
This is the species originally described as *S. americanus*, though we have long used that name for another species.

Recognition: sedge with triangular stems; bract up to 2 in. long; the spikelet scales end in small, inconspicuous points.

Habitat: S - brackish and saline shores and marshes.

Distribution: north Florida.

Flowering:



Fruit

Scirpus robustus **Cyperaceae**
Saltmarsh Bulrush

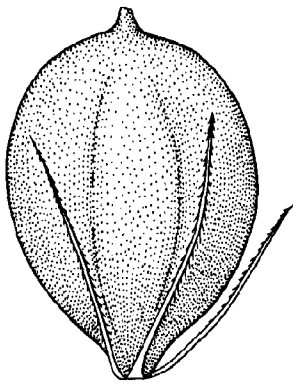
Perennial **herb**, with unbranched brown or blackish rhizome; stem triangular, to 3 ft. tall, lower joints with sheaths only; **leaves**: to 24 in. long and ⅜ in. wide; inflorescence with leaflike bracts, the longest to 12 in. long, others shorter; **flowers**: in 1-5 spikelets, these large, ovoid or oblong, ½-1¼ in. long, stalked or sessile, or in stalked clusters; scales spiral and overlapping, brown or reddish brown, with darker brown midrib, long-pointed, the point borne in a notch; **fruit**: a shiny, brown nutlet, bristles none or 3-4, barbed, mostly shorter than the nutlet.

Recognition: sedge with very large spikelets about 1 in. long, and leaflike bracts.

Habitat: **S** - brackish to saline coastal marshes.

Distribution: throughout Florida.

Flowering:



Fruit

Scirpus validus Cyperaceae
Giant Bulrush, Softstem Bulrush

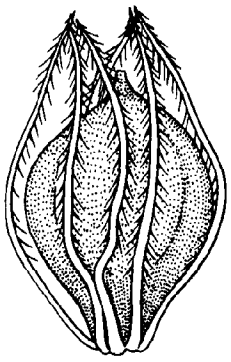
Coarse, perennial herb, with rhizome; stems cylindric or slightly 3-angled, spongy, to 10 ft. tall, up to ¾ in. thick at base; **leaves**: only sheaths at base of stem; inflorescence with a single bract that looks like a continuation of the stem, ¼-3 in. long; **flowers**: in spikelets, these irregularly clustered on stalks of varying lengths, some blunt; scales chestnut brown, spiral, overlapping, pointed, to ⅜ in. long; **fruit**: a smooth nutlet, with 4-6 barbed bristles longer than the nutlet.

Recognition: leafless sedge with more or less cylindrical stems and the spikelets blunt and stalked; the bristles around the fruit are barbed (not featherlike).

Habitat: S - marshes, streams, ponds, commonly in shallow water.

Distribution: throughout Florida.

Flowering:



Fruit

***Scleria* spp.** **Cyperaceae**
Nut-rushes

Perennial or annual **herbs**, stem 3-angled, up to 3 ft. tall; **leaves**: lower sheaths without blades, upper sheaths with keeled blades; **flowers**: unisexual, usually mixed in the cluster; spikelets clustered; **fruit**: a hard, bony or enamel-like nutlet, often whitish or shiny, without tubercle or bristles.

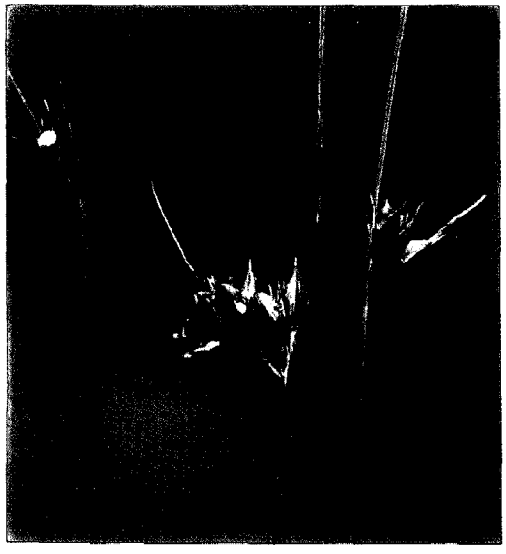
Ten species.

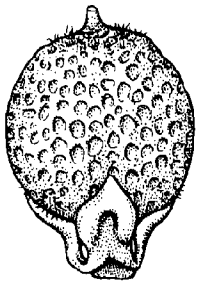
Recognition: sedge with 3-angled stem; hard, bony, whitish nutlet that is normally exposed in the spikelets.

Habitat: T - bogs, savannas, pinelands, thickets and open woods.

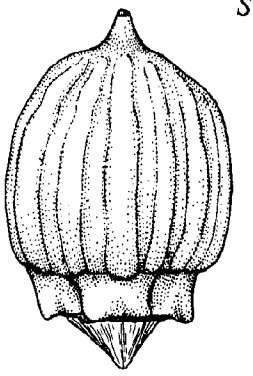
Distribution: throughout Florida.

Flowering:

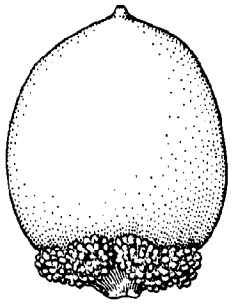




Fruit of
Scleria reticularis



Fruit of
Scleria baldwinii



Fruit of
Scleria triglomerata

***Eriocaulon* spp.** **Eriocaulaceae**
Hat-pins, Pipeworts

Biennial or perennial **herbs**; roots thick, appearing unbranched, with cross partitions; **leaves**: narrow, tapering, several to many in a spiral cluster at base, yellowish-green, often with air spaces; inflorescence long-stalked; **flowers**: tiny, unisexual, sometimes M/F, densely crowded in subspherical or flattened, black, brown or grayish white heads; sepals 2, petals 2, stamens 3-6; **fruit**: a tiny capsule with 1 or 2 small seeds.

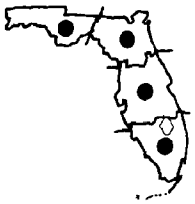
Five species: *E. compressum*, *E. decangulare*, *E. lineare*, *E. ravenelii*, *E. texense*.

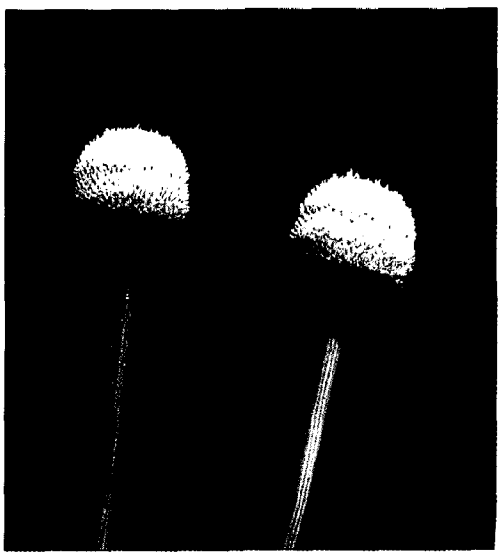
Recognition: herb with leaves clustered at base; leafless stalk ending with a white buttonlike head; thick, unbranched roots and obvious air spaces in the leaves.

Habitat: S - shallow ponds, lake shores, bogs, savannas, ditches, low flatwoods, depressions.

Distribution: throughout Florida.

Flowering:





***Lachnocaulon* spp.** **Eriocaulaceae**
Bog Buttons

Small perennial **herbs**, the roots slender, fibrous and clearly branched; **leaves**: in dense, spiral clusters at base, narrow, tapering; **flowers**: unisexual, in stalked, densely clustered, subspherical heads; sepals 3, petals lacking; stamens 2 or 3; **fruit**: a capsule with small seeds.

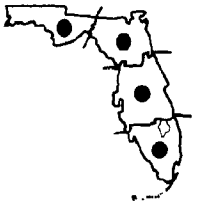
Five species: *L. anceps*, *L. beyrichianum*, *L. digynum*, *L. engleri*, *L. minus*.

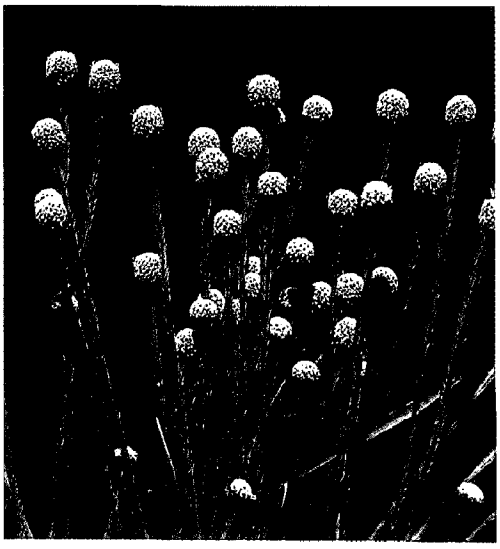
Recognition: *Lachnocaulon* resembles *Eriocaulon*, but has obviously branched roots, and does not have obvious air spaces in the leaves.

Habitat: S (except *L. anceps*, p. 78, *L. digynum*, p. 79) - wet pine flatwoods, moist savannas, pond margins, ditch banks, lake shores and other areas with frequent flooding.

Distribution: throughout Florida.

Flowering:





Lachnocaulon anceps **Eriocaulaceae**
Bog Buttons

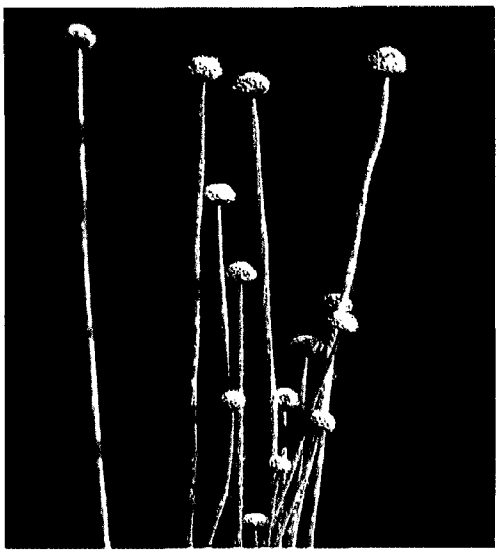
Perennial **herb**, forming clumps, with the leaves in dense spiral clusters; **leaves**: narrow, tapering, 1-2¼ in. long, pale green or gray-green, may have scattered hairs; **flowers**: unisexual, in dense, stalked, subspherical heads, the stalk 6-15 in. tall, twisted, ridged, hairy; heads to about ¼ in. wide, whitish or pale gray; male flowers with 3 sepals, no petals; **fruit**: a small capsule.

Recognition: the inflorescence stalk is hairy, and the hairs on the surface of the flower cluster are milk-white, with darker glands and bracts showing through; the flower heads are generally 3/16 in. wide or wider; also the seeds are not very shiny and have definite longitudinal ribs (under a lens).

Habitat: T - moist to rather dry sands, sandy peat or peat; pine flatwoods, savannas, pond margins, ditch banks, lake shores and bogs.

Distribution: throughout Florida.

Flowering:



Lachnocaulon digynum **Eriocaulaceae**
Bog Buttons

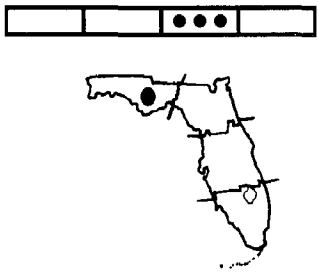
Perennial **herb**, roots fibrous and branched; forming clumps; **leaves**: in dense spiral clusters, narrow, ¼-¾ in. long, yellowish green, tapering evenly from the base; inflorescence stalked, 2-4 in. long, twisted, 3-ridged, smooth or with scattered hairs; **flowers**: unisexual, in a dense, grayish or dull gray-brown, semispherical head up to ⅛ in. wide; male flower with 3 brown sepals, 3 stamens; **fruit**: a capsule.

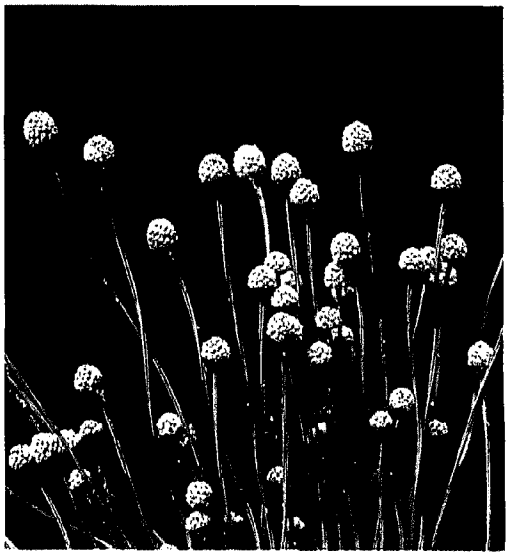
Recognition: the smallest of the *Lachnocaulon*, with the leaves rarely more than ¾ in. long; the flower heads are pale brown and generally no longer than wide, even when mature.

Habitat: **T** - wet acid areas, seepage bogs, pineland pond margins, ditches and road banks.

Distribution: northwest Florida, Escambia to Bay Counties.

Flowering:





Arundinaria gigantea **Gramineae**
Cane, Giant Cane, Switch Cane

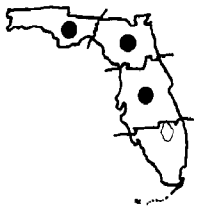
Woody perennial with woody underground runners; 3-28 ft. tall, stems to 1⅜ in. thick; **leaves**: flat, 4-12 in. long, ¾-1½ in. wide, smaller on flowering stems, usually hairy on the upper surface, base of leaf blade narrowed to a distinct stalk; **seedhead**: appears very infrequently, and then most plants in an area will flower at the same time; 6-24 in. long, main branches erect, secondary branches drooping; **flowers**: 1¼-2¾ in. long, flattened, at ends of branches; hairy on margins and tips; **fruit**: ¼-5/16 in. long, somewhat elliptic, brown.

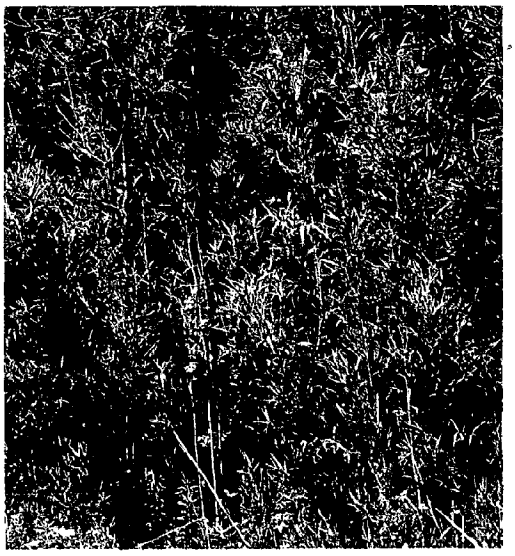
Recognition: woody perennial grass with thick underground runners; leaf blades flat, usually hairy on the upper surface, narrowed to a distinct stalk; usually with long bristles at tip of sheathing leaf bases.

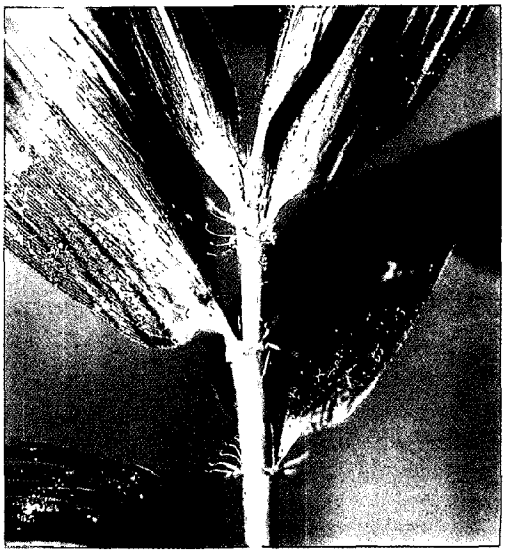
Habitat: T - any damp or wet area.

Distribution: north and central Florida south to Orange County.

Flowering: any month, but not every year, very irregular.







Axonopus furcatus **Gramineae**
Big Carpet Grass

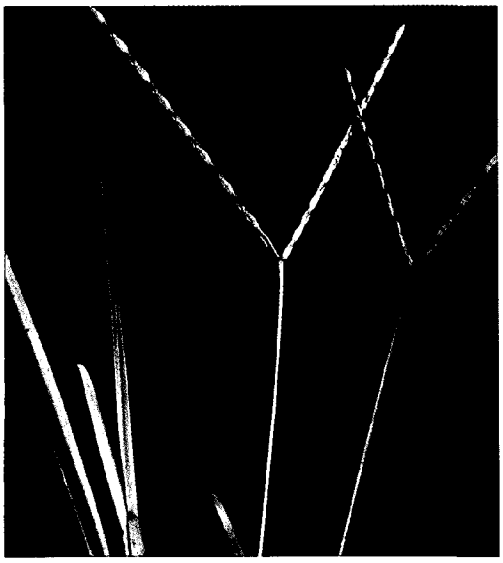
Perennial **herb** to 2 ft. tall, in clumps or with runners; **leaves**: flat or folded, 6-12 in. long, ¼-½ in. wide, margins with long, straight hairs; **seedheads**: with 2 or 3 branches, upper 2 branches paired, branches 1-5 in. long; **flowers**: only on lower side of branches, in two rows, 3/16 in. long; **fruit**: 1/16 in. long, smooth.

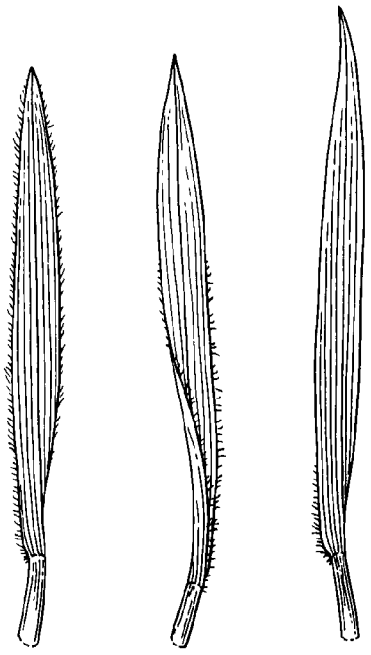
Recognition: grass with runners; broad, flat leaf-blades with long, straight hairs along margins; seedheads with paired branches and small flowers in two rows on the lower side.

Habitat: **T**** - wet flatwoods, marshes and shores, prairies, wet disturbed sites.

Distribution: throughout Florida.

Flowering:





Leaves

Distichlis spicata **Gramineae**
Saltgrass

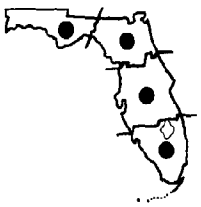
Perennial **herb** to 2 ft. tall, with runners above and below ground; **leaves**: flat, becoming rolled with age and when dried, sharp-pointed, 1-6 in. long, 1/16-1/4 in. wide, arranged so that the leaves appear to be on opposite sides of the stem (appear to be in a line when viewed from above or from the side), smooth or with a few long hairs at base on upper surface; **seedheads**: narrow, dense, 1-2 in. long; **flowers**: appressed, male and female on separate plants, 3/16 in. long, in clusters of 6-15; **fruit**: 1/16 in. long, smooth, oval.

Recognition: grass with runners above and below ground; stems erect and rigid; leaves very conspicuously 2-ranked; blades rolled and sharp-pointed, leaf sheaths with no hairs along the upper margin; leaves appear to be in a line when viewed from above or from the side.

Habitat: **S** - salty to brackish areas along the coast.

Distribution: throughout coastal Florida.

Flowering:



Spikelet

Hydrochloa caroliniensis (*Luziola fluitans*) **Gramineae**
Watergrass

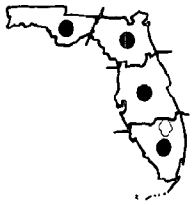
Perennial **herb**, floating, trailing and rooting at the joints, or erect and to 1 ft. tall; **leaves**: flat, thin, 1-3 in. long, 1/16-5/16 in. wide, sandpapery on the upper surface; **seedheads**: small, few-flowered, at stem tips and in axils of leaves, male and female flowers in separate clusters; **flowers**: few, 1/16 in. long; **fruit**: 1/16 in. long, difficult to find.

Recognition: grass floating in water or growing erect on normally flooded land; leaf-blades thin and flat; flap of thin white tissue 1/16 in. long at top of leaf sheath.

Habitat: S - any standing or slowly flowing water or on shores normally flooded.

Distribution: throughout Florida.

Flowering:



Leersia spp. **Gramineae**
Southern Cutgrass, Cutgrasses

Perennial **herbs** with underground runners, and sometimes with runners above ground, leaning or trailing, to 3 ft. tall; **leaves**: flat, thin, firm, 3-12 in. long, ⅛-¾ in. wide, sandpapery above and below, margins sharp and cutting; **seedheads**: 1-12 in. long, with several thin and often drooping branches, flowers crowded toward the tips of branches; **flowers**: flattened, ridged, 1/16-¼ in. long, with stiff, short hairs; **fruit**: flat, ⅛-¼ in. long, elliptic, reddish.

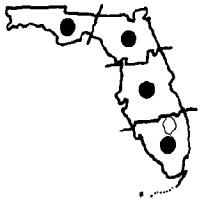
Four species: *L. hexandra*, *L. lenticularis*, *L. oryzoides*, *L. virginica.*

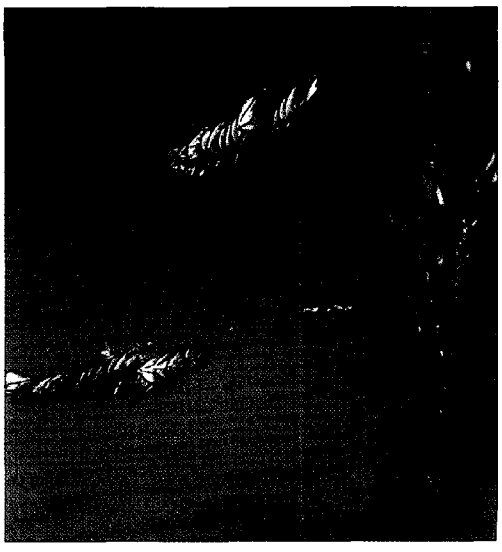
Recognition: leaning grass with runners either above or below ground; leaves thin, flat, firm with sharp, cutting edges and sandpapery surfaces; flowers flattened, ridged, with short, stiff hairs.

Habitat: **S** - shallow water, floodplains, swamps, wet hammocks.

Distribution: throughout Florida.

Flowering:





Monanthochloe littoralis **Gramineae**
Key Grass, Shore Grass

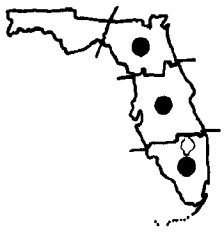
Perennial **herb**, usually bending down or creeping, often forming mats, sometimes with aboveground runners, occasionally erect, to 2 ft. tall; **leaves**: short, ¼-½ in. long, rolled, 1/16 in. wide, stiff, clustered, arranged on opposite sides of the short branches, so that the branches appear flattened; **seedheads**: 3- to 7-flowered, in axils of leaves, not easily seen; **flowers**: unisexual, M/F; elliptic, male ¼-5/16 in. long, female 5/16-⅜ in. long; **fruit**: ¼ in. long, elliptic.

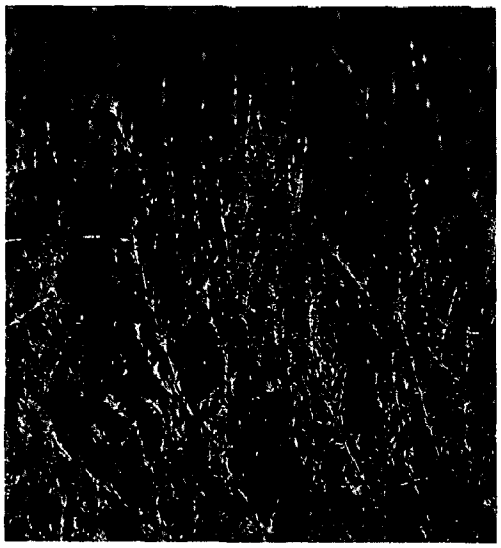
Recognition: grass with short, stiff, rolled, bunched leaves flattened on opposite sides of a short branch.

Habitat: S - marl, limestone and salt flats and salty shores.

Distribution: throughout coastal peninsular Florida.

Flowering:





Muhlenbergia capillaris **Gramineae**
Gulf Muhly

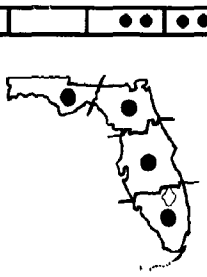
Perennial **herb**, to 4½ ft. tall, in clumps; **leaves**: rolled, 8-34 in. long, 1/16-3/16 in. wide, sandpapery on top, smooth underneath; **seedheads**: 9-12 in. long, branches many and spreading, extremely fine with flowers at tips; **flowers**: at tips of very thin branches, 1/8-1/4 in. long, brown, with thin hair extended from tip; **fruit**: 1/16 in. long, elliptic, purplish.

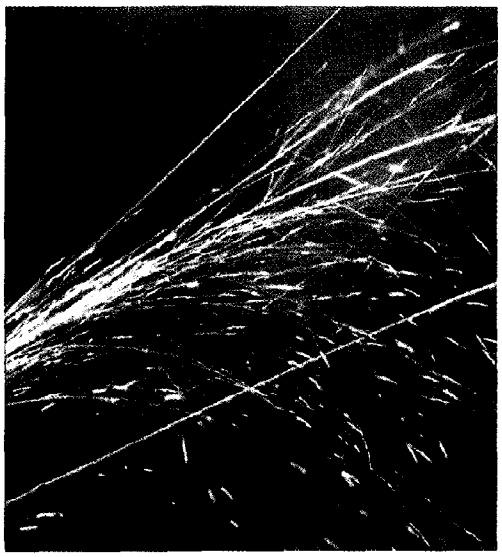
Recognition: grass growing in clumps, with narrow, rolled blades, pointed projection at top of sheath; seedheads large, with many, spreading, hairlike branches; flowers at tips of branches.

Habitat: S - low flatwoods, coastal strand, cypress swamps.

Distribution: throughout Florida.

Flowering:





Spikelet

Muhlenbergia schreberi **Gramineae**
Nimblewill

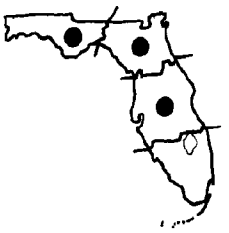
Perennial **herb**, spreading, to 2 ft. tall, often bending and rooting at the lower joints, sometimes forming aboveground runners; **leaves**: flat, 1½-3 in. long, 1/16-3/16 in. wide, sandpapery to smooth on both surfaces; **seedheads**: 2-5 in. long, narrow and spikelike with branches pressed against the spike, frequently bending; **flowers**: slightly more than 1/16 in. long, clustered along spike, green, thin hair extended from tip; **fruit**: 1/16 in. long, elliptic, reddish.

Recognition: grass with spreading stems often bending and rooting at the lower joints, sometimes with aboveground runners; leaves flat; seedheads long, narrow and spikelike; flowers green with thin hair extended from tips.

Habitat: S - low moist woods, floodplains, pond margins.

Distribution: north and central Florida.

Flowering:



Spikelet

Panicum gymnocarpon **Gramineae**
Savannah Panicum

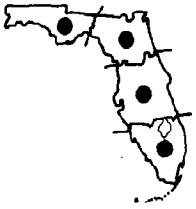
Annual or weak perennial **herb**, erect, usually about 3 ft. tall, but may reach 6 ft., bending and rooting at the lower joints, aboveground runners can be quite long; **leaves**: flat, 8-14 in. long, 5/16-1 1/8 in. wide, smooth on both sides; **seedheads**: 4-18 in. long, broad, branches spreading upwards; **flowers**: 1/4-3/8 in. long, pressed along branches; **fruit**: slightly longer than 1/16 in., ovoid, tan or brown.

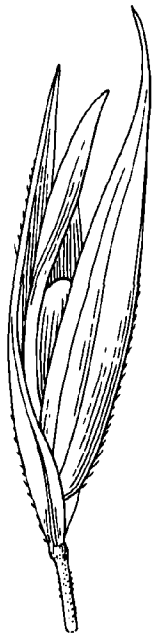
Recognition: large grass bending and rooting at the lower joints, aboveground runners; leaves broad and flat; seedheads to 18 in. long with spreading branches; flowers pressed along the branches.

Habitat: S - marshes, floodplains, swamps, ditches and shores; usually requiring soil with high organic content.

Distribution: throughout Florida.

Flowering:





Spikelet

Panicum hemitomon **Gramineae**
Maidencane

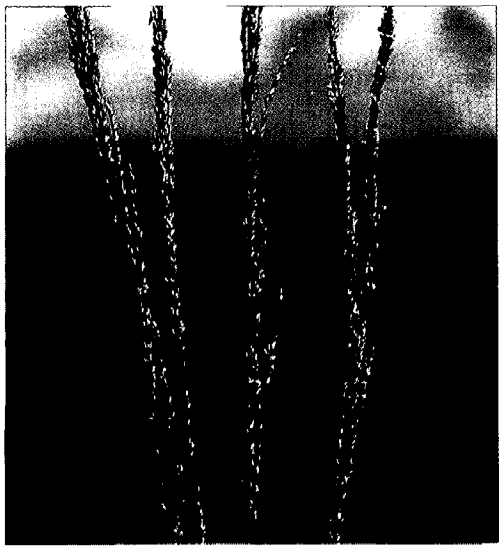
Perennial **herb** from underground runners, erect or leaning and sometimes rooting at the lower joints, up to 6 ft. tall; **leaves**: flat or sometimes folded, 5-12 in. long, ½-⅞ in. wide, usually smooth on both sides but sterile immature plants may have very hairy leaves; **seedheads**: 4-12 in. long, narrow, the branches pressed to the central stalk; **flowers**: 1/16-⅛ in. long, smooth, pressed against the branches, green; **fruit**: slightly longer than 1/16 in., elliptic, tan, smooth.

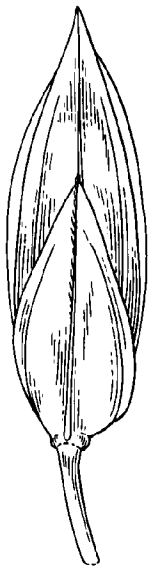
Recognition: perennial grass from extensive underground stems; submersed joints produce feathery roots; flat, wide, smooth leaves; seedheads narrow and spikelike, branches pressed to central stalk.

Habitat: S - any wet areas, tends to spread landward by means of the long underground runners.

Distribution: throughout Florida.

Flowering:





Spikelet

Panicum repens **Gramineae**
Torpedo Grass

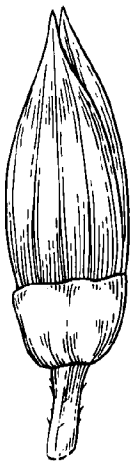
Perennial **herb** to 3 ft. tall, erect or leaning, from long underground rhizomes, tips of underground rhizomes hard with torpedo-like points; **leaves**: rolled, but often flat on young stems, 2-10 in. long, 1/16-1/4 in. wide, hairs on upper surface, young leaves on sterile shoots hairy on both surfaces and on the leaf sheath; **seedheads**: 3-9 in. long, branches pointed sharply upwards; **flowers**: 1/16-1/8 in. long, smooth, pressed individually along branches; **fruits**: 1/16 in. long, elliptic, light tan, smooth.

Recognition: perennial grass from extensive underground rhizomes; underground rhizome tips torpedo-like, hard, pointed; leaves rolled, with hairs on upper surface; seedheads branched sharply upwards; flowers pressed individually along branches.

Habitat: T - ponds, lakes, ditches, marshy shores, canals.

Distribution: throughout Florida.

Flowering:



Spikelet

Panicum rigidulum **Gramineae**
Redtop Panicum

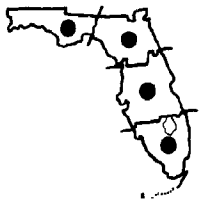
Perennial **herb** to 5 ft. tall, erect, clumped, roots short and knotty; **leaves**: usually flat, rarely rolled, 8-30 in. long, ¼-⅝ in. wide, smooth or occasionally hairy on both surfaces; **seedheads**: 4-10 in. long, branches pressed to center or spreading widely; **flowers**: 1/16-⅛ in. long, smooth, usually densely clustered along branches, one to several fine hairs at tip of flower stalklet; **fruit**: 1/16 in. long, elliptic, light tan, smooth.

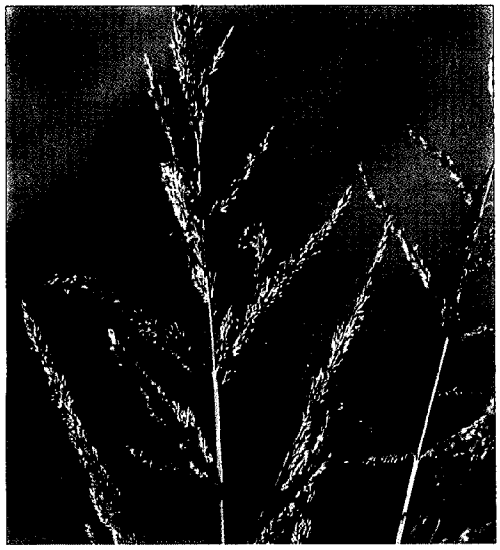
Recognition: clumped grass with hard, short knotty roots; leaves flat; seedheads with pressed to widely spreading branches; one to several fine hairs at tip of flower stalklet; flowers densely clustered along branches.

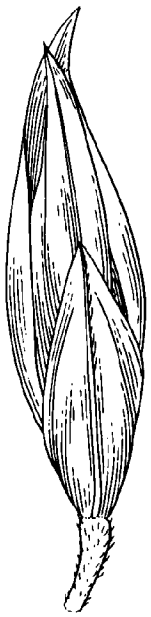
Habitat: S - all moist to wet areas.

Distribution: throughout Florida.

Flowering:







Spikelet

Panicum virgatum **Gramineae**
Switch Grass

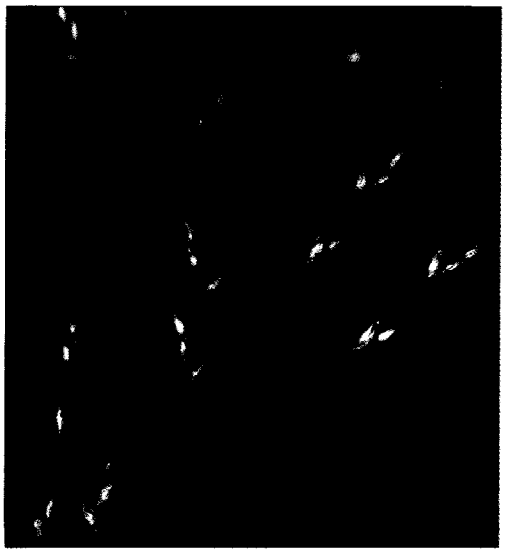
Perennial **herb** to 7 ft. tall, bunched with underground rhizomes; **leaves**: flat, 4-22 in. long, ⅜-⅞ in. wide, smooth on both sides or occasionally with long hairs at the base on the top side; **seedheads**: 6-24 in. long, branches spreading; **flowers**: ⅛-¼ in. long, first scale pointing outward, dense along branches; **fruit**: 1/16 to almost ⅛ in. long, elliptic, grayish white, smooth.

Recognition: bunched grass with dark, scaly underground rhizomes; leaves flat and smooth; seedheads large and spreading; most flowers with first scale pointing outward.

Habitat: T - marshes, prairies, low flatwoods, shores, ditches, banks of streams, drier pinewoods.

Distribution: throughout Florida.

Flowering:



Spikelet

Paspalum distichum **Gramineae**
Knot-grass, Seashore Paspalum, Thompson Grass

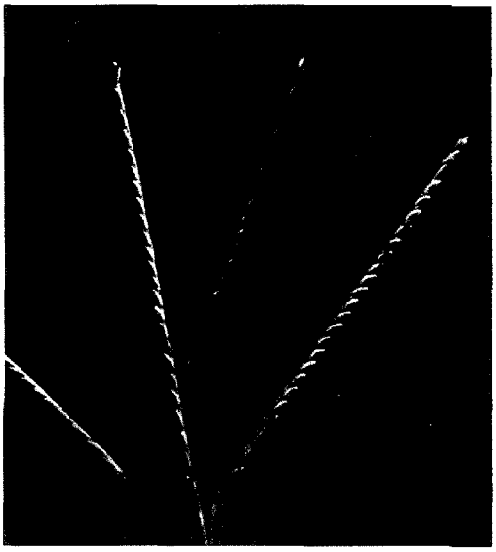
Perennial **herb** to 20 in. tall, erect and leaning at base with aboveground runners; **leaves**: folded or flat, 2½-6 in. long, 1/16-½ in. wide, smooth on both surfaces, long hairs on margins at base of blade; **seedheads**: usually 2 (rarely 1 or 3) spreading branches at top of stem, branches ⅝-2½ in. long, flowers on lower side only; **flowers**: ⅛-3/16 in. long, flat, dense along underside of branch; **fruit**: ⅛ in. long, flat, rounded, white, smooth.

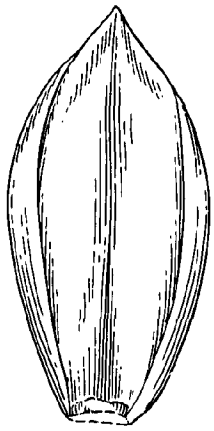
Recognition: low, running perennial grass usually with folded leaves; membranous tissue inside base of leaf blade; seedheads with 2 branches from the same point at the top of the stem; flowers only on lower side of branch, dense.

Habitat: S - wet shores of ponds, streams, wet prairies, low wet areas.

Distribution: throughout Florida.

Flowering:





Spikelet

Paspalum repens Gramineae
Water Paspalum

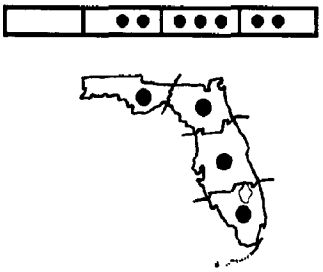
Annual **herb** usually less than 16 in. tall, but can be up to 24 in. tall, leaning at base or submersed and floating, does not run along ground, but does lean down and form long stems which root at the joints, stems spongy, thick; **leaves**: flat, 3-10 in. long, 3/16-1 1/8 in. wide, sandpapery on both surfaces; **seedheads**: 3 1/2-8 in. long, with 20-60 branches, branches 1-4 in. long, dense, spreading, sometimes curved, 1/16-1/8 in. wide, flowers on lower side only; **flowers**: 1/16 in. long with tiny hairs, flat, dense along underside of branch; **fruit**: less than 1/16 in. long, flat, elliptic, white, smooth.

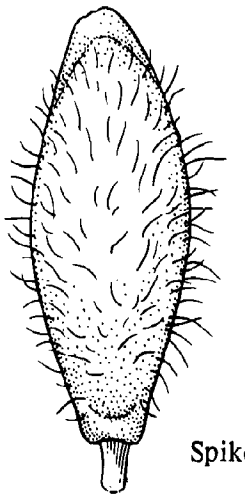
Recognition: grass with spongy, thick stems, bending and rooting at the joints, usually floating or in mud; leaf blades broad and flat, sandpapery on both sides; seedheads densely branched; flowers on lower side of branches, tiny, hairy, dense.

Habitat: S - mud of moist areas around water or floating in still water.

Distribution: peninsular Florida and west to Jackson County.

Flowering:





Spikelet

Phragmites australis **Gramineae**
Giant Reed, Common Reed

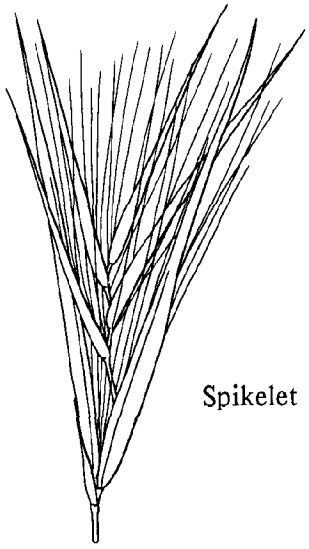
Perennial **herb** to 16 ft. tall with extensive underground and aboveground runners forming large colonies, erect stems and runners thick; **leaves**: flat, 9-25 in. long, ½-1¼ in. wide, smooth above and below; **seedheads**: large, 11-28 in. long, 6-10 in. wide, branches erect, spreading; silvery, silky beard of hairs at base of seedhead; **flowers**: ⅜-⅝ in. long, hairy; **fruit**: 1/16 in. long, elliptic, rough, reddish-brown.

Recognition: grass with erect stems to 16 ft. tall; extensive, thick underground and aboveground runners; seedhead dense, 1-2 ft. long, terminal on stem and with spreading, erect branches; silky beard of hairs at base of seedhead; flowers silvery hairy.

Habitat: S - marshes, shores of streams, lakes, canals, etc.; sometimes brackish or salty.

Distribution: throughout Florida.

Flowering: especially



Spikelet

Schizachyrium rhizomatum **Gramineae**
(*S. scoparium* var. *rhizomatum*, *S. stoloniferum*)
South Florida Bluestem

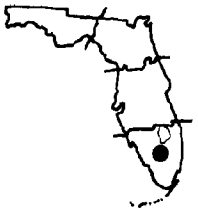
Perennial **herb** to 3 ft. tall with short scaly runners, erect; **leaves**: usually folded, 4-18 in. long, 1/16-1/8 in. wide, smooth; **seedheads**: 1 branch, 3/4-1 5/8 in. long, thin, hairy, curved, zigzag, on long thin stalk; **flowers**: overlapping along branch, 1/4-3/8 in. long with a hair 1/8-3/8 in. long at the tip; **fruit**: 3/16 in. long, elliptic, smooth, purplish.

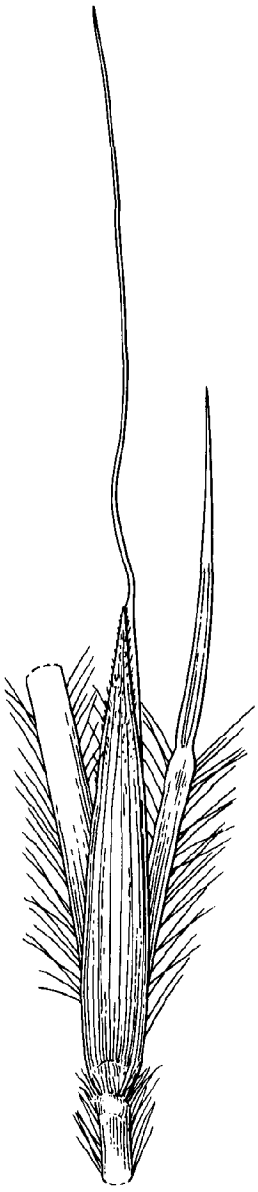
Recognition: erect grass with short scaly runners; leaves very narrow and folded; seedhead with one branch, thin, hairy, curved, zigzag on long thin stalk; flowers overlapping along branch with long thin hair at the tip.

Habitat: T - wet prairies, glades and pits in limerock.

Distribution: south Florida.

Flowering:





Spikelet

***Spartina* spp.** **Gramineae**
Cordgrasses

Perennial **herbs**, 3-12 ft. tall, erect, in clumps or creeping with underground runners; **leaves**: blades long, tough, flat to rolled; leaf sheaths longer than joints of the stem, overlapping; **seedheads**: with 2-many branches either spreading or appressed to stalk: **flowers**: in 2 rows on lower side of branches, flattened, often twisted, often appressed to branch, branch tips without flowers; **fruit**: 1/8-5/16 in. long, flattened.

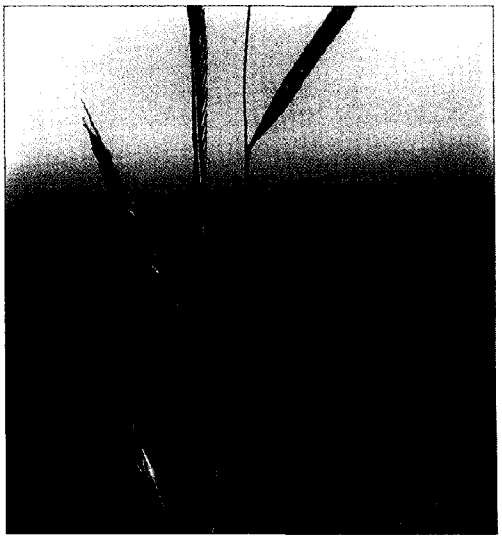
Five species: *S. alterniflora*, *S. bakeri*, *S. cynosuroides*, *S. patens*, *S. spartinae*.

Recognition: grass with erect stems in clumps or from underground runners; leaf sheaths longer than joints of the stem, overlapping; flowers only on the lower side of branches, flattened, in 2 rows, often twisted, appressed.

Habitat: S (except *S. bakeri*, p. 98) - beaches, brackish and saline marine and estuarine marshes, flats and barrens.

Distribution: throughout Florida, especially coastal.

Flowering:



Spartina bakeri **Gramineae**
Cordgrass

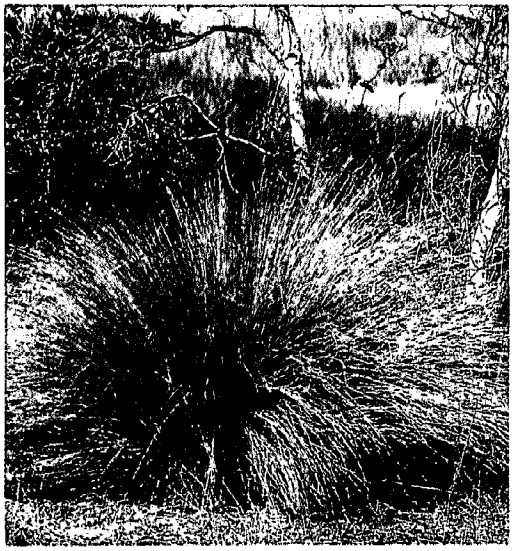
Perennial **herb**, 4-6 ft. tall, in clumps from knotty roots; **leaves**: rolled to somewhat flattened, 7-31 in. long, 1/8-5/16 in. wide, sandpapery on the upper surface; **seedheads**: 3-7½ in. long, 3 to 14 branches, flowers only on lower side of branches, branches appressed upwards to stem; **flowers**: 1/8-7/16 in. long, rough to touch on edges, flattened, appressed to branches; **fruit**: 3/16 in. long, light brown, flattened.

Recognition: large, erect clump-forming grass to 6 ft. tall; without runners; leaves rolled and pointed; leaf sheaths longer than joints, overlapping; seedhead with branches appressed upwards; flowers only on lower side of branches.

Habitat: T - brackish and saline marshes, flats and barrens, prairies, shores and disturbed wet areas.

Distribution: throughout Florida, more frequent in the peninsula.

Flowering:



Sporobolus virginicus **Gramineae**
Seashore Dropseed

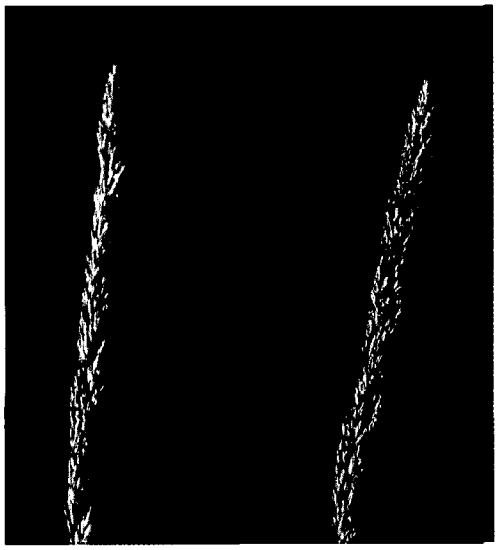
Perennial **herb**, erect, to 20 in. tall, stems single or in clusters from long, yellowish, underground runners; **leaves**: flat to rolled, 1-6 in. long, 1/16-1/4 in. wide, upper surface sandpapery and with longer hairs near base, lower surface smooth, arranged on opposite sides of stem so that plant appears flat when viewed from above (2-ranked), leaf sheaths with few scattered hairs along upper margins; **seedheads**: 1-4 in. long, branches appressed upwards, tan to gray; **flowers**: 1/16-1/8 in. long, dense, smooth, shiny, tan to gray; **fruit**: 1/32 in. long, rough, reddish-orange.

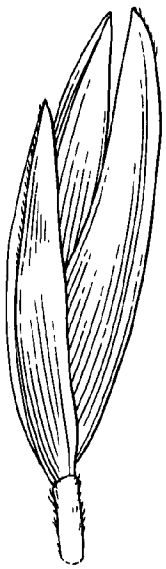
Recognition: grass with erect stems from long, yellowish, underground runners; leaves arranged on opposite sides of stem so that plant appears flat when viewed from above; leaf sheaths with few scattered hairs along upper margins; hairs on inside at base of blade; seedheads tan to gray with upwardly appressed branches.

Habitat: S - beaches, marine and estuarine marshes, flats and barrens.

Distribution: throughout coastal Florida.

Flowering:





Spikelet

Zizania aquatica **Gramineae**
Annual Wild Rice

Annual or perennial **herb** to 10 ft. tall, stems bending down and forming roots at the joints that touch the ground, stems thick; **leaves**: flat, 6-38 in. long, ⅜-2 in. wide, smooth on both surfaces; **seedheads**: large, 18-27 in. long, 6-15 in. wide, uppermost branches appressed, lower branches spreading; **flowers**: unisexual, female on upwardly appressed branches at top of seedhead, appressed to branches, ⅜-1 in. long with ⅛-½ in. long hair from tip; male hanging from lower spreading branches of seedhead, ¼-½ in. long with or without a hair from tip to ⅛ in. long; **fruit**: ⅜-⅞ in. long, linear, gray-green to reddish-brown.

Recognition: grass with large, thick stems to 10 ft. tall; large broad flat leaves to 3 ft. long; seedheads 2 ft. long and 1 ft. wide with uppermost branches appressed upwards with appressed female flowers, lower branches spreading with hanging male flowers.

Habitat: S - usually in standing water, marshes and marshy shores.

Distribution: north and northern central Florida

Flowering: , especially

Zizaniopsis miliacea **Gramineae**
Southern Wild Rice

Perennial **herb** to 10 ft. tall from thick underground runners, stems thick, somewhat flattened; **leaves**: flat, usually 18-30 in. long, 3/8-1 3/8 in. wide, smooth on both surfaces; **seedheads**: large, 24-30 in. long, 4-5½ in. wide, branches spreading; **flowers**: unisexual, female toward the tip of the branch, ¼-5/16 in. long with 1/16-¼ in. long hair from tip; male toward the base of the branch, ⅛-⅜ in. long with 1/32 in. long hair from tip; **fruit**: ⅛-1/16 in. long, oval, yellowish.

Recognition: grass with large, thick, flattened stems to 10 ft. tall with thick underground runners; large, broad, flat leaves to almost 3 ft. long; seedheads 2 ft. long and 5 in. wide with spreading branches; female flowers toward the tip of the branch and male flowers toward the base of the branch.

Habitat: S - usually in standing water, marshy shores and alluvial banks, sometimes brackish.

Distribution: throughout Florida.

Flowering:

Lachnanthes caroliniana **Haemodoraceae**
Red-root

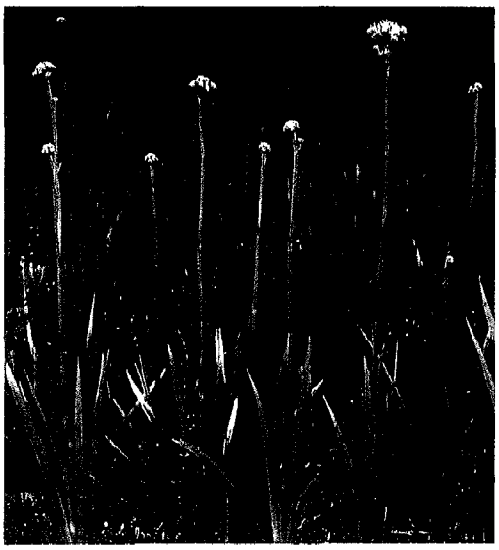
Perennial **herb** with red-orange rhizome and roots; **leaves**: swordlike, erect, gradually tapering, laterally flattened; inflorescence terminal, hairy; **flowers**: with 3 outer and 3 inner petals, the inner petals yellow, woolly, 3 stamens; **fruit**: a capsule, with flat, brown seeds.

Recognition: herb with bright red-orange roots, laterally flattened leaves and a fuzzy, branching flower cluster; the related genus *Lophiola* has much smaller flowers with 6 stamens, and the inflorescence is more loosely branched.

Habitat: T - wet ditches, bogs, swamps, savannas, low pine flatwoods.

Distribution: throughout Florida.

Flowering:



Egeria densa **Hydrocharitaceae**
Waterweed, Brazilian Waterweed

Submersed perennial herb, either rooted, or pieces drifting in water; stems slender, with few branches; leaves: opposite or (usually) with 3-6 leaves at the same level; leaves straplike ¾-1¼ in. long, with very fine marginal teeth (not evident without a lens); flowers: unisexual, M/F, only male plants known in Florida; flowers from upper part of plant, flower stalk elongating to bring flowers to surface; sepals 3, green, petals 3, white, rounded, ¼-⅜ in. long, stamens 9.

Recognition: herb with narrow leaves, 3 to 6 at the same level, smooth, strap-shaped, dense.

Habitat: S - streams, ponds and lakes.

Distribution: not native; peninsular Florida and west to Leon County.

Flowering:

***Elodea* sp.** **Hydrocharitaceae**
Waterweeds, Elodeas

Submersed perennial **herb**, either rooted or pieces drifting in water; stems slender, with few branches; **leaves**: alternate, opposite, or usually with 3-7 at each level, strap-shaped or oblong, 1-veined, margins finely toothed (not evident without a lens); **flowers**: unisexual, M/F, male flowers with 3 sepals, 3 petals and 3-9 stamens, long-stalked or breaking free and floating to the surface; female flowers with a long floral tube, reaching the surface; **fruit** a capsule with several seeds.

One species reported from Florida, *E. canadensis*.

Recognition: herb with narrow leaves, 3-7 at the same level, strap-shaped, smooth, dense, but not so dense as in *Egeria*.

Habitat: S - springs, lakes, ponds and streams.

Distribution: not native; commonly used in aquaria, and occasionally introduced in Florida.

Flowering: no information for Florida.

Hydrilla verticillata **Hydrocharitaceae**
Hydrilla

Submersed perennial **herb**, either rooted or pieces drifting in water; stem slender, branched, up to 25 ft. long in still waters; **leaves**: mostly 4-8 at a joint, straplike, pointed, distinctly saw-toothed (visible without lens), 1-veined, the vein keeled beneath and usually bearing one or more sharp teeth; leaves to about ⅝ in. long; **flowers**: unisexual, M/F, arising from axillary sheaths; male flowers breaking free and floating on surface; female flowers (not known in Florida) borne near branch-tips, sheath about as long as leaf, flower with translucent tube 1½-2 in. long, with 6 petals in 2 series; **fruit**: not known in Florida.

Recognition: herb with whorled, strap-shaped leaves, with visible teeth on the margin; at least 1 sharp tooth on lower midvein on non-flowering stems; stems usually with long bare sections between joints; teeth on leaves usually make plant rough to touch.

Habitat: S - streams, ponds, lakes, canals.

Distribution: not native; a serious pest throughout Florida.

Flowering:

Leaf

Limnobium spongia **Hydrocharitaceae**
Frog's Bit

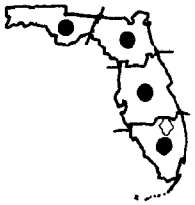
Aquatic perennial **herb**, spreading by runners, younger plants floating, with heart-shaped leaves at surface of water, such leaves are thickened by spongy air tissue below; older (flowering) plants are generally rooted in mud: **leaves**: thin, long-stalked; stalk up to 6 in. long, blade ovate or subcircular, to about 2¾ in. long and wide, the base notched or not, tip blunt or rounded; **flowers**: unisexual, solitary from leaf axils, much shorter than the leaves; sepals 3, petals 3, narrow and white; stamens 6-12; **fruit**: a many-seeded berry; seeds minutely spiny; fruit stalk curling downward into water.

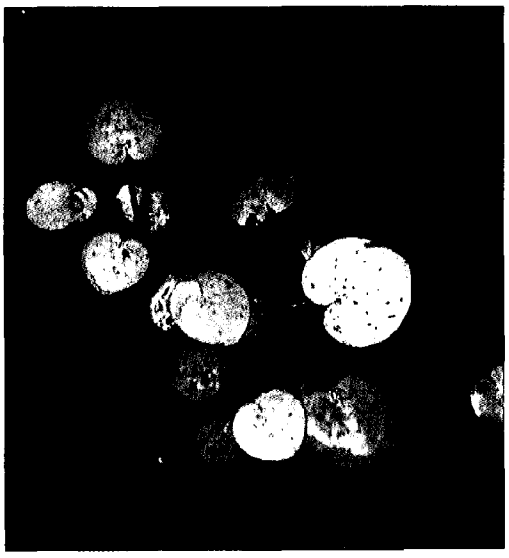
Recognition: juvenile plants are generally free-floating; mature plants resemble *Pontederia* or *Eichhornia*, but are smaller and do not have swollen leaf stalks; both fruit and flower are solitary and borne on short stalks.

Habitat: S - shallow still water or marshy borders, ponds, lakes, lagoons, ditches, drainage canals, swamps.

Distribution: peninsular Florida and west to Leon County.

Flowering:





Thalassia testudinum **Hydrocharitaceae**
Turtle-grass

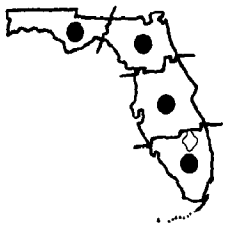
Marine perennial **herb**, with stout, branched runner, with short vertical shoots at intervals; **leaves**: several on each shoot, 2-ranked, sheathing at base, straplike, about 5/8 in. wide, to 14 in. long, tip rounded, upper margins finely toothed; **flowers**: unisexual, M/F, arising from a sheath near base of shoot; sepals 3, straplike, male flowers with 6-9 stamens; **fruit**: spherical, about 3/4 in. across, rough-warty, opening by 5-8 valves.

Recognition: submersed marine herb with broad, ribbonlike leaves; short stem from runners covered by old leaf sheaths.

Habitat: **DNR** - forming submersed meadows in saline to brackish waters up to about 12 ft. deep.

Distribution: throughout coastal Florida.

Flowering:



***Vallisneria* spp.** **Hydrocharitaceae**
Tape-grasses, Eel-grasses, Water-celeries

Submersed perennial **herb**, spreading by runners, **leaves**: alternate, densely clustered, straplike, varying in width and length; **flowers**: unisexual, M/F; male flowers short-stalked, with a sheath enclosing many small flowers with 3 sepals and 2 anthers; male flowers break free and float to surface; female flower long-stalked, reaching surface, where pollination may occur; **fruit**: a slender, banana-like capsule with many tiny seeds; stalk may curl after flowering, pulling the fruit into the water.

One highly variable species, *V. americana*, whose leaf size and form is affected by growth conditions.

Recognition: submersed plant with ribbonlike leaves; leaves show definite veining with some cross-veins in the mid portion, while the edges are free of veins; roots unbranched.

Habitat: S - in both still and swiftly flowing waters, primarily alkaline.

Distribution: throughout Florida.

Flowering:

Iris hexagona **Iridaceae**
Anglepod Blue Flag, Prairie Iris

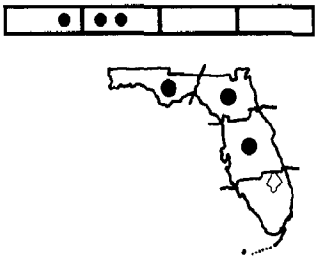
Perennial **herb** to 4 ft. tall, from stout rhizome, **leaves**: erect, several, narrow and swordlike, pointed, laterally flattened, to 30 in. long; inflorescence erect, about equal to the leaves, with 1-3 flower clusters, each at a joint (or stem-tip) with a leaflike bract and smaller sheathing bracts, stem zigzag; **flowers**: purple-blue, sepals 3-3¼ in. long, oval or oblong, each one with a yellow hairy crest along the base; petals 2¾-3 in. long, with a narrow base; **fruit**: a capsule 2-3 in. long, with 3 rounded angles, seeds many, flattened.

Recognition: a tall, blue-flowered iris with at least the lowest inflorescence bract quite long (usually reaching the uppermost flower) and with stem of inflorescence somewhat zigzag.

Habitat: S - swamps, drainage ditches and canals, ponds, cypress prairies, wet swales and marshy shores.

Distribution: north and central Florida.

Flowering:



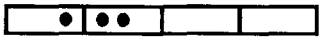
Iris virginica **Iridaceae**
Southern Blue Flag

Perennial **herb** to 4 ft. tall, from a stout rhizome; **leaves**: erect, but not stiff, 24-32 in. long, about 1 in. wide; inflorescence 20-40 in. tall, often falling after flowering, with 1-3 flower clusters with short leaflike bracts and straight stem; **flowers**: pale blue to purple; sepals 3, spreading and arched 2¾-4 in. long, obovate to oval; petals broad above and narrow at the base, about ⅔ as long as sepals; **fruit**: a capsule 1-2¼ in. long, usually angled, with many flattened seeds.

Recognition: similar to *I. hexagona*, but inflorescence stem straight rather than zigzag and bracts much shorter.

Habitat: S - commonly in shallow water, marshes, marshy shores, swamps, sloughs, ditches and canals, wet areas in pine savannas and flatwoods.

Distribution: north Florida south to Taylor and St. John's Counties.

Flowering: 

***Juncus* spp.** **Juncaceae**
Bog Rushes, Rushes

Annual or (in most species) perennial, grasslike **herbs**, usually from rhizome, often clump-forming, sometimes colonial; **leaves**: cylindrical or flattened, with sheaths at bases; inflorescence stalked, usually branched, with or without leaflike or stemlike bracts; simple or compound, dense or open; **flowers**: small, green to brown or reddish, with 6 sepals and 3 or 6 stamens; **fruit**: a capsule with many small seeds.

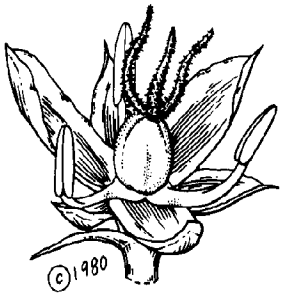
Twenty species.

Recognition: grasslike herb with generally cylindrical stems; fruit a 3-chambered capsule containing many tiny seeds.

Habitat: S - saline or freshwater marshes, swamps, shores, meadows, sloughs, wet forests, wet roadsides, ponds, streams.

Distribution: throughout Florida.

Flowering:



Flower

***Lemna* spp.** **Lemnaceae**
Duckweeds

Small, floating plants, with no clear distinction between leaf and stem; "**leaves**:" ovate or oblong, usually floating at surface (the upper surface resisting wetting), except in *L. trisulca*; 2-several (older and younger) leaves usually attached to each other; each leaf with 1 slender root on underside; **flowers**: very tiny, rarely formed.

Four species: *L. minor*, *L. perpusilla*, *L. trisulca*, *L. valdiviana.*

Recognition: *Lemna* "leaves" each bear a single root on the underside, and are usually shoe-shaped.

Habitat: S - sluggish or still waters, often covering stagnant ponds.

Distribution: throughout Florida.

Flowering: seldom seen in flower.

(note rice grain for size)

***Spirodela* spp.** **Lemnaceae**
Duckmeat, Giant Duckweeds

Small, floating plants, with no clear distinction between leaf and stem; "**leaves**:" ovate, oblong or broadly elliptic, 1/32-5/16 in. long and nearly as wide, floating at surface (upper surface resists wetting), usually 2-3 connected; each leaf with several slender roots attached beneath; **flowers**: very tiny, rarely formed.

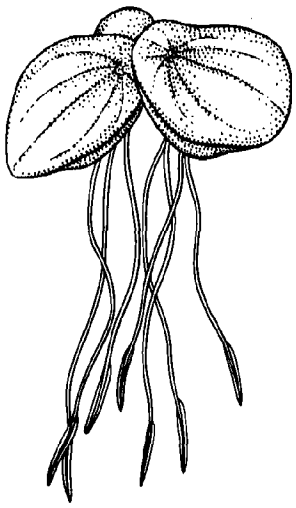
Two species: *S. polyrhiza*, with "leaf" broadly obovate to nearly ovate, usually with red dot in center; 5-20 roots; and *S. punctata*, with narrowly ovate or kidney-shaped "leaves," usually without red dot; 2-5 roots.

Recognition: small ovate, floating plants, each "leaf" has several roots.

Habitat: S - sluggish and still waters.

Distribution: throughout Florida.

Flowering: seldom seen in flower.



Habit (side view)

***Wolffia* spp.** **Lemnaceae**
Water-meals

Tiny, floating, rootless plants, less than 1/16 in. long; ellipsoid to ovoid, often a larger and a smaller (younger) "leaf" connected; body somewhat flattened or crested above; **flowers**: tiny, rarely seen.

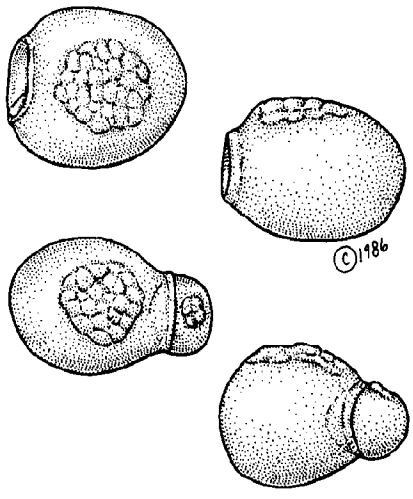
Two species: *W. papulifera*, upper surface of "leaf" with a conelike bump, and *W. punctata*, with a flat-topped hump.

Recognition: floating plant, very tiny, no larger than a pinhead, rounded, about as thick as wide, without roots.

Habitat: S - sluggish water, sometimes forming a solid, green layer at surface, but usually mixed with *Lemna* or *Spirodela.*

Distribution: north and central Florida.

Flowering: seldom seen in flower.



Habit (side and top views)

***Wolffiella* spp.** **Lemnaceae**
Bog-mats

Tiny, floating plants, without roots, without distinction between leaf and stem; "**leaves**:" strap- or tongue-shaped, flattened, 2-several commonly attached; all surfaces wettable (floating under surface film); **flowers**: tiny and rarely seen.

Three species: *W. gladiata*, with tip of "leaf" blunt, *W. floridana*, with broad base and abruptly pointed tip, and *W. oblonga*, with long, gradually tapering tip.

Recognition: tiny, thin, flattened, strap- or tongue-shaped plant without roots; floating just under water surface.

Habitat: S - sluggish waters, commonly mixed with *Lemna* or *Spirodela*.

Distribution: throughout Florida.

Flowering: seldom seen in flower.

***Aletris* spp.** **Liliaceae**
Colic-roots, Star-grasses

Perennial **herb** with short rhizome; **leaves**: clustered around base of plant, sessile, linear-elliptic, elliptic or lanceolate; inflorescence narrow, stalked, with scattered bracts on the stalk; **flowers**: short-stalked, numerous, petals white or yellow, united, with 6 lobes; stamens 6; **fruit**: a beaked capsule with many small seeds.

Four species: *A. aurea*, *A. farinosa*, *A. lutea*, *A. obovata*.

Recognition: herb with a narrow, dense inflorescence of yellow or white, tubular or bell-shaped flowers above a basal leaf cluster.

Habitat: T - pine savannas and flatwoods, roadside ditches and banks, bogs.

Distribution: throughout Florida.

Flowering:

Smilax laurifolia **Liliaceae**
Bamboo-vine, Blaspheme-vine

Woody **vine** from thick rhizome, with potato-like storage structures, stems up to ⅝ in. thick, with many stout thorns; **leaves**: evergreen, alternate, short-stalked, the blades thick and leathery, with prominent midvein, usually oblong, rounded at bases, tip rounded but with a tiny point, sometimes lanceolate or lance-elliptic and tapering above and below, or broadly oval to subcircular; **flowers**: unisexual, M/F, in stalked clusters; male flowers with 6 sepals and 6 stamens; **fruit**: a shiny black berry, requires two seasons to mature.

Recognition: climbing vine with thorny stems to ⅝ in. thick; thick, leathery, usually oblong leaves with midvein prominent at base; black berries.

Habitat: S - swamps and marshy stream banks, often forming dense tangles.

Distribution: throughout Florida.

Flowering:

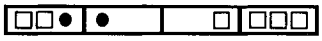
Smilax walteri **Liliaceae**
Coral Greenbriar

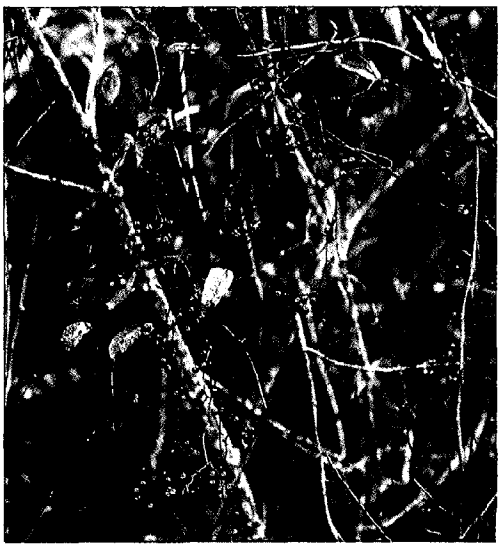
Woody **vine**, from slender rhizome, with potato-like storage structures; stem slender, climbing to 15 or 20 ft., more or less angled, with few thorns; **leaves**: deciduous, short-stalked, broadly ovate to lance-ovate, rounded at bases, tapering to a pointed tip; **flowers**: unisexual, M/F, in short-stalked cluster, male with 6 petals, 6 stamens; **fruit**: a bright red berry.

Recognition: climbing vine with slender, thorny stem; leaves usually ovate to lance-ovate, firm; red berries.

Habitat: S - swamps, usually in water.

Distribution: north and northern central Florida.

Flowering: 



Thalia geniculata **Marantaceae**
Arrowroot, Fireflag

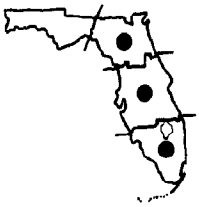
Large perennial **herb**, from a thick rhizome; **leaves** from base, alternate, long-stalked, the stalk sheathing at base, blades 12-32 in. long, to 8 in. wide, broadly lanceolate or ovate-lanceolate, somewhat asymmetrical; inflorescence: tall, branching, zigzag; **flowers**: paired, each pair with 2 bracts, sepals 3, petals 3, purple, unequal, with petallike sterile stamens and 1 fertile stamen; **fruit**: about ¼ in. across, ovoid, 1-seeded.

Recognition: herb with zigzag stem; large, ovate-lanceolate leaves with many spreading lateral veins; leaves jointed and usually broadly rounded at base.

Habitat: S - ponds, wet ditches, swamps, stream banks, marshes.

Distribution: peninsular Florida.

Flowering:



***Najas* spp.** **Najadaceae**
Water Naiads

Submersed **herbs**, usually rooting at base; stems slender, much branched; **leaves**: opposite, with sheathing bases, very narrow or narrowly lanceolate; with tiny, sharp teeth; **flowers**: very small, axillary, unisexual, sometimes M/F, without sepals or petals, male flower of 1 stamen, female flower of ovary with 2-3 stigmas; **fruit**: a single seed in a thin fruit coat.

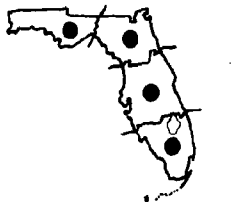
Five species: *N. ancistrocarpa* (not native), *N. guadalupensis*, *N. marina*, *N. minor*, *N. wrightiana*.

Recognition: herb; narrow, opposite leaves with definite teeth, these very prominent in *N. maritima*, less so in other species.

Habitat: S - lakes, ponds, springs, streams, ditches, brackish or fresh.

Distribution: throughout Florida.

Flowering:



Habenaria repens **Orchidaceae**
Water-spider Orchid, Floating Orchid

Perennial **herb**, 4-25 in. tall, spreading by runners; **leaves**: scattered along lower stem, narrowly oblong to narrowly lanceolate, pointed or tapering to a narrow point; succulent, 2-9 in. long, to about 1 in. wide; **flowers**: in a terminal raceme to 12 in. long, with few to many flowers; pale green, with 3 sepals to ¼ in. long, lateral petals each deeply divided into 2 very narrow lobes, to about ¼ in. long; lower petal (lip) deeply divided into 3 narrow lobes, to nearly ½ in. long, base of lip with a slender spur ⅜-½ in. long; with a single anther united with the short style (column), containing 2 clublike pollen masses.

Recognition: herb; greenish flowers with spur, deeply divided petals and lip; leaves along the stem (not all at base).

Habitat: S - marshy shores of lakes, ponds and streams, wet meadows, bogs, marshes, ditches and canals, often in floating mats of vegetation.

Distribution: throughout Florida.

Flowering:

Rhapidophyllum hystrix **Palmae**
Needle Palm

Shrubby **palm** with stem erect, leaning or sprawling, up to 8 ft. tall (including leaves); tip of trunk normally covered by long needle-like spines (from leaf sheaths); **leaves**: fan-shaped, stalked, without midrib, dark green above, blades 20-35 in. wide; **flowers**: small, yellowish, in dense, fleshy clusters that may be hidden among spines; **fruit**: fleshy, with a stone.

Recognition: palm; leaves fan-shaped with long, smooth leaf stalks; long, slender spines at tip of stem.

Habitat: T - wooded river bluffs, ravine slopes and rocky limestone, moist to wet floodplains of small streams, seepage areas.

Distribution: north and central Florida, very patchy.

Flowering:

Sabal minor **Palmae**
Dwarf Palmetto, Bluestem

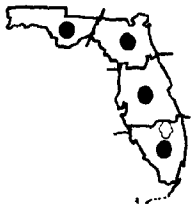
Shrubby **palm**, the stem short, usually underground; **leaves**: palmate, long-stalked to 3½ ft. wide, with only a very slight midrib (or several veins pinched together in center); blade divided into segments for ⅔ its length; inflorescence often taller than leaves, slender with branched flower clusters at intervals; **flowers**: small, creamy, with 6 petals and 6 stamens; **fruit**: fleshy, with a stone.

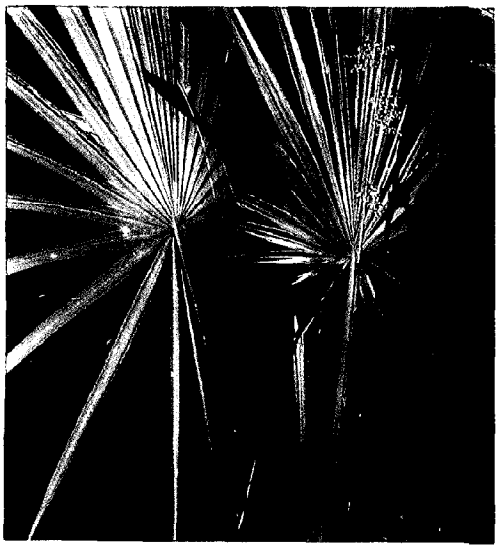
Recognition: palm; flat, fanlike leaves with only a very slight midrib; blades deeply divided into segments, tips erect; leaf stalk smooth; flower spike erect, longer than leaves.

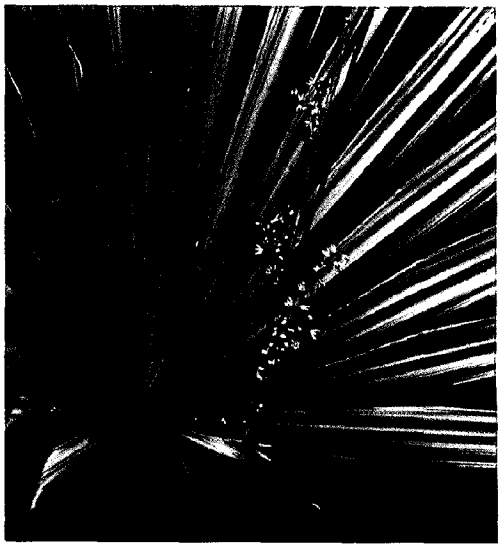
Habitat: T** - floodplain forests, commonly where flooded seasonally, swamps, rarely in upland forests.

Distribution: throughout Florida.

Flowering:







Sabal palmetto **Palmae**
Cabbage Palm, Cabbage Palmetto

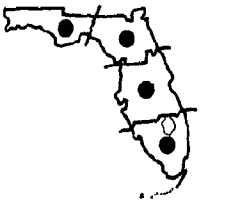
Palm tree, with stout trunk to 80 ft. tall; **leaves**: stalked, the stalk smooth; blade fanlike, but with a definite midrib that curves downward, blade to 3 ft. wide or more, divided into many segments; inflorescence about as long as leaves or longer, branched, **flowers**: many, tiny, creamy white; **fruit**: fleshy, with a stone.

Recognition: palm; leaves fanlike with downwardly curving tips; leaf stalk smooth.

Habitat: I - swamps, wet forests, stream banks, seasonally wet prairies.

Distribution: throughout Florida.

Flowering:



Eichhornia crassipes **Pontederiaceae**
Water-hyacinth

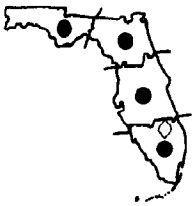
Floating aquatic **herb** (may be stranded on mud), plant spreading by short runners; **leaves**: clustered, stalked, the base of the leaf stalk inflated and more or less ovoid, with spongy air tissue within; leaf blade subcircular, ovate to broadly elliptic; inflorescence stalked, with several flowers from a bract; **flowers**: petals 6, blue, light lavender to pinkish, somewhat 2-lipped, stamens 6, of two sizes; **fruit**: a 3-celled capsule with many seeds.

Recognition: floating herb with inflated leaf bases and erect stalks bearing clusters of purplish-blue flowers.

Habitat: S - ponds, canals, streams, ditches, any still or sluggish water.

Distribution: not native; a pest throughout Florida.

Flowering:



***Pontederia* spp.** **Pontederiaceae**
Pickerelweeds

Perennial **herbs**, with creeping rhizome; **leaves**: from base, clustered, long-stalked, the blades narrowly lanceolate to (usually) ovate, with a notch at base; inflorescence a stalked raceme with a leaflike bract on stalk, base of flower cluster with small, folded bract; **flowers**: blue marked with yellow or white, 2-lipped, with 6 petals and 6 stamens of two sizes; **fruit**: 1-seeded, ridged and crested.

One species: *P. cordata.*

Recognition: herb with blue or rarely white flowers; leaves narrow to ovate on long fleshy stalks (leaf-stalks not thickened and spongy as in *Eichhornia*).

Habitat: S - marshes, streams, ditches, wet prairies, shallow water of ponds and lakes.

Distribution: throughout Florida.

Flowering:

***Potamogeton* spp.** **Potamogetonaceae**
Pondweeds

Perennial aquatic **herbs**, with slender stems, normally rooted at base; **leaves**: alternate, with sheaths, often of two types, submersed leaves thin, usually narrow or very narrow; floating leaves usually firmer and wider; inflorescence stalked, catkinlike; **flowers**: small, with tiny sepals and 4 anthers; **fruit**: 1-seeded, fleshy, with a hard crust around seed.

Ten species.

Recognition: aquatic herb with thin, narrow, alternate, submersed leaves with basal sheaths and smooth margins; often with wider floating leaves.

Habitat: **S** - fresh or saline lakes, ponds, streams, ditches and canals.

Distribution: throughout Florida.

Flowering:

Ruppia maritima **Ruppiaceae**
Widgeon-grass, Ditch-grass

Submersed **herb**, usually rooted at base; stem simple or branched; **leaves**: alternate, threadlike, to 4 in. long, with broader sheathing base to 5/8 in. long; **flowers**: unisexual, borne in leaf sheaths, male flowers of 2 stamens; female flower long-stalked; **fruit**: ovoid, on stalk up to 1¼ in. long.

Recognition: submersed herb lacking runners; short broad leaf sheath; fruit small, black, oval, long-stalked.

Habitat: **S** - brackish or saline waters.

Distribution: throughout coastal Florida.

Flowering:

Sparganium americanum **Sparganiaceae**
Bur-reed

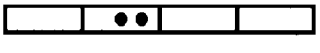
Perennial **herb**, with slender rhizomes; stems erect, 2-3 ft. tall; leafy from the base; **leaves**: alternate, in 2 ranks, bright green, straplike, about ¾ in. wide, the lower leaves much taller than the stem; leaves flat above but channeled at the midrib in lower half, thickish and spongy; inflorescence terminal, with few short branches, somewhat zigzag; **flowers**: unisexual, in compact, spherical heads in axils of bracts, the lower bracts leafy; lower heads female, burlike, upper heads male, smaller; **fruit**: a burlike cluster of nutlets, ¾-1 in. across.

Recognition: herb with long, narrow, strap-shaped leaves; burlike flower clusters and fruits.

Habitat: S - wet shores of swamps, ponds, streams, often in shallow water.

Distribution: north Florida.

Flowering:



***Typha* spp.** **Typhaceae**
Cat-tails

Perennial **herb** to 8 ft. tall, with thick rhizome; **leaves**: straplike, stiff, in 2 ranks, sheathing near base; **flowers**: unisexual, densely crowded in cylindrical, terminal spike, the male flowers above the female; **fruit**: a sausage-shaped cluster of nutlets surrounded by chaff.

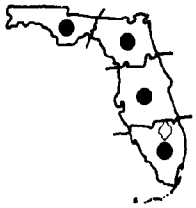
Three species: *T. angustifolia*, *T. domingensis*, *T. latifolia*.

Recognition: tall herb with straplike leaves basally all flattened in same plane; brownish cylindrical flower spike, with male spike above and narrower than female.

Habitat: S - marshes, shallow water, stream banks, ponds, wet ditches.

Distribution: throughout Florida.

Flowering:



Xyris spp. **Xyridaceae**
Yellow-eyed-grasses

Perennial **herbs** to 40 in. tall, tufted or solitary; roots fibrous but fleshy; **leaves**: at base, tufted, 2-ranked, the blades linear to laterally flattened and swordlike; inflorescence commonly much longer than leaves, stalked; **flowers**: in a conelike cluster, in axils of tightly clustered bracts; sepals 3, 2 boatlike, keeled and persistent; petals 3, unequal, yellow or sometimes white, with narrow bases; stamens 3; **fruit**: a capsule with many tiny seeds.

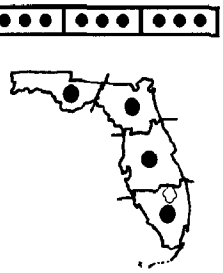
Eighteen species.

Recognition: leaves straplike, flattened in same plane; flowers yellow (rarely white), in dense conelike cluster on long stalk.

Habitat: S (except species on pp. 132, 133) - moist, acid sands, sandy peats or peats; roadside ditches, pine flatwoods, savannas, pond and lake shores.

Distribution: throughout Florida.

Flowering:



Xyris caroliniana **Xyridaceae**
Yellow-eyed-grass, Carolina Yellow-eyed-grass

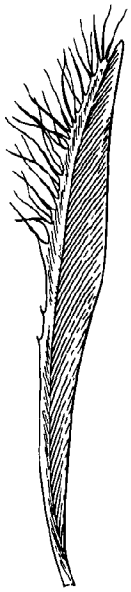
Perennial **herb**, solitary or in small tufts; **leaves**: narrow, 8-16 in. long, 1/16-3/16 in. wide, twisting, bases dark, shiny brown; inflorescence long-stalked, 18-40 in. tall, twisted, smooth or slightly roughened, cylindrical below, oval in section above, the sheath shorter than leaves; **flowers**: in dense conelike clusters, these ellipsoid to ovoid or nearly cylindrical, 5/8-1 in. long; lateral sepals with broad, fringed keel that sticks out above bracts; petals 3, yellow; **fruit**: a capsule with many tiny seeds.

Recognition: herb; leaf bases dark brown, bulbous, shiny; leaves twisted; fringe at tip of lateral sepals sticks out above bracts; inflorescence stalk usually smooth to the touch, twisted, sheath shorter than the leaves; flowers usually open in afternoon.

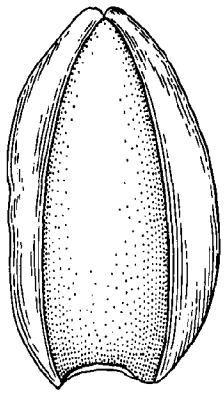
Habitat: U - moist or well-drained sands, pine flatwoods, savannas, scrub oak-pine barrens.

Distribution: throughout Florida.

Flowering:



Lateral sepal



Bract

Xyris jupicai **Xyridaceae**
Yellow-eyed-grass, Common Yellow-eyed-grass

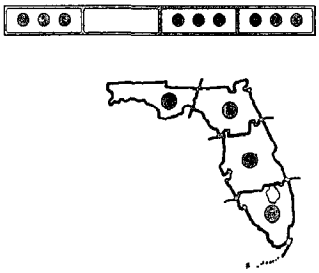
Short-lived perennial herb, solitary or in small tufts; **leaves**: swordlike, 4-25 in. long, 3/16-3/8 wide; inflorescence stalk 8-30 in. long, cylindrical and ridged below, flattened above; sheath shorter than main leaves; **flowers**: in conelike clusters, these becoming ovoid, ellipsoid or nearly cylindrical, 3/16-5/8 in. long; lateral sepals nearly as long as bracts (but hidden), curved, keeled, the keel irregularly and minutely jagged in upper 2/3-1/2; petals 3, yellow; **fruit**: a capsule with many tiny seeds.

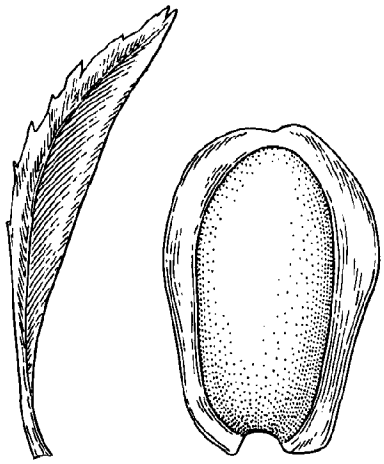
Recognition: herb with leaves erect and flat, relatively wide and not twisted; lateral sepals are shorter than cone-scales (hidden); base of plant not pinkish; inflorescence stalk is not prominently winged below the flower cluster.

Habitat: U - wet sands or sandy peat; roadside ditches, flatwoods pond margins, cypress swamps, lake shores and disturbed areas.

Distribution: not native; widely naturalized throughout Florida.

Flowering:





Lateral sepal Bract

Section 5

Dicotyledons

A. flowers with parts usually in fours and fives.

B. seeds enclosed in fruits.

C. leaves usually net-veined.

D. vascular bundles forming a circle (in cross section of stem).

E. often form wood.

Hygrophila lacustris **Acanthaceae**
Lake Hygrophila

Perennial **herb**, stems square, erect or sprawling and rooting from the younger parts, to 2½ ft. long, **leaves**: opposite, lanceolate or lance-elliptic, narrowed to a slight stalk, tips pointed, margins without teeth, **flowers**: in dense axillary clusters, sepals united, ¼ in. long, petals united, 2-lipped, about ⅝ in. long, bluish white, stamens 4, attached to petals, **fruit**: a narrow, 2-parted capsule, ¼-½ in. long, sharp-pointed, with small, flattened seeds.

Recognition: herb; leaves opposite, narrow; sprawling and rooting; flowers and fruit in dense clusters at the leaf bases, fruit a narrow capsule.

Habitat: S - swamps, floodplain forests, in mud and shallow water of marshy shores, drainage ditches and canals.

Distribution: north and central Florida.

Flowering:

Hygrophila polysperma **Acanthaceae**
East Indian Hygrophila

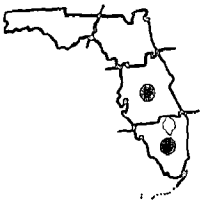
Perennial **herb**, stem square, sprawling and rooting from the younger parts, erect or ascending; submersed or emergent **leaves**: opposite, ⅜-1½ in. long, to nearly ½ in. wide, elliptic or obovate-elliptic, when emergent, elliptic to oblong when submersed, tapering to short stalks, submersed leaves usually larger than emergent; **flowers**: in axils of upper leaves, petals united, 2-lipped, blue or white, hairy, up to ⅜ in. long; **fruit**: a narrow capsule, to ⅜ in. long.

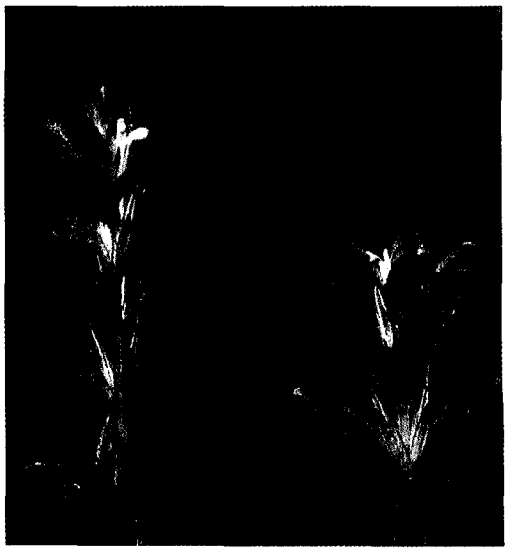
Recognition: herb; leaves opposite, hairy, elliptic to oblong or ovate, short-stalked; usually floating or emergent; infloresence a terminal spike.

Habitat: S - stream banks and in shallow streams, slowly moving water.

Distribution: not native; central and south Florida, known in Broward, Lee and Pasco Counties and likely to spread.

Flowering:





Justicia americana **Acanthaceae**
Water-willow

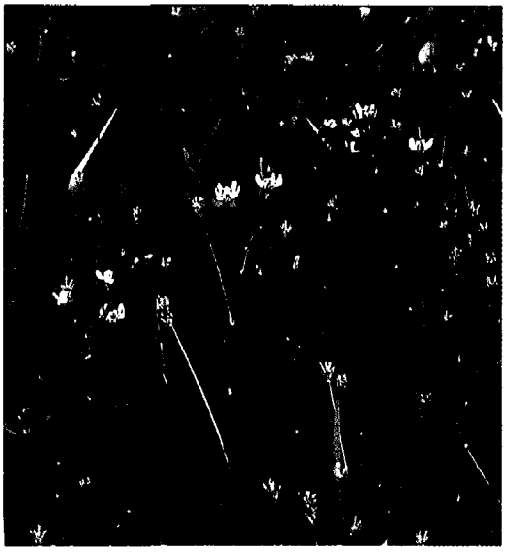
Perennial **herb**, spreading by runners and forming colonies; stems angled, often spreading at base and rooting at joints, to 3 ft. long; **leaves**: opposite, lanceolate, linear or linear-elliptic, usually sessile, tapering at base, tip pointed, to 8 in. long and mostly less than 1 in. wide; inflorescence terminal and axillary, each a dense headlike spike on a stiffish stalk that may be shorter or a bit longer than the leaves; **flowers**: sepals 5, united, about ⅝ in. long, petals united, 2-lipped, ⅜-½ in. long, violet to nearly white, with brownish-purple marks on lower lip; stamens 2, the anthers asymmetrical; **fruit**: a 2-parted, club-shaped capsule about ½ in. long, with 4 disklike seeds.

Recognition: herb; leaves opposite, narrow, willowlike; from runners; flowers in dense spikes on long stalks; petals purple.

Habitat: S - in shallow water, streams, marshy shores of ponds and lakes, and ditches.

Distribution: northwest Florida.

Flowering:



Justicia ovata **Acanthaceae**
Water-willow

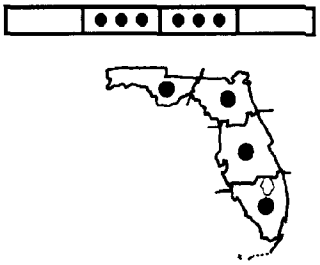
Perennial **herb** with runners, usually forming colonies; stems angled, to 18 in. tall, simple or branched; **leaves**: opposite, usually sessile, linear, lance-elliptic or lance-ovate, to about 4 in. long, 1 in. wide (rarely wider), margins may be wavy; inflorescence in leaf axils or terminal and axillary, shorter than the leaves to considerably longer; **flowers**: paired or solitary, several on each spike, sepals united, ¼-⅜ in. long, lobes narrow; petals pale lavender, united, 2-lipped, sometimes ⅜ in. long, or in others ¾ in. long, purple to nearly white, with white or purple markings on lower lip; stamens 2, the anthers asymmetrical; **fruit**: a 2-parted, club-shaped capsule ⅜-½ in. long, with disklike seeds.

Recognition: herb; leaves opposite, narrow, willowlike; from runners; flowers purple, paired or solitary, few to several in loose spike on long stalk.

Habitat: S - swamps, wet forests, cypress-gum ponds or depressions, cypress prairies, wet clearings and ditches.

Distribution: throughout Florida.

Flowering:



Acer negundo Aceraceae
Box-elder, Ash-leaved Maple

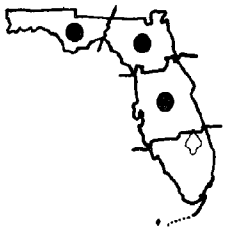
Tree to 60 ft. tall; twigs green; **leaves**: opposite, deciduous, long-stalked, pinnately compound, leaflets 3-9, 2-4 in. long, 2-3 in. wide, ovate or elliptic-ovate, tapering, bases rounded, margins irregularly toothed or lobed in upper half; **flowers**: produced before or with the leaves, small, in dense clusters; unisexual, M/F, usually 5-parted, without petals, greenish, the male flowers in long-stalked clusters; **fruit**: leathery, each half with 1 seed and a large, asymmetrical wing.

Recognition: tree; leaves opposite, pinnately compound; leaflets coarsely and irregularly toothed or lobed; lateral buds hidden by leaf-stalk bases; fruits paired, winged.

Habitat: T - floodplain forests, stream banks, wet or moist forests.

Distribution: north and central Florida.

Flowering:



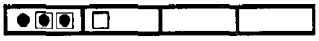
Acer rubrum **Aceraceae**
Red Maple, Southern Red Maple

Tree, often with several trunks, bark gray or brownish gray, relatively smooth, forming long cracks with age; **leaves**: opposite, deciduous, long-stalked, palmately veined and 3- to 5-lobed, the central lobe less than half as long as leaf and widest at base, more or less ovate, 2-5½ in. long, bases rounded, squarish or notched, lobes toothed, saw-toothed, or somewhat lobed; whitish to silvery beneath; **flowers**: produced before the leaves, small, red, in dense clusters; usually unisexual, M/F, 5-parted, petals narrow, slightly longer than sepals; **fruit**: leathery, each half with 1 seed and a large, asymmetrical wing.

Recognition: tree; leaves opposite, palmately veined and usually 3- to 5-lobed, the central lobe less than half as long as leaf and widest at base; leaf stalks often reddish; fruits paired, winged; the bright red young fruits are among our first obvious "spring flowers" in much of Florida.

Habitat: T - swamps, floodplain forests, stream banks, wet forests.

Distribution: throughout Florida.

Flowering: 

Acer saccharinum Aceraceae
Silver Maple, Soft Maple

Tree, bark gray, falling off in large scales; **leaves**: opposite, deciduous, long-stalked, palmately veined and deeply 5-lobed, the lobes lobed and toothed, the central lobe more than half as long as leaf and narrowed at base, notches between lobes sharp, silvery beneath; **flowers**: produced before the leaves, small, in dense clusters; unisexual, M/F, usually 5-parted, without petals, greenish yellow to red; **fruit**: leathery, each half with 1 seed and a large, asymmetrical wing.

Recognition: tree; leaves opposite, deeply palmately 5-lobed, the central lobe at least half as long as leaf and narrowed at base, white or silvery beneath; fruits paired, winged.

Habitat: T - floodplain forests, stream banks, moist forests.

Distribution: northwest Florida along the Apalachicola River.

Flowering:

Sesuvium maritimum Aizoaceae
Sea Purslane

Annual **herb**, stems usually spreading; **leaves**: opposite, equal or nearly so, fleshy, linear to oblanceolate or spoon-shaped; **flowers**: solitary, sessile, appearing axillary; sepals 5, united, pink to lavender within; stamens about 5; **fruit**: a few-seeded capsule.

Recognition: mat-forming herb; leaves opposite, succulent, widest in upper part, base winged; flower pink to lavender, sessile; stamens about 5.

Habitat: T - damp to wet sands, peats or muck, sea beaches, marshes, semi-swampy open places, usually coastal.

Distribution: throughout coastal Florida.

Flowering:

Sesuvium portulacastrum **Aizoaceae**
Sea Purslane

Perennial **herb**, stems spreading and rooting at joints; **leaves**: opposite, equal or nearly so, fleshy, linear to oblanceolate or spoon-shaped; **flowers**: solitary, stalked, appearing axillary; sepals 5, united, pink to lavender within; stamens many; **fruit**: a few-seeded capsule.

Recognition: mat-forming herb; leaves opposite, succulent, widest near tips, winged near base; flowers pink to lavender with short stalks attached at leaf base.

Habitat: T - beaches, dunes, marsh banks, salt flats.

Distribution: throughout coastal Florida.

Flowering:

Alternanthera philoxeroides **Amaranthaceae**
Alligator Weed

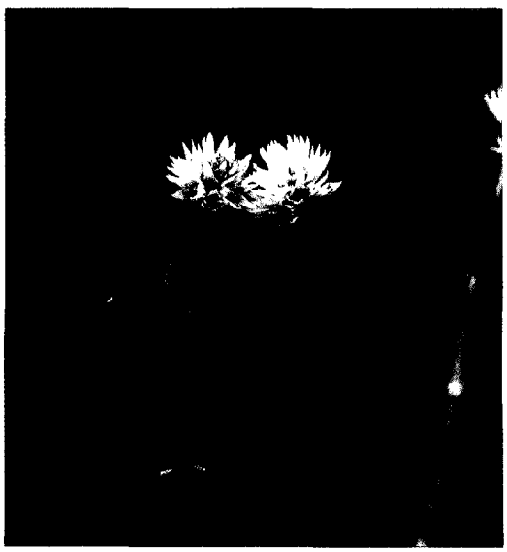
Sprawling **herb**, usually in water, the stems becoming hollow, sometimes inflated, rooting at the joints; **leaves**: opposite, linear-elliptic, to about ½ in. wide and 3½ in. long, tapering at the base; inflorescence a several-flowered, whitish head, axillary or terminal, stalked, the stalks to about 2 in. long, **flowers**: stamens 5, style 1, **fruit**: tiny, 1-seeded, thin-walled, not known in Florida.

Recognition: sprawling herb, rooting at the nodes; some stems may be hollow; leaves opposite, broadest near tip, leaf bases join and clasp the stem; flower clusters white and papery.

Habitat: S - ponds, lakes, streams, canals and ditches.

Distribution: not native; throughout Florida.

Flowering: , probably throughout the year when warm enough.



Amaranthus australis **Amaranthaceae**
Pigweed, Southern Water-hemp

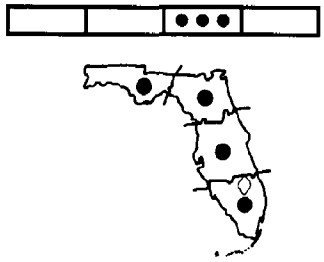
A large or gigantic **herb**, becoming 30 ft. tall, with the base up to 1 ft, in diameter, but may mature at much smaller sizes; **leaves**: alternate, stalked, blades lanceolate to ovate, tapering, to 12 in. long; inflorescence elongate, simple or branched; **flowers**: unisexual, M/F, tiny, male flowers with 5 sepals and 5 stamens; female flowers without sepals; **fruits**: ovoid, about 1/16 in. in diameter, seed flattened, 1/32-1/16 in. wide, shiny, reddish brown to black.

Recognition: herb; leaves alternate, very long-stalked, lance-shaped; often a giant, but much smaller plants may flower and fruit; in the female plants, the fruit is angled and less than 3/16 in. long, the bracts are at least 1/16 in. long; in the male plants the bracts are at least 1/16 in., but less than 3/16 in. long, and the outer sepals are sharp-pointed.

Habitat: S - salt to fresh water tidal marshes, edges of mangrove swamps, swamps, ditches and canals, cultivated mucklands, lake shores, mainly coastal.

Distribution: throughout Florida.

Flowering:



***Philoxerus vermicularis* (=*Blutaparon vermiculare*)** **Amaranthaceae**
Beach Carpet, Silverhead

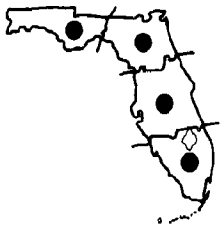
Perennial **herb**, somewhat succulent, the stems creeping, up to 6 ft. long, much-branched, with the tips and branches ascending, forming mats; **leaves**: opposite, fleshy, ½-2 in. long, up to ½ in. wide, narrowly oblong or oblanceolate, tip pointed or blunt, bases tapering, the paired bases joined into a small sheath about stem; inflorescence white, dense, stalked, headlike clusters, axillary and terminal; **flowers**: tiny, partly hidden by bracts, with 5 sepals, up to 3/16 in. long, stamens 5; **fruit**: flattened, 1-seeded, seeds dark brown.

Recognition: mat-forming herb; leaves opposite, narrow, succulent; leaves join at base; papery flower clusters.

Habitat: T - coastal; sandy beaches, wet sands and marls, dunes.

Distribution: throughout coastal Florida.

Flowering:



Metopium toxiferum **Anacardiaceae**
Poison-tree, Poisonwood

Shrub or small **tree** with widely spreading branches, all parts with sap to which many people are very sensitive (like Poison Ivy); bark smoothish, light gray and mottled with yellow to brown spots; **leaves**: alternate, evergreen, stalked, pinnately compound with 3-7 leaflets, leaflets leathery, ovate or oblong-ovate, 1-3½ in. long, 1-2¼ in. wide, sometimes notched; **flowers**: unisexual, usually M/F; sepals 5, small, rounded, united; petals 5, yellowish-green, small; stamens 5; **fruit**: fleshy, elliptic or oblong, with a stone, about ⅜ in. long, becoming brownish orange at maturity.

Recognition: evergreen shrub or tree; leaves alternate, pinnately compound, with 3-7 long-stalked leaflets, the leaflets are dark green, somewhat triangular in shape with broadly rounded, lopsided bases; bark mottled; sap poisonous.

Habitat: **T**** - pinelands on lime rock and subtropical forest, also in marl prairies and marshy glades.

Distribution: south Florida.

Flowering:

Schinus terebinthifolius **Anacardiaceae**
Brazilian-pepper, Pepper-tree

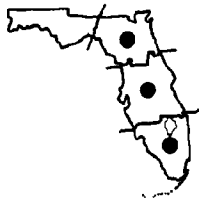
Much-branched **shrub** to about 10 ft. tall; **leaves**: alternate, evergreen, short-stalked, pinnately compound, with (3)7-9(11) leaflets; leaflets oblong-elliptic to lanceolate, dark green above, paler beneath, usually blunt or rounded at both bases and tips, ¾-2 in. long, ½-1¼ in. wide; **flowers**: in branched clusters in leaf axils of current season, usually shorter than leaves; sepals 5, tiny, triangular; petals 5, white, oblong, about 1/16 in. long, stamens 10; **fruit**: fleshy, spherical, about ¼ in. across, becoming bright red.

Recognition: evergreen shrub; leaves alternate, dark green, pinnately compound, paler beneath, with peppery odor when crushed; fruits bright red.

Habitat: I - weedy, especially in disturbed habitats, often in wetlands.

Distribution: not native; south Florida and north to coastal Levy and Volusia Counties.

Flowering: mainly , but flowering sporadically throughout year.



Annona glabra Annonaceae
Pond-apple

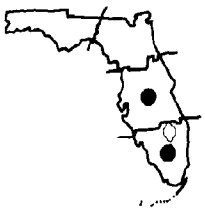
Small tree to 40 ft. tall, base buttressed; **leaves**: alternate, short-stalked, blade oblong-elliptic or ovate, to 6 in. long, 2½ in. wide, without teeth, leathery; **flowers**: solitary, stalked, from branch or twig, with 3 fleshy green petals and 6 white petals, these opening only slightly; **fruit**: fleshy, up to 5 in. long, 3 in. wide, seeds smooth, brown, oblong, about ⅝ in. long.

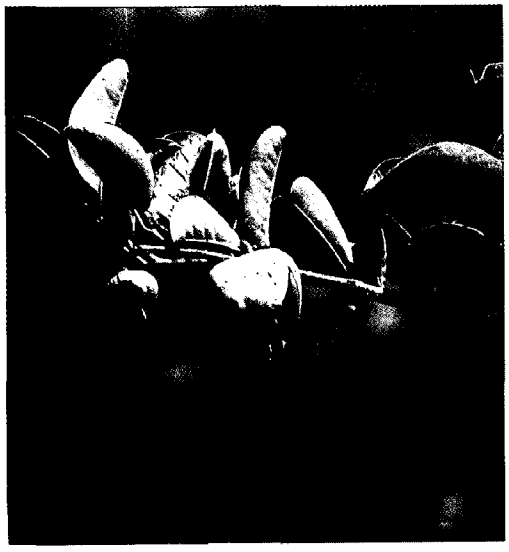
Recognition: tree; leaves alternate, large, leathery, with smooth margins, leaves 2-ranked, on opposite sides of the stem.

Habitat: S - swamps and ponds.

Distribution: south and central Florida north to Manatee County.

Flowering:





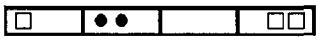
Ilex cassine **Aquifoliaceae**
Dahoon, Dahoon Holly

Small **tree** to about 30 ft. tall, bark pale gray, **leaves**: alternate, evergreen, stalked, blades oblanceolate, oblong, oval, elliptic or subobovate, bases tapering, tips pointed or blunt, sometimes rounded, 1-5½ in. long, ⅜-2 in. wide, margin smooth, or with a few sharp teeth (especially on young trees), **flowers**: in axillary clusters, unisexual, M/F, the male flowers clustered, the female solitary or few in a cluster, sepals 4-6, broadly triangular; petals 4-6, greenish white, united at base; **fruit**: fleshy, with a stone, ¼-⅜ in. across, red, rarely yellow.

Recognition: evergreen tree; leaves alternate, leathery, glossy, elliptic, in the mature trees without teeth; midvein usually hairy beneath; red berries.

Habitat: S - edge of streams, floodplains, cypress-gum ponds or depressions, flatwoods depressions, wet forests, bogs, edges of brackish marshes.

Distribution: throughout Florida.

Flowering: 

Ilex coriacea **Aquifoliaceae**
Sweet Gallberry, Large Gallberry

Shrub, rarely a small **tree** to 15 ft. tall, **leaves**: alternate, evergreen, stalked, leathery, elliptic or oval, base tapering, tip pointed to rounded or notched, mostly 1½-3½ in. long, ½-1½ in. wide, upper surface dark green and shiny, paler beneath, margins may have a few irregular teeth, **flowers**: unisexual, M/F, solitary or in small clusters in leaf axils, sepals 5-9, triangular, petals 5-9, white, united at base, **fruit**: fleshy, with a stone, ¼-⅜ in. across, black and shiny.

Recognition: shrub; leaves alternate, leathery, dull green, obovate, tip pointed, margin with few, small teeth, scattered tiny black dots beneath leaf; black berries.

Habitat: T - pine savannas and flatlands, shrub-tree bogs, and bayheads, open bogs, seepage areas in forests.

Distribution: north and central Florida.

Flowering:

Ilex decidua **Aquifoliaceae**
Possum-haw, Winterberry

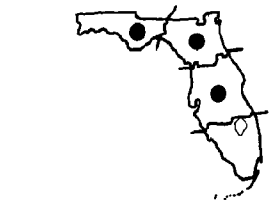
Shrub or small **tree**, to 30 ft. tall, **leaves**: alternate, deciduous, stalked, blades mostly widest above middle, oblanceolate or elliptic, tapering at base, ½-2 in. long, ⅜-1¼ in. wide, tips rounded or blunt, margins lightly round-toothed (crenate), **flowers**: unisexual, M/F, solitary or clustered in leaf axils, sepals 4-6, triangular, petals 4-6, greenish white, bases united; **fruit**: fleshy, with 4-5 nutlets, red, ¼-⅜ in. across.

Recognition: shrub or tree; leaves alternate, deciduous, thin, shallowly toothed, widest near tip, and tapering at base; red berries.

Habitat: T - floodplain forests, alluvial swamps, wet forests and thickets, much less frequent in well-drained areas.

Distribution: north and central Florida, only on west side of peninsula.

Flowering:



Ilex myrtifolia **Aquifoliaceae**
Myrtle-leaved Holly, Myrtle Holly

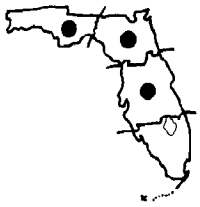
Shrub, to 15 ft. tall, twigs stiff and spreading, **leaves**: alternate, evergreen, short-stalked, ¼-1¼ in. long, ⅛-⅜ in. wide, lanceolate, oblong, oblanceolate or elliptic, leathery, dark green and shiny above, paler beneath, bristle-tipped, margins without teeth, **flowers**: unisexual, M/F, solitary or clustered in leaf axils, sepals 4, triangular; petals 4, greenish white, bases united; **fruit**: spherical, ¼-⅜ in. across, red, with 4 nutlets.

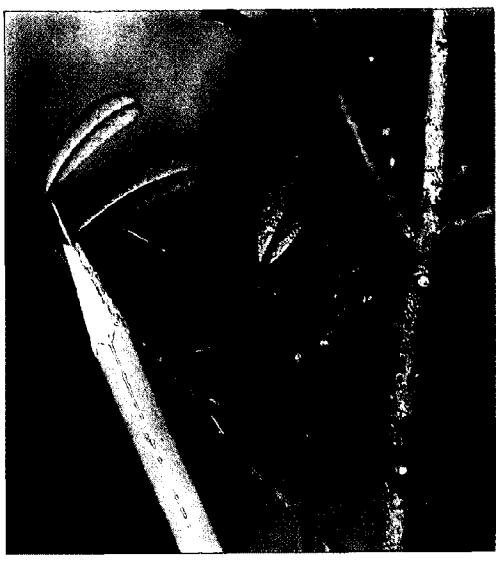
Recognition: shrub; leaves alternate, evergreen, small, very narrow, without teeth, tips pointed; red berries.

Habitat: S - cypress-gum ponds and depressions, titi swamps, pond margins.

Distribution: north Florida, and south to Orange County.

Flowering:





Ilex opaca var. *opaca* **Aquifoliaceae**
American Holly

Tree to 45 ft. tall, **leaves**: alternate, evergreen, stalked, oblong, elliptic, or ovate, 1-4¼ in. long, 1-1½ in. wide, margins usually with few to several spine-tipped teeth, tip with a spine, **flowers**: unisexual, M/F, in few- to several-flowered clusters in leaf axils, sepals 4, triangular, pointed; petals 4, white, bases united; **fruit**: fleshy, red, with 4 nutlets, ⅜-½ in. across.

Recognition: tree; leaves alternate, evergreen, glossy, leathery, margins and tip with spines; red berries.

Habitat: T - moist forests, floodplain forests, stream banks.

Distribution: north and central Florida.

Flowering:

Avicennia germinans **Avicenniaceae**
Black Mangrove

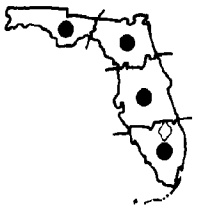
Shrub or small **tree** to 25 ft. tall; **leaves**: opposite, evergreen, leathery, short-stalked, elliptic, oblong, lanceolate or somewhat oblanceolate, tips blunt or rounded, smooth and dark green above, grayish with tight felty hairs beneath; **flowers**: in stalked clusters with hairy bracts; sepals 5, hairy, 3/16 in. long, petals united, white, tubular below, 2-lipped, stamens 4; **fruit**: a flat, asymmetrical, 1-seeded pod, almost velvety.

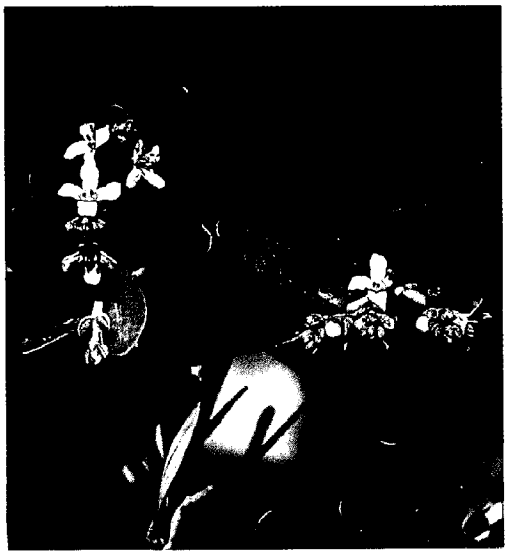
Recognition: shrub or tree; leaves opposite, leathery, whitish beneath, tapering at base; short flower clusters and a short, asymmetrical pod.

Habitat: S - sandy or marshy shores and coastal swamps; commonly associated with *Laguncularia* and *Rhizophora.*

Distribution: coastal peninsular Florida and west to Franklin County.

Flowering:





Batis maritima **Bataceae**
Saltwort

Shrubby **herb** with thick, fleshy roots; young stems succulent, older stems woody, with pale buff, soft, corky shredding bark; stems sprawling, arching or creeping, forming large colonies, to 18 in. tall; **leaves**: opposite, pale green or yellow-green, sessile, fleshy, often curved, semi-cylindric; **flowers**: unisexual, M/F, clustered in fleshy, conelike spikes; **fruit**: a fleshy spike of berrylike elements.

Recognition: succulent herb; leaves opposite, fleshy and more or less cylindrical; stems arching.

Habitat: S - salt marshes and salt flats, mangrove swamps, tidal shores and flats.

Distribution: throughout coastal Florida.

Flowering:

Alnus serrulata **Betulaceae**
Hazel Alder

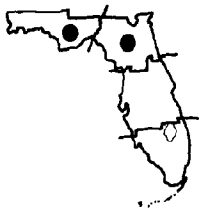
Shrub or small **tree**, bark reddish brown; **leaves**: alternate, deciduous, stalked, obovate, elliptic or oblong, 2-4 in. long, margins may be wavy, finely toothed or irregularly saw-toothed, the lateral veins prominent, straight and parallel; **flowers**: unisexual, in separate catkins, male catkins narrowly cylindric, 2-3½ in. long; female catkins much shorter, becoming rather conelike in fruit; **fruit**: ½-¾ in. long, with small, winged, shiny brown nutlets.

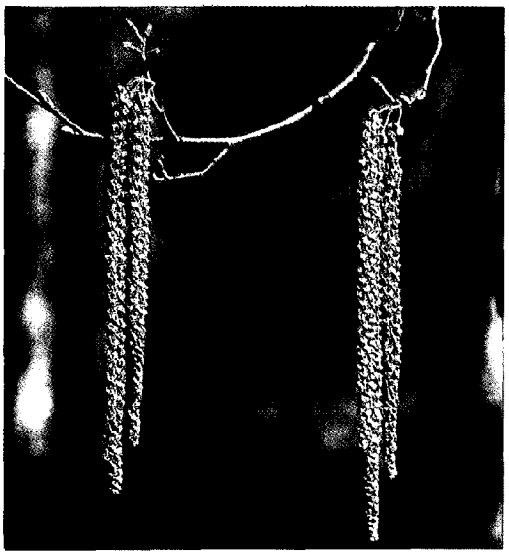
Recognition: shrub or tree; leaves alternate, with prominent, straight, parallel lateral veins, leaf margins wavy and saw-toothed; old "cones" present throughout the year.

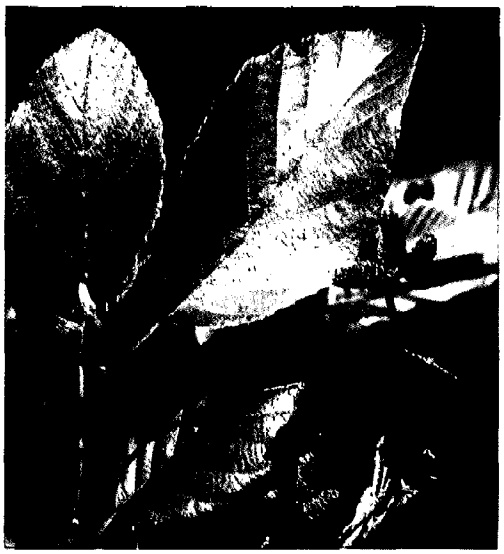
Habitat: S - stream banks, along sloughs and ditches, edges of swamps and wet forests.

Distribution: north Florida.

Flowering:







Betula nigra **Betulaceae**
River Birch

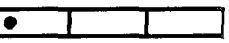
Tree to 90 ft. tall, older bark coppery brown to buff, peeling off to expose yellowish- to salmon-colored inner bark; **leaves**: alternate, deciduous, stalked, arranged to appear in a flat plane, blades broadly ovate to ovate-elliptic, doubly saw-toothed, densely woolly beneath when young, lateral veins mostly straight and parallel; **flowers**: unisexual, in catkins, the male catkins formed in summer and persisting over winter, expanding in spring before leaves develop, 2-3 in. long; female catkins conelike; **fruit**: disintegrating into winged nutlets when mature.

Recognition: tree; leaves alternate, oval to somewhat triangular, widest near the base, with parallel lateral veins, margins doubly saw-toothed; the older bark is coppery brown and peels off in thin, curling strips.

Habitat: S - wooded stream banks, floodplain forests.

Distribution: north Florida.

Flowering:



Carpinus caroliniana **Betulaceae**
Ironwood, Blue-beech, American Hornbeam

Small **tree** to 30 ft. tall; bark smoothish, gray, the trunk often fluted, "like flexed muscles;" **leaves**: alternate, deciduous, all flattened in the same plane on a branch, with short stalks, blades oblong-ovate to oblong, ¾-3½ in. long, bases rounded, tips pointed or long-pointed, margins doubly saw-toothed; **flowers**: unisexual, in catkins before leaves develop; **fruit**: a cluster of small nuts, each attached to the base of a 3-lobed leaflike bract.

Recognition: tree; leaves alternate with doubly toothed margins and parallel lateral veins, upper surface rough to touch; with definite tufts of hair beneath in the vein angles; leaf bases symmetrical; the leaves are generally smaller and darker than those of *Ostrya*, and have longer stalks; trunk smooth and "muscular".

Habitat: **T** - low, wet or floodplain forests.

Distribution: north and central Florida south to Hillsborough County.

Flowering:

Ostrya virginiana **Betulaceae**
Hop Hornbeam

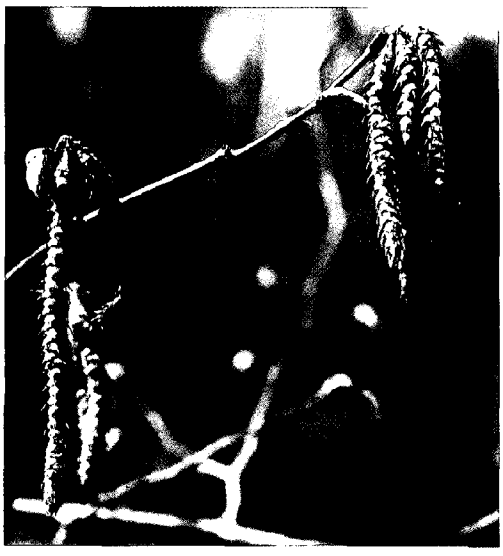
Small, understory **tree** to about 40 ft. tall; bark brown and peeling in shreds; **leaves**: alternate, deciduous (but persisting into winter), 2-ranked, short-stalked, blade oblong, ovate-oblong or elliptical, 2-5 in. long, bases mostly rounded or slightly notched, tips pointed or long-pointed, margins usually doubly saw-toothed; **flowers**: unisexual, male flowers in slender, drooping catkins, female flowers in inconspicuous, conelike catkins; **fruit**: clustered nutlets in papery sacs, the cluster 1-3 in. long, persisting through most of summer.

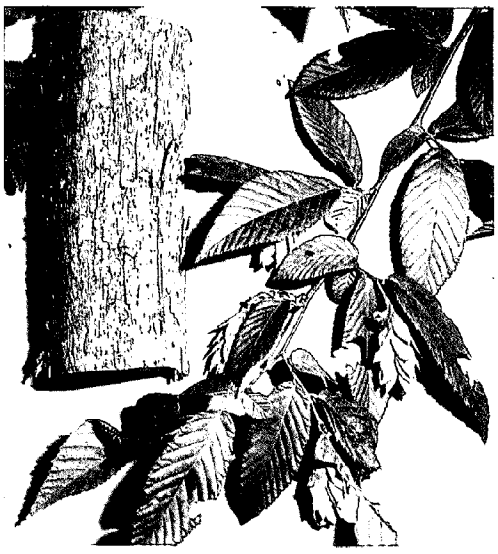
Recognition: tree; leaves alternate, elliptic or ovate, doubly-toothed, with parallel lateral veins, upper surface smooth to touch, with definite tufts of hairs beneath in the vein angles; leaf bases symmetrical; bark brown, papery, shreddy or scaly.

Habitat: **T** - rich forests and well-drained floodplains.

Distribution: north Florida.

Flowering:





Brasenia schreberi **Cabombaceae**
Water-shield, Purple Wen-dock

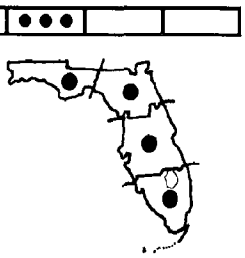
Aquatic **herb** with rhizome in mud and floating leaves; **leaves**: alternate, floating, very long-stalked, stalk attached to center of blade, blade 1½-4½ in. long, broadly elliptical, the margins may be slightly wavy, submersed parts covered with a jellylike substance (seedlings may have submersed leaves); **flowers**: solitary, long-stalked, emerging from water, with outer parts in 3's and 4's, all dull purple, ½-¾ in. long, stamens 18-36; **fruits**: 4 to several (from each flower), club-shaped, leathery, each with 1 or 2 seeds.

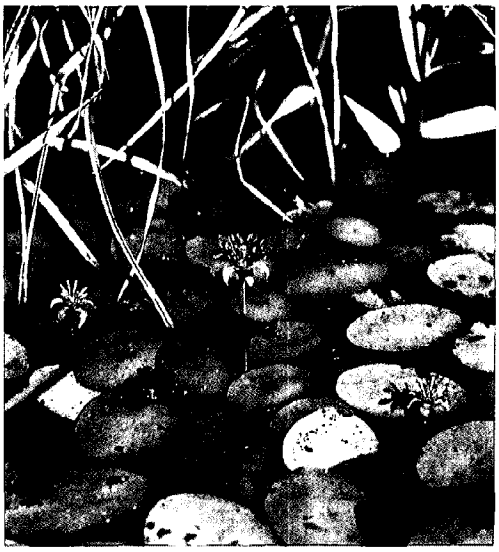
Recognition: herb; leaves alternate; floating aquatic with leaf stalk attached in the center of elliptic leaf blades, underside of leaf slimy.

Habitat: S - lakes, ponds, slow streams.

Distribution: throughout Florida.

Flowering:





Cabomba caroliniana **Cabombaceae**
Fanworts, Cabomba

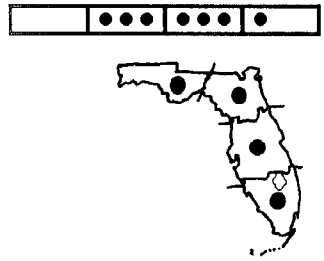
Aquatic **herb**, stems elongate, much-branched near base, with many slender roots; **leaves**: opposite, submersed leaves divided into several or many narrow, Y-branching segments, floating leaves (few, at flowering stem tips) linear elliptic to narrowly diamond-shaped, centrally attached, mostly ⅜-1 in. long; **flowers**: single at bases of floating leaves, stalks longer than the floating leaves, white to pink or purplish, to about ½ in. long, oval, the petals each with yellow-spotted lobes below, stamens 3-6; **fruits**: 2-4 leathery pods, each with up to 3 seeds.

Recognition: herb; leaves opposite, finely divided, with the two divisions equal at each branch (as in a "Y") without any teeth or spines. The diamond-shaped floating leaves are distinctive when present.

Habitat: S - ponds, pools, lakes and sluggish streams.

Distribution: throughout Florida.

Flowering:



Lobelia cardinalis **Campanulaceae**
Cardinal-flower

Perennial **herb**, forming offshoots from the base, slender to very coarse, 1½-6 ft. tall; **leaves**: alternate, lower leaves with winged stalks, upper leaves sessile, blades lanceolate to elliptic, to 7 in. long and 2 in. wide, tapering at base, pointed or long-pointed at tip, margins with irregular, small teeth; inflorescence a terminal raceme; **flowers**: stalked, sepals 5, united, with narrow lobes; petals united, 1-1¾ in. long, deep red, crimson or vermilion, 2-lipped, with narrow lobes; stamens 5, the anthers united to form a tube; **fruit**: a capsule, bell-shaped or oblong, about ⅜ in. long, with many tiny seeds.

Recognition: herb; leaves alternate, margins with irregular, small teeth, lower leaves with winged stalks; tall racemes of large, 2-lipped red flowers with the anthers united.

Habitat: S - swamps, floodplain forests, streams and stream banks, bogs, wet meadows, sometimes in floating vegetation.

Distribution: north and northern central Florida.

Flowering:

Lobelia glandulosa **Campanulaceae**
Lobelia, Glades Lobelia

Perennial **herb** with slender, erect stems, usually unbranched, 28-40 in. tall; **leaves**: alternate, few on stem, linear to narrowly lanceolate, 3-6 in. long, about ¼ in. wide, margin glandular or wavy; inflorescence a terminal raceme, with few to about 20 flowers; **flowers**: ¾-1 in. long, stalked; sepals united, with 5 narrow lobes, petals blue with white eye, united, 2-lipped; stamens 5, anthers united to form a tube; **fruit**: a more or less spherical capsule about ⅜ in. in diameter, with many small seeds.

Recognition: herb; leaves alternate, mostly about ¼ in. wide, with narrow stem leaves, margins wavy or with glandular spots; sepal lobes toothed, petals ⅝-1 in. long, blue; lower lip hairy on upper side at base.

Habitat: S - wet pine savannas and flatwoods, ditches, bogs, banks of streams and ponds.

Distribution: throughout Florida.

Flowering:

Sambucus canadensis **Caprifoliaceae**
Elderberry

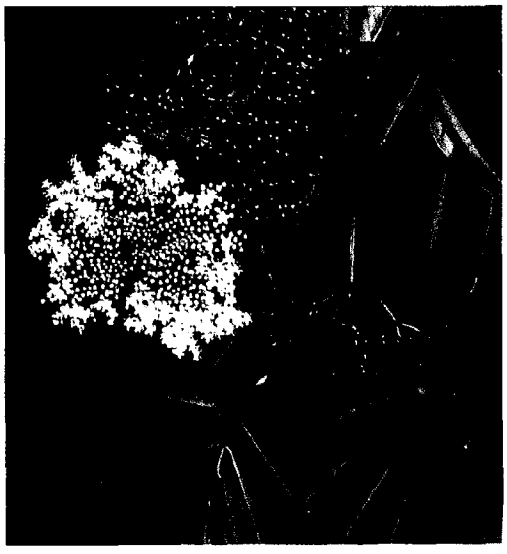
Soft-stemmed **shrub** or small **tree**, to 20 ft. tall; spreading by underground runners and forming thickets; bark grayish brown; **leaves**: opposite, with a rank odor when crushed; semi-evergreen (may be lost in severe winters), stalked, pinnately compound, or the lower leaflets again divided into 3 segments; leaflets mostly 5-11, stalked, lanceolate, elliptic or ovate, 2-7 in. long, 1-3 in. wide, margins saw-toothed, bases tapering or rounded, tip long-pointed; **flowers**: in large, flat clusters, white, about ¼ in. wide; sepals 5, united, with small lobes; petals 5, stamens 5; **fruit**: fleshy, with 3-5 small stones, blue-black, to ¼ in. across.

Recognition: shrub or tree; leaves opposite, pinnately compound; flat topped clusters of white flowers; fruits blue-black (may be confused with *Cicuta* at a distance).

Habitat: **T** - moist to wet open places, swamps, ditches, banks of canals and bayous, often in disturbed areas such as pastures and old fields.

Distribution: throughout Florida.

Flowering: mainly , but flowering sporadically throughout the year.



***Viburnum* spp.** **Caprifoliaceae**
Black-haws, Viburnums

Shrubs or small **trees**; **leaves**: opposite, deciduous, stalked, simple, toothed or somewhat lobed; **flowers**: in flattened clusters at branch tips, white or cream, sepals united, with 5 lobes, petals 5; **fruits**: fleshy, with stones, usually black or blue-black when mature.

Five species: *V. acerifolium*, *V. dentatum*, *V. nudum*, *V. obovatum*, *V. rufidulum*.

Recognition: shrub or tree; leaves opposite, simple, may have tiny, rusty hairs beneath (best seen with a lens); inflorescence flat or a low dome, flowers white or cream colored (see also *Cornus*).

Habitat: T - floodplain forests, wet thickets, stream banks, wet forests, swamps, bogs, sometimes in upland forests.

Distribution: throughout Florida.

Flowering:

***Ceratophyllum* spp.** **Ceratophyllaceae**
Hornworts, Coon-tails

Perennial, submersed **herbs**, branching, rootless, brittle; **leaves**: whorled, fan-shaped, sessile, divided into very narrow segments, with small or obvious teeth, giving the plant a rough texture; **flowers**: unisexual, very small, solitary at leaf bases; **fruit**: a 1-seeded nutlet.

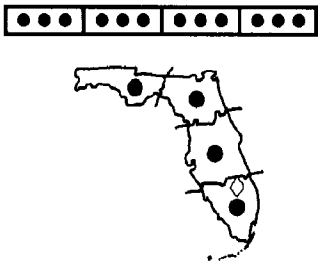
Two species: *C. demersum*, base of nutlet with spines, but side without, and *C. muricatum*, base and sides of nutlet with spines.

Recognition: submersed herb; leaves whorled, fan-shaped, finely divided, with several tiny teeth.

Habitat: **S** - sluggish streams, ponds, lakes, ditches, canals.

Distribution: throughout Florida.

Flowering:



***Salicornia* spp.** **Chenopodiaceae**
Glassworts

Succulent **herbs** with opposite, jointed branches; **leaves**: opposite, scalelike, inconspicuous; inflorescence: a fleshy spike; **flowers**: tiny, inconspicuous; **fruit**: 1-seeded, embedded in the fleshy spike, seeds thick, hairpinlike, hairy.

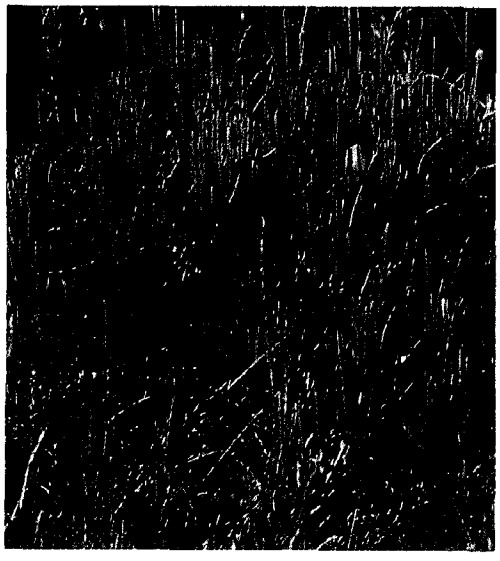
Two species: *S. bigelowii*, annual with erect stems; and *S. virginica*, perennial with horizontal main stems, mat-forming.

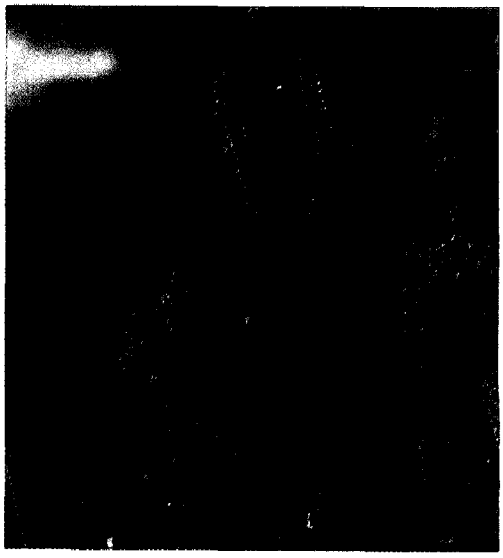
Recognition: succulent herb; leaves inconspicuous; stems thick, jointed, resembling link sausage; branches opposite; often reddish in color.

Habitat: S - salt and brackish marshes and flats.

Distribution: throughout coastal Florida.

Flowering:





***Suaeda* spp.** **Chenopodiaceae**
Sea Blites (misspelled as "Sea Blights")

Annual or perennial **herbs**, or subshrubs; **leaves**: alternate, sessile, cylindrical, fleshy, becoming smaller above; **flowers**: in compact, sessile clusters in leaf axils, commonly 3-5; sepals 5, succulent, united, hoodlike or not, may be unequal; stamens 5; **fruit**: a papery wall enclosing a single, lens-shaped, shiny black seed.

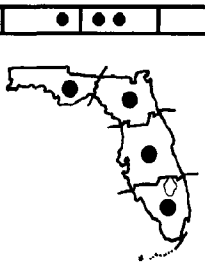
Two species: *S. linearis*, with green leaves and unequal sepals, the 3 larger sepals hooded; and *S. maritima*, with whitish leaves and all sepals equal, not hooded.

Recognition: succulent herb; leaves alternate, very narrow; small flowers in sessile clusters that surround leaf base and extend partially around stem.

Habitat: S - salt marshes and coastal beaches, may be weedy near coast.

Distribution: throughout coastal Florida.

Flowering:



Chrysobalanus icaco **Chrysobalanaceae**
Cocoplum, Cocoa-plum

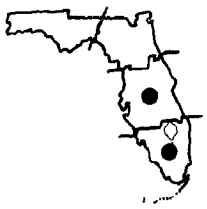
Shrub or small **tree**, to 20 ft. tall; **leaves**: alternate, evergreen, simple, short-stalked, blades obovate to circular, rounded at both ends, or notched above, leathery, smooth, 1-3 in. long, 1-2 in. wide; **flowers**: in small clusters, or these in a raceme, small, with a silky-hairy floral tube, sepals 5, united, silky-hairy, petals 5, white, narrow at bases, about ¼ in. long, stamens many, clustered in several groups; **fruit**: fleshy, yellow, red or purple, with 2 seeds, 1-2 in. long.

Recognition: shrub or tree; leaves alternate, leathery, short-stalked and very wide, often almost circular; bark smooth.

Habitat: T - cypress heads, hammocks, coastal shores, swamps.

Distribution: central and south Florida, especially coastal.

Flowering:



Clethra alnifolia **Clethraceae**
Sweet Pepperbush

Shrub to about 10 ft. tall; **leaves**: alternate, deciduous, simple, short-stalked, blades to about 3 in. long and 1½ in. wide, usually about half this, mostly narrowly obovate to oblanceolate, narrowed at both ends, margins saw-toothed above middle, upper surface smooth, lower may be more or less woolly; **flowers**: white, fragrant, in dense terminal and axillary racemes, sepals united, oblong or bell-shaped, with 5 lobes, petals 5, oblong-obovate, about ⅜ in. long, stamens 10; **fruit**: a 3-parted, hairy, spherical capsule, about 3/16 in. long.

Recognition: shrub; leaves alternate, margins coarsely toothed above middle, pale underneath; flowers white, in racemes.

Habitat: **T** - wet thickets, wet pine savannas and flatwoods, swamps, wet forests, stream banks, bogs.

Distribution: northwest Florida, and east to Lafayette and Baker Counties.

Flowering:

Conocarpus erectus **Combretaceae**
Buttonwood, Button Mangrove

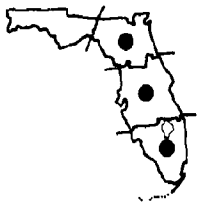
Shrub or small **tree**, to about 60 ft. tall; **leaves**: alternate, evergreen, simple, leathery, short-stalked, blades elliptic to ovate or lanceolate, margins without teeth, tips pointed or long-tapering, with a pair of glands on the leaf stalk near the base of the blade; **flowers**: in stalked, spherical or conelike clusters, axillary or terminal, bisexual or unisexual, sepals greenish white, united, 5-lobed, without petals, stamens 5-8, **fruits**: flattened, 2-winged, scalelike, in spherical clusters.

Recognition: shrub or tree; leaves alternate, tapering at both ends; may be silvery-hairy; paired glands on the leaf stalk at base of blade; the distinctive ball-like fruits are usually present.

Habitat: **T** - usually landward from *Rhizophora* and above high tides, borders of streams, sandy or marly shores and hammocks.

Distribution: coastal central and south Florida, and Levy County.

Flowering:



Laguncularia racemosa **Combretaceae**
White Mangrove

Shrub or small **tree**, to 60 ft. tall; **leaves**: opposite, evergreen, smooth, short-stalked, oblong to obovate, tips blunt, rounded or notched, with a pair of glands on the stalk just below the base of the blade; inflorescence a terminal panicle or an axillary spike; **flowers**: greenish white, fragrant, bell-shaped, or urnlike; sepals united, with 5 small lobes; petals 5, very small; stamens 10; **fruit**: leathery, ellipsoid to ovoid, 1-seeded, with 2 spongy wings.

Recognition: shrub or tree; leaves opposite, blunt, evergreen, oblong, stalk with a pair of glands or bumps just below the blade; racemes of small flowers and fruit.

Habitat: S - sandy or marly shores and borders of hammocks, sometimes intermixed with *Avicennia* and *Rhizophora.*

Distribution: coastal peninsular Florida north to Levy and Volusia counties.

Flowering:

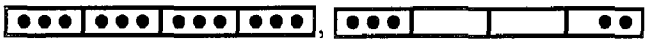
Aster carolinianus **Compositae**
Climbing Aster

Sprawling **shrub** or **vine**, rarely erect, stems woody below, usually much-branched, reaching 10-12 ft. in height, **leaves**: alternate, elliptic, pointed, to 2½ in. long, more or less short hairy, somewhat narrowed near base, base clasping stem, margins smooth, **flowers**: borne in flowerlike heads, involucre hemispheric, or somewhat bell-shaped, rather burlike, rays numerous, straplike, pale lavender-pink or lavender; **fruits**: brown nutlets ⅛ in. long.

Recognition: shrub or vine; leaves alternate, narrow near base and clasping stem; older stems woody; pinkish, daisylike flower-heads; buds burlike.

Habitat: S - stream banks, marshes, glades, swamps and wet forests, mangrove thickets, often in water.

Distribution: peninsular Florida and west to Franklin County.

Flowering:  in the north.

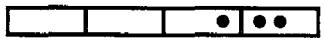
Aster elliottii **(=*A. puniceus* subsp. *elliottii*)** **Compositae**
Aster, Elliott's Aster

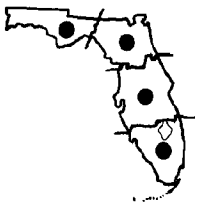
Erect, perennial **herb**, spreading by underground runners and forming colonies, usually 3-7 ft. tall (may reach 10 ft.); **leaves**: alternate, elliptic or elliptic-lanceolate, tips pointed, narrowed near the base, and then wider and clasping the stem, smooth beneath, slightly rough above, margins saw-toothed above the middle, leaves at base 6-10 in. long, up to 2 in. wide, becoming smaller above; **flowers** in dense, flowerlike heads, these in a spreading, branched cluster, involucre more or less bell-shaped, bracts very narrow, bent back and spreading; rays numerous, lavender-pink, ½-⅝ in. long, center of head yellow, becoming red to purple; **fruit**: a purple nutlet ⅛ in. long.

Recognition: tall, erect herb with underground runners; leaves alternate, leaves at mid and upper stem clasp the stem, but do not have prominent lobes at the base, toothed margins.

Habitat: **S** - swamps and their edges, wet thickets, fresh and brackish shores and marshes, ditches.

Distribution: peninsular Florida and west to Franklin County.

Flowering: 



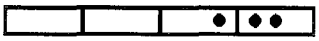
Aster subulatus **Compositae**
Aster, Annual Marsh Aster

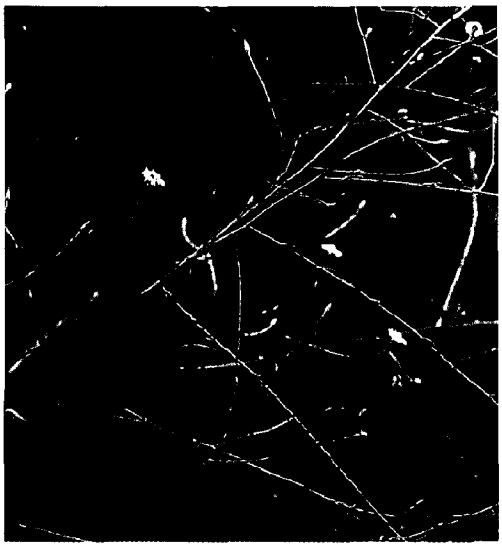
Annual **herb**, 4 in. to 5 ft. tall, few- to many-branched, the branches spreading or ascending; **leaves**: alternate, linear, lanceolate or oblanceolate, up to 8 in. long and 3/8 in. wide, margins smooth, leaves becoming smaller and mostly needlelike above; **flowers**: in dense, flowerlike heads; involucre top-shaped, to 1/4 in. high, the bracts erect, very narrow, rays to 1/4 in. long, white, lavender, lavender-pink, or bluish, center of head yellow, becoming purple with age; **fruit**: a light brown nutlet, tapering, about 3/16 in. long.

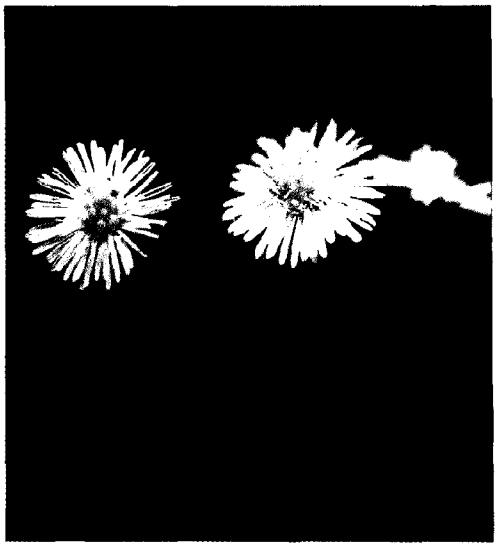
Recognition: annual herb; much-branched; leaves alternate, very narrow; without hairs; small flower heads that resemble single flowers.

Habitat: S - in various moist or wet, usually open places, salt and fresh marshes and marshy or sandy shores, pools, mud flats, thickets, ditches, forest edges, often in disturbed wet sites.

Distribution: throughout Florida, especially coastal.

Flowering: 





Aster tenuifolius **Compositae**
Saltmarsh Aster, Perennial Saltmarsh Aster

Perennial **herb**, hairless, somewhat fleshy, stems single or in small clusters, sometimes with a cluster of leaves at the base, stem often zigzag; **leaves**: alternate, few, linear (needlelike), 1½-6 in. long, the upper leaves very small; **flowers**: in dense flowerlike heads at the branch tips; involucre top-shaped, 3/16-3/8 in. high, bracts narrow, sharp-pointed, rays 10-25, 3/16-3/8 in. long, white flushed with pink to lavender, center of head yellow, becoming reddish with age; **fruit**: a tapering nutlet 3/16 in. long.

Recognition: perennial herb without hairs; leaves alternate, narrow, fleshy; stems zigzag, appearing to branch equally (dichotomously); heads few; ray flowers white with pinkish tinge or lavender.

Habitat: S - salt and brackish marshes, sand-mud flats, lime-rock pinelands, marl prairies, mangrove flats.

Distribution: throughout coastal Florida.

Flowering:

Baccharis angustifolia **Compositae**
False-willow

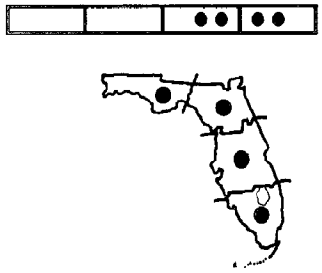
Much-branched **shrub** to 24 ft. tall; **leaves**: alternate, hairless, leathery, shiny green, very narrow, nearly needlelike, ¾-2 in. long; **flowers**: in dense flowerlike heads, unisexual, M/F, heads sessile, or stalks less than ½ in. long, involucre to 3/16 in. long, bell-shaped; **fruit**: a tiny nutlet, fruiting heads with feathery or cottony hairs.

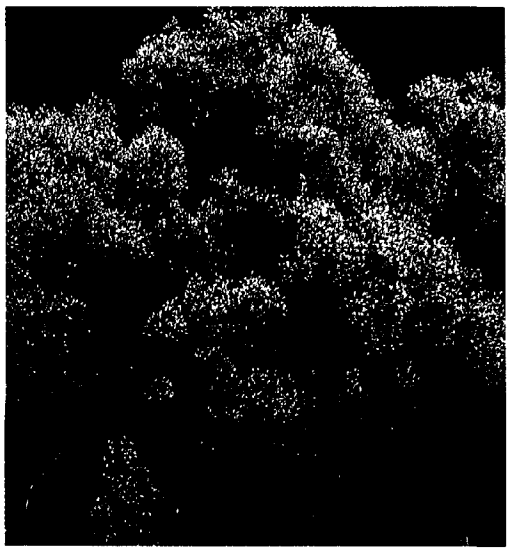
Recognition: shrub; leaves alternate, very narrow, often needlelike; small, rayless flower heads, without scales between flowers; heads cottony in fruit.

Habitat: T - borders and banks of salt, brackish and freshwater marshes, mangrove swamps and sloughs.

Distribution: throughout coastal Florida.

Flowering:





Bidens laevis **Compositae**
Bur-marigold

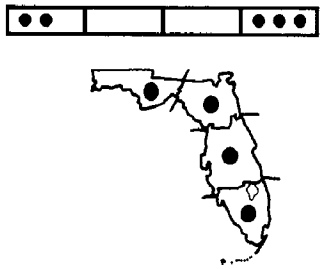
Herb, annual, or perennial in warm years, to about 4 ft. tall, in water, stems often sprawling to form mats; **leaves**: opposite, may be somewhat fleshy, lanceolate to elliptic, pointed, 3-6 in. long, margins finely saw-toothed; **flowers**: in flowerlike heads, these clustered, 2-2¾ in. across, rays usually 8, ½-¾ in. long, yellow, broadly elliptic or straplike, bracts of involucre in 2 series, the outer bracts green, a bit longer than the inner bracts that are yellowish to brownish; **fruits**: nutlets about ¼ in. long, flattened, with 2 long, barbed bristles.

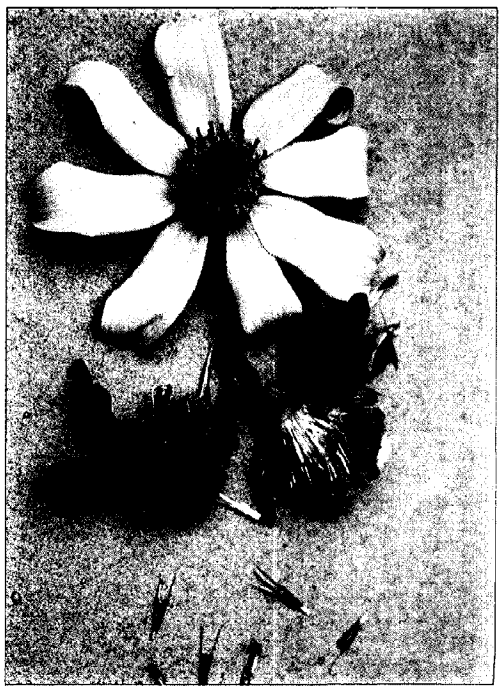
Recognition: herb; leaves opposite, simple, sessile, toothed; 2 distinct series of bracts around the flower head, yellow ray flowers; barbed spines or bristles on the nutlet.

Habitat: S - wet places, often in water, marshes, shores, sluggish streams, sloughs, ditches, wet meadows.

Distribution: throughout Florida.

Flowering:





Bidens mitis **Compositae**
Bur-marigold, Marsh Beggar-tick

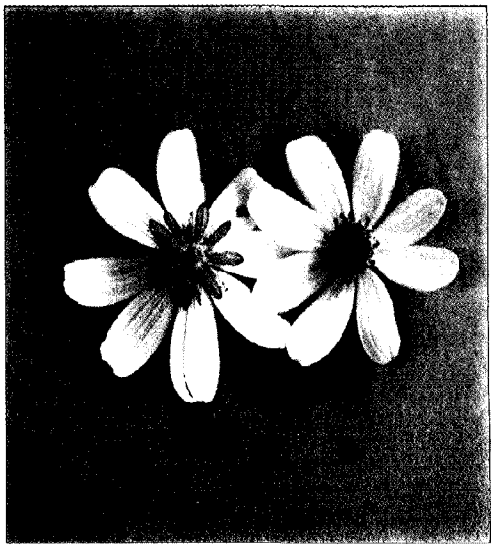
Annual **herb**, to 4 ft. tall, little- or much-branched; **leaves**: opposite, highly variable, usually stalked, lanceolate or narrowly lanceolate, more or less toothed to deeply lobed or pinnately compound with several leaflets; **flowers**: in flowerlike heads 2-2½ in. wide, rays yellow, 7-9, ⅜-1 in. long, elliptic to oblanceolate, rounded at tips; involucre with 2 series of bracts, the outer green bracts usually shorter, mostly rounded at tips, inner bracts yellow, yellowish green or reddish; **fruit**: a nutlet ⅛-3/16 in. long, flattened, with tiny bristles or hairs on upper edges, but without long bristles.

Recognition: herb; leaves opposite, some usually either deeply lobed or compound with several leaflets; 2 distinct series of bracts around flower head, yellow ray flowers; nutlet bristly on sides and top, but without barbed spines.

Habitat: S - open marshy areas, shallows in ponds and lakes, swamps, ditches, sloughs.

Distribution: throughout Florida.

Flowering:



Borrichia arborescens **Compositae**
Sea-daisy, Sea-oxeye

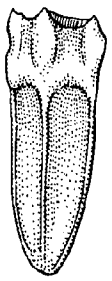
Perennial, bushy **herb**, to 3½ ft tall, from a short rhizome; young stem and leaves more or less densely gray hairy; **leaves**: opposite, narrowly lanceolate, smooth and succulent; **flowers**: in flowerlike heads, outer involucral bracts lance-ovate or ovate, pointed, inner bracts rounded; rays yellow; **fruit**: a nutlet, angled and somewhat flattened, about ⅛ in. long.

Recognition: bushy herb; leaves opposite, gray; yellow ray flowers; the involucral bracts are not spine-tipped, and the scales among the flowers are papery, not spiny

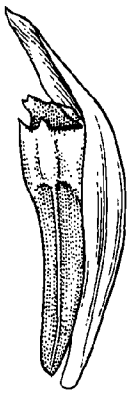
Habitat: S - coastal shores, or at edges of coastal forests and mangrove swamps.

Distribution: south Florida, Dade and Monroe Counties.

Flowering:



Fruit



Fruit and scale

Borrichia frutescens **Compositae**
Sea-daisy, Sea-oxeye

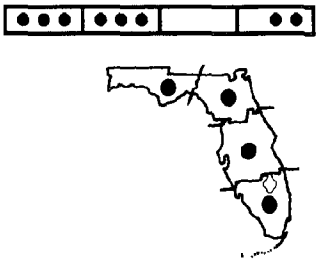
Perennial bushy **herb**, forming colonies, 6 in. to 3 ft. tall, few-branched, young parts covered with dense gray hairs; **leaves**: opposite, narrowly to broadly oblanceolate or elliptic, ¾-4 in. long, margins may have small teeth, tip with a tiny point; **flowers**: in flowerlike heads, outer involucral bracts ovate, pointed or spiny, inner bracts firmer, brown, scales within the head spinelike; rays yellow; **fruits**: small nutlets, 3- to 4-angled, gray, about ⅛ in. long.

Recognition: bushy herb; leaves opposite, gray-green; some involucral bracts are spine-tipped, and there are hard, rigid, spine-tipped scales among the flowers; yellow ray flowers.

Habitat: S - salt and brackish marshes and mud flats, edges of mangrove swamps, often weedy near coast.

Distribution: throughout coastal Florida.

Flowering:



Coreopsis nudata **Compositae**
Tickseed, Swamp Tickweed

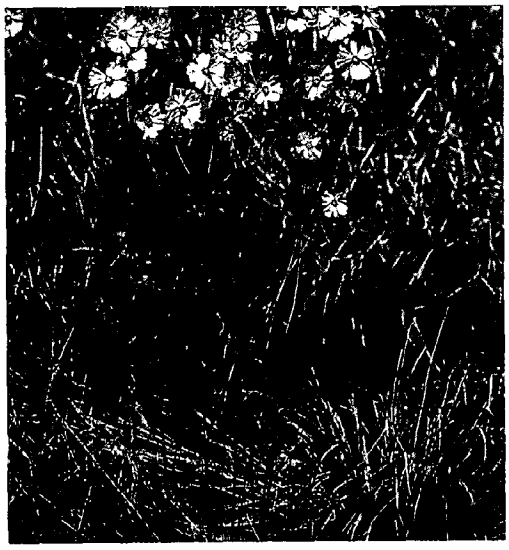
Perennial **herb**, with short rhizome, stem slender, mostly 15-40 in. tall; **leaves**: alternate, cylindrical, narrow and tapering, lower leaves 6-8 in. long, becoming smaller above, **flowers**: in dense, flowerlike heads, these few, long-stalked, involucre bell-shaped, about ⅜ in. wide, outer bracts usually shorter than inner bracts, inner bracts about ⅜ in. long, oblong, but tapering above, blunt, upper halves recurved; rays lavender or pinkish lavender, ½-1 in. long, widest above, somewhat 3-lobed, **fruit**: a nutlet, about ⅛ in. long, oblong, purplish brown, with toothed marginal wings and bristles about ½ as long as nutlet.

Recognition: perennial herb; leaves alternate, cylindrical; involucral bracts in 2 distinct series; lavender ray flowers.

Habitat: S - shallow water and wet boggy places, cypress ponds, depressions, prairies, wet pine savannas, pits and ditches.

Distribution: north Florida.

Flowering:



***Flaveria* spp.** **Compositae**
Yellowtops

Annual or perennial **herb**; **leaves**: opposite, sessile, the bases united (clasping stem), linear, lance-linear or elongate lanceolate; **flowers**: in dense yellow flower-like heads, involucre narrow, with 4-5 yellowish bracts; ray flowers lacking on some heads, usually only 1 ray each on other heads; **fruit**: a 10-ribbed nutlet.

Three species: *F. floridana*, with bell-shaped involucre, 9 to 15 flowers in each head, stalked inflorescence, and narrow leaves more than ¼ in. wide; *F. linearis*, with narrow involucre, 5 to 8 flowers in each head, stalked inflorescence, and narrow leaves less than ¼ in. wide; *F. trinervia*, with sessile inflorescence, 1 to 3 flowers in each head, and wide, toothed leaves.

Recognition: herb; leaves opposite, narrow; flower heads yellow, narrow, some with a single small ray.

Habitat: T** (except *F. trinervia*) - marshes, marsh-prairies, cypress swales, marly flats, pinelands, coastal hammocks, floodplains, saline flats, edges of mangrove swamps, waste places, roadsides.

Distribution: central and south Florida and coastal northwest Florida.

Flowering:

Iva spp. Compositae
Marsh-elders, Sump-weeds

Herbs to 6 ft. tall, or **shrubs** to 10 ft. tall, few- to many-branched; **leaves:** opposite, at least below, may be alternate above, narrow to lanceolate or elliptic, **flowers:** in flowerlike heads without ray flowers, in dense clusters, involucre bell- or top-shaped, bracts 3-9, flower unisexual, in involucres; **fruit:** small nutlets.

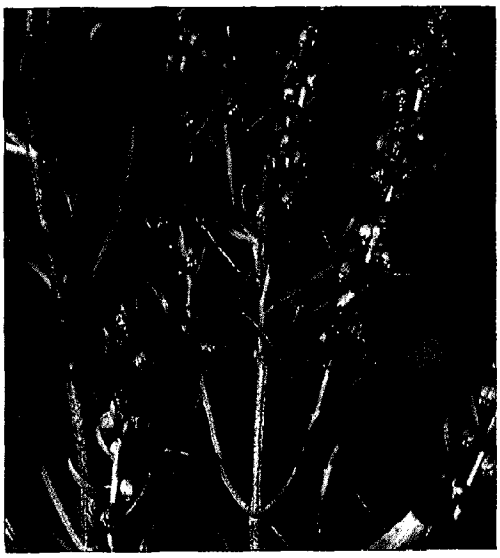
Four species: *I. annua*, annual herb, leaves stalked, toothed, roughly hairy; *I. frutescens*, shrub, leaves toothed, minutely hairy; *I. imbricata* (p. 185); *I. microcephala*, annual herb, leaves sessile, minutely hairy with smooth margins.

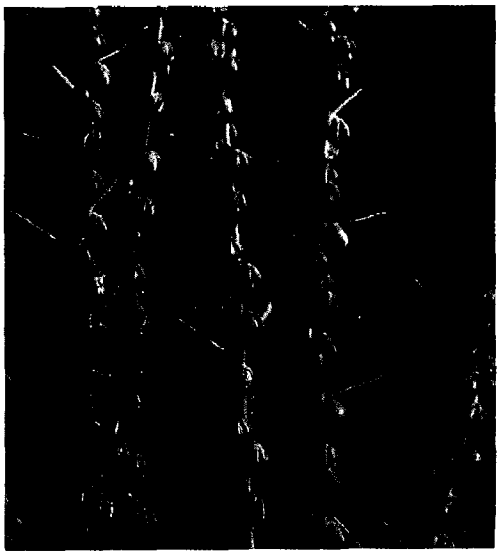
Recognition: opposite leaves (at least below), simple, usually narrow leaves; ragweedlike inflorescence.

Habitat: S (except *I. imbricata*, p. 187) - coastal marshes, mud flats and sloughs, ponds, pine savannas, flatwoods depressions, stream banks and sand and gravel bars, often in disturbed areas.

Distribution: throughout Florida.

Flowering:





Iva imbricata **Compositae**
Dune-elder

Perennial **herb** or subshrub with woody base; **leaves**: opposite on lower part of stem, alternate above, succulent, sessile, narrowly elliptic or oblanceolate, ¾-2 in. long, ⅛-⅜ in. wide, margins may have few teeth; **flowers**: unisexual, in dense, flowerlike heads, these in spikelike clusters; involucre broadly bell-shaped or spherical, with 6-9 rounded, overlapping bracts, with several female flowers around sides of head and male flowers in center; **fruit**: a brownish nutlet about ⅛ in. long.

Recognition: bushy herb; leaves opposite on lower part of stem, may be alternate above, thick, gray-green, with 3 main veins from the base, narrowly elliptic, lack hairs, may have few teeth; flower heads look like "bonnets," in spikes at branch tips.

Habitat: U - beaches and sand dunes.

Distribution: throughout coastal Florida.

Flowering:

Mikania scandens **Compositae**
Climbing Hempvine, Climbing Hempweed

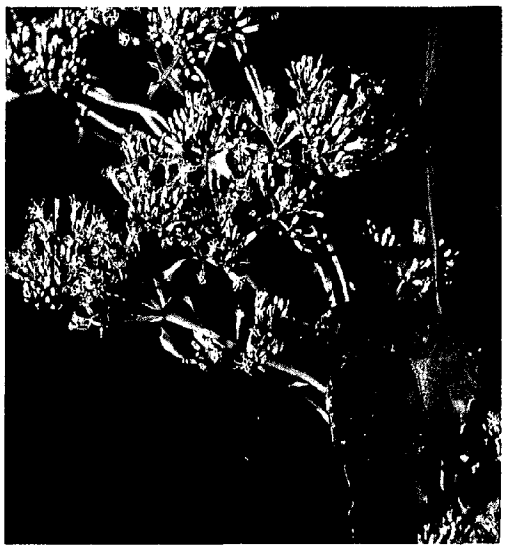
Herbaceous **vine**; **leaves**: opposite, stalked, blades palmately veined, ovate to triangular-ovate, bases usually notched or broadly notched, tips long-pointed, 1-4 in. long or more, and about as wide as long; margins may be wavy or have few teeth; inflorescence: axillary, stalked, longer than leaves; **flowers**: in dense flower-like clusters, these clustered; involucre cylindric, to ¼ in. long, with 4 bracts, 4 flowers per head; petals united, tubular, white, pink or bluish; **fruits**: nutlets, surrounded by cottony hairs that are showier than the flowers.

Recognition: vine; leaves opposite, triangular, arrowhead- or heart-shaped, hairy.

Habitat: S - coastal marshes or shrub thickets, edges of swamps and wet forests, prairies, bogs, roadside ditches, commonly in water.

Distribution: throughout Florida.

Flowering:



***Pluchea* spp.** **Compositae**
Marsh-fleabanes, Stinkweeds

Perennial **herbs**, with a strong, fetid odor; **leaves**: alternate, stalked or sessile, margins toothed or shallowly lobed; **flowers**: borne in dense flowerlike heads, these clustered, without ray flowers; involucral bracts in 1 series; the outer flowers are female, while those in the center of the head are bisexual; without scales between the flowers; **fruit**: a nutlet with hairlike bristles.

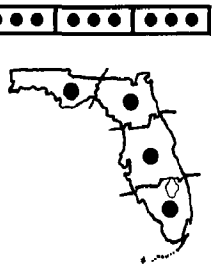
Eight species.

Recognition: herb; leaves alternate, variable, with a strong, fetid odor, margins toothed; whitish or pink flower heads without rays.

Habitat: T* (except *P. symphytifolia*, a woody shrub of south and southern central Florida) - moist forests and clearings, stream banks, swamps, marshes, wet meadows and thickets, some species in salt and brackish habitats.

Distribution: throughout Florida.

Flowering:



Ipomoea aquatica **Convolvulaceae**
Water-spinach

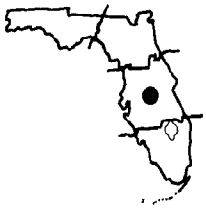
Herbaceous **vine**, climbing, creeping, or floating and rooting at joints, 6-9 ft. long; stem thick, hollow or spongy; **leaves**; alternate, long-stalked, variable, ovate, triangular, oblong or lanceolate, more or less arrowhead-shaped, base notched, with rounded or pointed lobes, 1-6 in. long, 3/8-3 in. wide; **flowers**: stalked, 1 or few at each joint; sepals 5, elliptic, about 3/8 in. long; petals united, broadly funnel-shaped, white, pink or pale lilac, often with a purple center, about 2 in. wide, with a narrow tube about 3/4 in. long; stamens 5, within the petals; **fruit**: a capsule about 5/8 in. long, with up to 4 gray seeds.

Recognition: trailing or floating vine; leaves alternate, blade widest near base; flowers broadly funnel-shaped, white, pink or pale lilac with purple center.

Habitat: **DNR** - streams and canals.

Distribution: not native; cultivated as a vegetable in Asia; occasionally cultivated in Florida; has escaped and may become a pest.

Flowering: , warm months in north.



Cornus foemina **Cornaceae**
Stiff Cornel, Swamp Dogwood

Shrub or small **tree** to about 20 ft. tall, **leaves**: opposite, deciduous, blades variable, broadly to narrowly elliptic, oblong-elliptic, ovate or lanceolate, bases tapering or rounded, tips pointed or long-pointed; inflorescence a flattish or convex cluster 1-4 in. across, **flowers**: sepals united, 4-lobed, with silvery hairs, petals 4, white, **fruit**: blue, fleshy, with a large stone, about ¼ in. across.

Recognition: shrub or tree; leaves opposite, strongly tapering at each end, or long-pointed; when leaf is torn, fibrous threads appear; inflorescence a broad, low dome, the upper surface uneven (see also *Viburnum*); flowers white.

Habitat: T - stream banks, pond and lake shores, wet thickets and clearings, floodplain forests, swamps, wet forests; also in well-drained forests.

Note: There are two very similar subspecies of *C. foemina*; subspecies *foemina* occurs in wetter habitats, while subspecies *microcarpa* is an upland form with thickly hairy twigs and harsh upper leaf surfaces.

Distribution: throughout Florida.

Flowering:

Nasturtium spp. **Cruciferae**
Water Cresses

Perennial **herbs** with somewhat succulent stems; **leaves**: alternate, pinnately compound, pinnately divided or simple; **flowers**: in terminal racemes, continuing in flower for weeks, with the flowers closely clustered at the tips as the inflorescence grows; sepals 4, petals 4, white or purplish white, obovate to oblanceolate; stamens 6, 2 short and 4 longer; **fruit**: a 2-parted, narrow pod, with many small seeds in 1 or 2 rows.

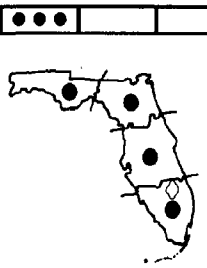
Two species: *N. microphyllum*, fruits 1/32 in. wide with seeds in 1 row in each chamber; *N. officinale*, fruits 1/16-1/8 in. wide, seeds in 2 rows in each chamber.

Recognition: alternate leaves, pinnately compound; fleshy herb with small white flowers on an inflorescence that continues to grow above the developing fruits.

Habitat: S - springs, spring runs, clear streams.

Distribution: not native; in scattered localities throughout Florida.

Flowering:



Cliftonia monophylla **Cyrillaceae**
Buckwheat Tree, Black Titi, Spring Titi

Shrub or small **tree**, often forming dense stands; **leaves**: alternate, evergreen, short-stalked or sessile, leathery, elliptic to elliptic-oblanceolate or oblanceolate, 1-4 in. long, ½-¾ in. wide, pointed or blunt, dark green above, pale beneath; inflorescence: 1 to several racemes at stem tips, before new growth in spring, **flowers**: sepals 5, united, petals 5, white or pinkish, about ⅜ in. long, stamens 10; **fruit**: few-seeded, with 2-5 angles, a long wing on each angle, about ¼-⅜ in. long.

Recognition: shrub or tree; leaves alternate, small, without teeth, tapering to both ends; the distinctive, triangular fruits at stem tips persist through much of the year.

Habitat: I - acid shrub-tree bogs along streams, swamps and in flatwoods depressions.

Distribution: north Florida south to Clay County.

Flowering:

Cyrilla racemiflora Cyrillaceae
Titi, He-huckleberry, Leatherwood

Shrub or small **tree**, commonly forming thickets, **leaves**: alternate, semi-evergreen or deciduous, short-stalked, blades elliptic-obovate or oblanceolate, the veins conspicuous on both surfaces, base tapering, tip pointed, blunt, rounded or notched, 1-4 in. long, ¼-1 in. wide; **flowers**: in elongated clusters (racemes) grouped at tip of previous season's growth (below current growth), sepals very small, petals 5, white or creamy white, ⅛-3/16 in. long, stamens 5, alternating with the petals, **fruit**: small rounded capsule, on spreading stalk, ⅛ in. across, with few seeds.

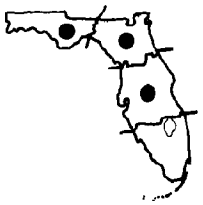
Recognition: shrub or tree; leaves alternate, tapering at bases, with few or no teeth; racemes clustered, with several arising at about the same spot on twig; brown fruit clusters persist through much of the year.

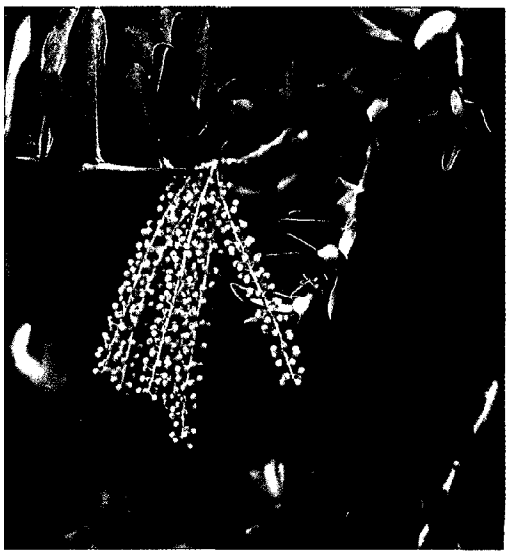
Note: the leaves of *Cyrilla* are extremely variable in size; smaller leaves tend to be narrow at the tips, while larger leaves are more rounded. Individual plants tend to have a single type of leaf.

Habitat: I - acid shrub-tree bogs, swamps, wet flatwoods, stream banks.

Distribution: north and central Florida.

Flowering:





***Leucothoe* spp.** **Ericaceae**
Fetterbushes

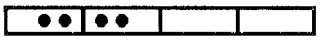
Shrub to 12 ft. tall; **leaves**: alternate, evergreen or deciduous, short-stalked, elliptic to ovate, usually shiny, margins without teeth or shallowly toothed; inflorescence: long racemes from axillary buds of previous year's growth; **flowers**: sepals 5, united; petals united, urn-shaped, white or tinged with pink, with 5 small lobes at opening; stamens 10; **fruit**: a 5-valved capsule with many seeds.

Three species: *L. axillaris*, with evergreen leaves and solid stems; racemes formed in fall; anthers straight; *L.* (=*Agarista*) *populifolia*, with evergreen leaves and air spaces in center of stem (a partitioned pith); racemes formed in spring; anthers "S"-shaped; *L. racemosa*, with deciduous leaves; racemes formed in fall; anthers straight.

Recognition: alternate leaves; urn-shaped flowers in racemes; brown capsule that splits into 5 sections.

Habitat: T - wet forests, forest depressions, swamps, shrub-tree bogs, open bogs.

Distribution: north and central Florida.

Flowering: 

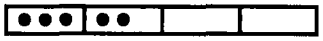
Lyonia lucida **Ericaceae**
Fetterbush, Staggerbush, Shiny Lyonia

Shrub, up to 12 ft. tall; **leaves**: alternate, evergreen, leathery, becoming smooth and dark glossy green above, elliptic to ovate or obovate, ¾-3 in. long, ⅜-1½ in. wide, bases tapering, tips pointed, margin without teeth; **flowers**: in nodding clusters on wood of previous year; sepals united, with narrow, pointed lobes; petals united, ¼-⅜ in. long, urn-shaped, white to deep pink; stamens 5; **fruit**: an ovoid capsule, about equal to the sepal lobes, becoming erect, with many small seeds.

Recognition: evergreen shrub; leaves alternate, thick, glossy, without teeth, a vein running along margin; white to deep pink, urn-shaped flowers clustered in umbels (several flowers attached at same point).

Habitat: T - shrub-tree bogs and bayheads, seasonally wet pine savannas and flatwoods, swamps, ponds, wet forests, sometimes on well-drained sands in scrub.

Distribution: throughout Florida.

Flowering: 

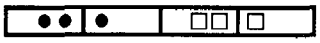
Quercus laurifolia **Fagaceae**
Swamp Laurel Oak, Diamond-leaf Oak

Large **tree**, bark dark, shallowly ridged and furrowed, somewhat scaly; **leaves**: alternate, deciduous (but often persisting into winter), short-stalked, blades oblanceolate or rather diamond-shaped, 2-5½ in. long, ½-2 in. wide; base tapering, tip blunt or rounded, occasionally 3-lobed; margins without teeth; nearly hairless beneath with a few tufts in the axils of the larger veins; seedling leaves commonly several-lobed; **flowers**; small, unisexual, male flowers in catkins; **fruit**: an acorn, acorn cup shallowly bowllike, covering about ⅓ of the acorn; acorn maturing in second season, ovoid to hemispheric, shell hairy within.

Recognition: tree; leaves alternate, mostly diamond-shaped, thin, hairless or nearly so, with a few tufts of hairs in axils of larger veins on underside; few if any leaves on a branch with tips sharp to the touch.

Habitat: **T** - floodplain forests, stream banks, cypress swamps, wet forests.

Distribution: throughout Florida.

Flowering: 

Quercus lyrata **Fagaceae**
Overcup Oak

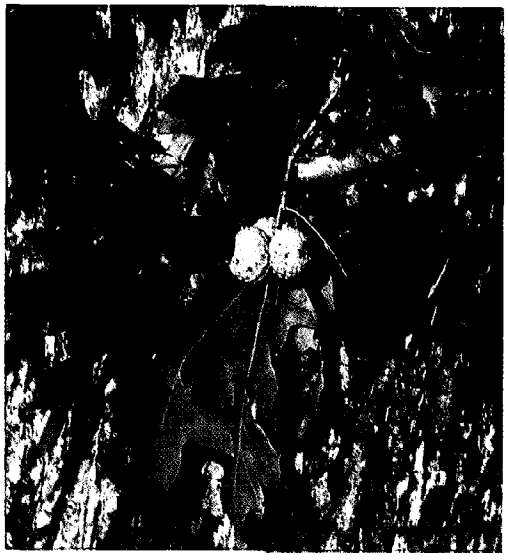
Large **tree**; bark light brownish gray, forming thick, irregular plates and broad ridges; **leaves**: alternate, deciduous, short-stalked; blades 3-8 in. long, 1-5 in. wide; irregularly lobed, somewhat fiddle-shaped and usually widest above the narrow "waist," lobes not bristle-tipped, base tapering, tips rounded to pointed; **flowers**: small, unisexual, male flowers in catkins; **fruit**: an acorn, maturing in one season, subspheric, about 1 in. wide, the acorn cup almost wholly covering the acorn.

Recognition: tree; leaves alternate, fiddle-shaped, widest above the narrow "waist"; acorn almost covered by cup.

Habitat: S - stream banks, floodplain forests.

Distribution: north and central Florida south to Pasco County.

Flowering:



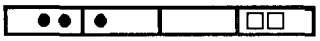
Quercus michauxii **Fagaceae**
Swamp Chestnut Oak, Basket Oak, Cow Oak

Large **tree**, bark light or silvery gray, scaly; **leaves**: alternate, deciduous, stalked, blades obovate to oval, regularly and evenly round-toothed to weakly lobed, usually with 10-15 teeth or lobes on each side, 2½-12 in. long, 1-7 in. wide; base abruptly tapering, tip pointed to blunt; **flowers**: small, unisexual, male flowers in catkins; **fruit**: an acorn, cup bowllike, 1-1½ in. wide, covering ⅓-½ of the acorn, acorn maturing in one season, ovoid to subspheric, inner shell without hair.

Recognition: tree; leaves alternate, blades widest toward tips, margins with 10-15 rounded shallow lobes on each side; usually pale, whitish, shreddy bark; the very similar *Q. prinus* has pointed teeth/lobes and a dense pubescence under the leaves, which are usually 5 in. or less in length.

Habitat: **T** - floodplain forests, wet forests and rich wooded slopes.

Distribution: north and northern central Florida.

Flowering: 

Quercus nigra **Fagaceae**
Water Oak

Large **tree**, bark dark grayish brown, shallowly and irregularly ridged and furrowed; **leaves**: alternate, slowly deciduous, stalked, extremely variable, but tapering at base and widest near the upper end, usually rounded to 3-lobed, lobes somewhat bristle-tipped; blades 2-4(6) in. long, 1-2½ in. wide; seedling and sucker leaves much more lobed and variable; **flowers**: small, unisexual, male flowers in catkins; **fruit**: an acorn, the cup saucerlike, covering only base of acorn, acorn maturing in second season, ovoid to subspheric, rounded, with a central point above, about ⅜ in. long, shell hairy within.

Recognition: tree; leaves alternate with a narrow base expanding to a rounded, often 3-lobed tip; hairless beneath except for few tufts of hairs in the axils of the main veins.

Habitat: T - stream banks, wet forests, upland forests.

Distribution: north and northern central Florida.

Flowering:

Sabatia bartramii **Gentianaceae**
Marsh-pink, Ten-petal Sabatia

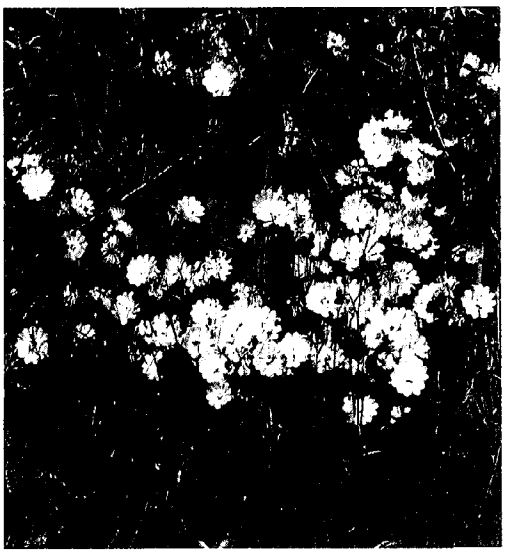
Perennial **herb** from a rhizome, stems erect, cylindrical or ridged, 12-30 in. tall, branches usually alternate; **leaves**: opposite, sessile, thick, subsucculent, lower leaves spreading, oblanceolate or oblong, tapering to the base, tip blunt or rarely pointed, 1½-3½ in. long, ½-¾ in. wide, the upper leaves narrower than the stem; **flowers**: 1-2 on each branch, stalked, sepals 7-14, united, with narrow, free lobes ¼-½ in. long; petals 7-14, the bases united, lobes 1-1¼ in. long, obovate, narrow at bases, rose-magenta to rose-pink (rarely white), with a yellow spot at base of each lobe; **fruit**: a capsule with many small seeds.

Recognition: herb; leaves opposite, sessile, narrowly lance-shaped, fleshy; flowers with 7-12 rose-pink petals; differs from *S. dodecandra* in that the lower and upper leaves are very different in shape, with the upper leaves very narrow.

Habitat: **T** - cypress-gum ponds, wet flatwoods, ditches, often in shallow water.

Distribution: throughout Florida, except in extreme south.

Flowering:



Sabatia calycina **Gentianaceae**
Marsh-pink, Coastal Plain Sabatia

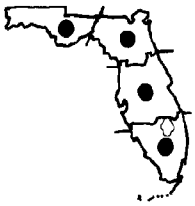
Perennial **herb** from a rhizome, stems erect, smooth or slightly ridged, branches mainly alternate; **leaves**: opposite, thin, blades 1-2½ in. long, ⅜-¾ in. wide, elliptic or wider above, tapering at bases, tips blunt or pointed; inflorescence of up to several 1-2 flowered clusters or sometimes a solitary flower; **flowers**: stalks 5- to 7-angled, sepals 5-6, united, with long, almost leaflike lobes, ⅜-1 in. long; petals 5-6(7), united at bases, lobes pale rose to pink or white, with yellow spots at bases, ¼-½ in. long; **fruit**: a spherical capsule.

Recognition: herb; leaves opposite, thin, elliptic; flowers with 5-6(7) petals; inflorescence branches alternate; base of flower (sepaline tube) not strongly ridged; sepals leaflike, as long as the petals or longer.

Habitat: T - swamps, wet forests, wet clearings, stream banks and ditches.

Distribution: throughout Florida.

Flowering:



Sabatia dodecandra **Gentianaceae**
Marsh-pink, Ten-petal Marsh-pink

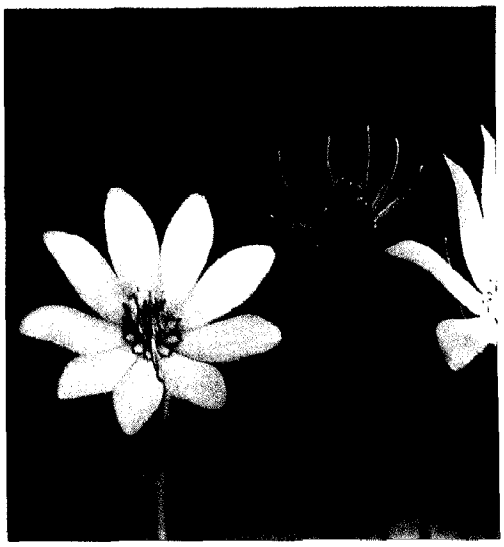
Perennial **herb** from a rhizome, 12-30 in. tall; stem cylindrical or angular; branches usually alternate; **leaves**: opposite, lanceolate, linear, elliptic or oblong, 1-1½ in. long, to ½ in. wide; tips pointed to blunt, base clasping or not; inflorescence of 1- to few-flowered clusters; **flowers**: stalked, sepals 9-12, united at base, lobes narrow, flat, ¼-¾ in. long; petals 9-12, united at bases, lobes ⅝-1 in. long, to 5/16 in. wide, deep rose-purple, rose-pink, pink or white, with yellow spots at base; **fruit**: a capsule.

Recognition: herb; leaves opposite, lance-shaped; with 9-12 rose-pink petals; in *S. dodecandra* there is not a sharp distinction between the lower and upper leaves, and the upper leaves (bracts) are much wider than the stem.

Habitat: S - ditches and stream banks, fresh and brackish marshes.

Distribution: north Florida.

Flowering:



Hypericum chapmanii **Guttiferae**
St. John's-wort

Erect **shrub** to 10 ft. tall, usually with a single main stem, becoming very tree-like; bark soft, spongy, thick, **leaves**: opposite, with smaller leaves clustered in axils, very narrow, the sides inrolled, glandular-dotted, ½-1 in. long, **flowers**: few, solitary or in 3's in upper leaf axils, sepals 4 or 5, petals 5, yellow or orange-yellow, stamens many, **fruit**: an ovoid capsule, about ¼ in. long, with many tiny seeds.

Recognition: erect shrub; leaves opposite, very narrow with sides inrolled, glandular-dotted; main stem leaves mostly ½ in. or longer; twigs cylindrical; bark very thick, spongy; flowers with 5 yellow petals.

Habitat: S - wet pine flatwoods depressions, cypress-gum ponds or depressions.

Distribution: coastal northwest Florida, from the Ochlockonee River to Santa Rosa County.

Flowering:

Hypericum fasciculatum **Guttiferae**
St. John's-wort, Sandweed

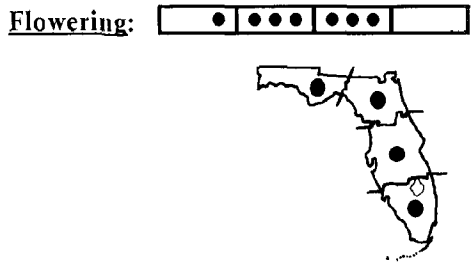
Erect **shrub** to 6 ft. tall, youngest twigs with a winged ridge on each side, bark corky, peeling off in thin sheets, never becoming very thick, **leaves**: opposite, with smaller leaves clustered in axils, very narrow, the sides inrolled, ½-1 in. long, glandular-dotted, **flowers**: in few- to many-flowered clusters, terminal or lateral, sepals 5, similar to leaves, to ¼ in. long, petals 5, ¼-⅜ in. long, bright yellow, stamens many, **fruit**: a conic-ovoid capsule, to ¼ in. long, with many tiny seeds.

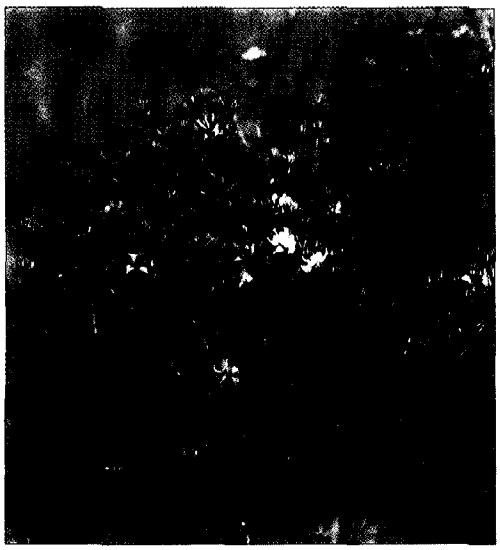
Recognition: erect shrub; leaves opposite, needlelike, glandular-dotted, main stem leaves ½ in. or longer; twigs with a winged ridge on each side; bark corky but peeling in thin sheets; flowers with 5 yellow petals.

Habitat: T - shores of ponds and lakes, cypress-gum ponds and depressions, wet flatwoods, ditches, borrow pits, bogs, stream banks, commonly in water.

Distribution: throughout Florida.

Flowering:





Hypericum lissophloeus **Guttiferae**
St. John's-wort, Smooth-barked St. John's-wort

Shrub to 12 ft. tall, the stems limber, with a whitish bloom, **leaves**: opposite, needlelike, sides inrolled, ½-¾ in. long, glandular-dotted, **flowers**: mostly solitary, or in clusters of 3, sepals 5, narrow, ¼-5/16 in. long, petals 5, bright yellow, to ½ in. long, stamens many; **fruit**: a conic-ovoid capsule, ¼ in. long, with many seeds.

Recognition: erect shrub; leaves opposite, needlelike, whitish, glandular-dotted, main stem leaves ½ in. or longer; bark whitish, peeling in thin plates on lower stem; upper stem smooth; yellow flowers with 5 petals.

Habitat: S - shores of sinkhole ponds and lakes, in water to 4 ft. deep.

Distribution: northwest Florida, known only in Bay and Washington Counties.

Flowering:

Hypericum myrtifolium **Guttiferae**
St. John's-wort, Myrtle-leaved St. John's-wort

Shrub to about 3 ft. tall, stems slender, with blue-white sheen, bark grayish, peeling in thin plates, becoming slightly corky if submersed, **leaves**: opposite, ½-1¼ in. long, ovate-triangular, the base notched and clasping the stem, tip blunt, leaves light green above, paler and whitish beneath, lower surface glandular-dotted, **flowers**: clustered at the branch tips, about 1 in. wide, sepals 5, whitish, ovate to elliptic, ¼-⅜ in. long, petals 5, yellow, obovate, about ½ in. long, stamens many, **fruit**: an ovoid or conic-ovoid capsule, dark brown to nearly black, about ⅜ in. long, with many, tiny seeds.

Recognition: erect shrub; leaves opposite, heart-shaped, sessile, glandular-dotted beneath; bark grayish (older bark whitish), peeling in thin plates; flowers yellow with 5 petals.

Habitat: T - pine flatwoods, cypress-gum depressions and ponds, edges of ponds, bogs.

Distribution: north, central and northern south Florida.

Flowering:

Hypericum nitidum **Guttiferae**
St. John's-wort

Shrub to 7 ft. tall, usually with several or many stems from the base, bark thin and tight, peeling off in small, thin flakes or strips, **leaves**: opposite, needlelike, the larger ones to 1 in. long, glandular-dotted, the edges inrolled, **flowers**: sepals 5, needlelike, to ⅛ in. long, petals 5, bright yellow, about ⅜ in. long, obovate, stamens many, **fruit**: an oblong-conic capsule about ⅛ in. long, with many tiny seeds.

Recognition: erect shrub; leaves opposite, needlelike, glandular-dotted, main stem leaves ½ in. or longer; bark brown, reddish or gray, peeling in small, thin flakes; flowers yellow with 5 petals.

Habitat: S - wet pine flatwoods, open shores of blackwater streams, sometimes in water, ditches, borrow pits, bogs.

Distribution: northwest Florida.

Flowering:

Triadenum virginicum **Guttiferae**
St. John's-wort, Marsh St. John's-wort

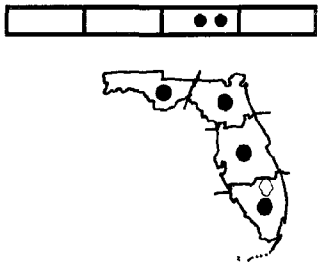
Perennial herb, simple below, with several to many ascending branches above, 15-30 in. tall; **leaves**: opposite, sessile, ovate to oblong, ¾-3 in. long, ⅜-1⅛ in. wide, pale green and glandular-dotted beneath; bases somewhat notched, often clasping the stem, tips rounded, occasionally notched or short-pointed; **flowers**: in clusters of few to several flowers at stem tips and leaf axils; sepals 5, oblong or oblong-elliptic, to ¼ in. long; petals 5, mauve-purple or pinkish, oblong to oblong-elliptic, to ⅜ in. long; stamens 9 in 3 clusters, alternating with 3 orange glands; **fruit**: a capsule about ⅜ in. long, ovoid-conical, with many small seeds.

Recognition: herb; leaves opposite, smooth, with parallel sides, sessile, bases rounded or notched, often clasping the stem; flowers purplish or pinkish.

Habitat: S - swamps, marshy shores, bogs, sometimes in floating mats of vegetation or on logs.

Distribution: north and central Florida and south to Martin County.

Flowering:



***Myriophyllum* spp.** **Haloragaceae**
Water-milfoils

Perennial **herb**, sometimes submersed, commonly with different types of foliage below and above waterline; stems ascending or spreading; **leaves**: usually whorled, the submersed leaves pinnately divided to featherlike structure; exposed leaves pinnately divided or merely toothed; **flowers**: in axils of leaves or bracts, bisexual or unisexual, usually with female flowers below and male flowers above; very small, 4 sepals, 4 petals (lacking in female flowers); stamens 4 or 8; **fruit**: 4-lobed, splitting into 4 nutlets.

Five species: *M. aquaticum* (not native), *M. heterophyllum*, *M. laxum*, *M. pinnatum*, *M. spicatum*.

Recognition: herb; leaves in whorls of 3-6, submersed leaves divided in numerous fine segments, and without teeth; in the submersed species the flowering stem has much shorter and less divided leaves.

Habitat: S - ponds, lakes, streams, ditches and canals, sometimes forming floating mats.

Distribution: throughout Florida.

Flowering:

***Proserpinaca* spp.** **Haloragaceae**
Mermaid-weeds

Herbs, stems usually sprawling, with the upper part more or less erect; **leaves** alternate, pinnately lobed or dissected, especially in the water (but these often exposed in drying pools), or merely deeply toothed, ovate to narrowly elliptic; **flowers**: bisexual or unisexual, tiny, borne in the leaf axils, parts in 3's; **fruit**: 3-angled, splitting into 2-4 nutlets.

Two species: *P. palustris*, with some or all leaves toothed, and *P. pectinata*, with all leaves pinnately divided.

Recognition: herb; leaves alternate, upper and lower often different from each other, toothed and/or pinnately divided; tiny flowers and fruits at leaf bases; fruits 3-angled.

Habitat: S - ponds, swamps, wet forests, ditches, wet clearings, shores.

Distribution: throughout Florida.

Flowering:

Liquidambar styraciflua **Hamamelidaceae**
Sweet Gum, Red Gum

Tree to 120 ft. tall, with grayish brown bark and often with winged or ridged twigs; **leaves**: alternate, deciduous, long-stalked, palmately veined and usually palmately 5-lobed and starlike, margin sharply and evenly saw-toothed; lobes pointed, leaf base broad, squarish or somewhat notched; **flowers**: unisexual, in dense, spherical heads, male flowers greenish yellow, female flowers pale green, heads larger; **fruit**: a dense cluster, forming a spiny ball, each capsule opening to release 1 or 2 small, winged seeds.

Recognition: tree; leaves alternate, star-shaped; fruit a spiny ball. Small seedlings might be confused with *Acer*, which has opposite leaves.

Habitat: T - moist forests, often in wet or swampy areas.

Distribution: north, central and northern south Florida.

Flowering:

Hydrolea **spp.** **Hydrophyllaceae**
Sky Flowers, Hydroleas

Perennial **herbs**, with runners, or the lower part of the stem sprawling and rooting, stems erect or ascending to about 2½ ft. tall, **leaves**: alternate, short-stalked, more or less lanceolate, often with spines in leaf axils, **flowers**: in axillary or terminal clusters, sepals united, 5-lobed, petals 5, united, blue, bell-shaped or wheel-shaped, about ½ in. wide or long, stamens 5, swollen at base, **fruit**: a spherical capsule, with many tiny seeds.

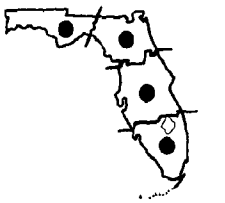
Three species: *H. corymbosum*, *H. quadrivalvis*, *H. uniflora.*

Recognition: herb; leaves alternate, narrow, thin textured; usually spiny, with runners underground or aboveground; sky blue flowers and rounded capsules.

Habitat: S - swampy forests, marshes, ditches and streams.

Distribution: throughout Florida.

Flowering:



Illicium floridanum **Illiciaceae**
Purple Anise, Florida Anise-tree, Stinkbush, Star-spice

Shrub or small **tree** to 15 ft. tall, **leaves**: alternate, evergreen, short-stalked, with a distinct, spicy or disagreeable odor when crushed, blades 3-6 in. long, long-elliptic or lance-elliptic, tips pointed or long-pointed, margin without teeth, **flowers**: solitary in leaf axils, stalked, sepals 3-6, falling off as buds open, ¼-½ in. long, petals 20-30, narrow, deep maroon, stamens 30-40, **fruit**: a flat, starlike cluster of 1-seeded segments, about 1 in. across.

Recognition: shrub or tree; leaves alternate, evergreen, elliptic, clustered near ends of twigs, with a characteristic spicy odor when crushed; flowers deep maroon with 20-30 petals; fruit star-shaped.

Habitat: T - wet ravine bottoms, swampy forests near streams.

Distribution: north and central Florida, often cultivated elsewhere.

Flowering:

Carya aquatica **Juglandaceae**
Water Hickory, Bitter Pecan

Medium to large **tree**; bark grayish, narrowly cracking and separating into scales; **leaves**: alternate, deciduous, stalked, pinnately compound, leaflets 11-15, lanceolate to narrowly oblong, somewhat asymmetrical, margins saw-toothed, mature leaflets smooth above, but hairy below at least along midrib; **flowers**: unisexual, male flowers in stalked catkins; **fruit**: angled, the seams ridged or winged, the husk splitting to the base.

Recognition: tree; leaves alternate, pinnately compound, with 7-13 narrow, often curved, leaflets, hairy beneath; fruit somewhat flattened, with ridges; bark grayish, scaly; similar to the cultivated pecan.

Habitat: T - floodplains, high stream banks and natural levees along streams.

Distribution: north, central and northern south Florida.

Flowering:

Lycopus rubellus **Labiatae**
Water-hoarhound, Bugle-weed

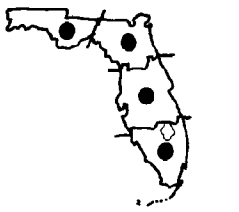
Perennial **herb**, forming long slender, freely branching runners that form tubers at tips; stems 15-50 in. tall, square, but angles rounded; **leaves**: opposite, short-stalked or sessile, base tapering, lance-ovate to elliptic or narrowly lanceolate, margins usually saw-toothed; **flowers**: sepals 5, united, with tapering lobes; petals 5, united, weakly 2-lipped; stamens 2; **fruit**: 4 nutlets.

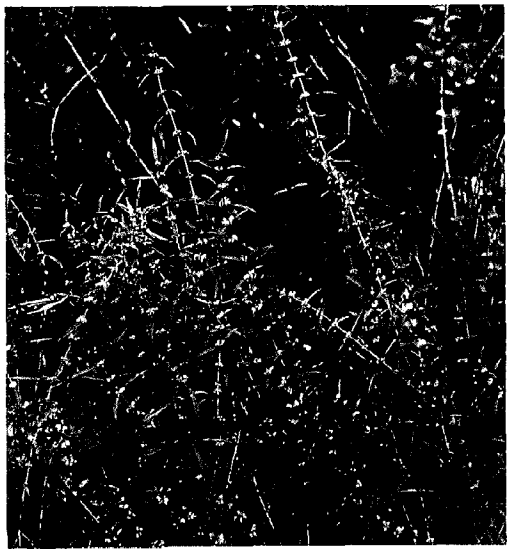
Recognition: herb; squarish stem; leaves opposite, narrow, coarsely toothed, covered beneath with tiny dots; small white flowers densely clustered at leaf bases.

Habitat: **T** - stream banks, marshy shores, wet forests, cypress-gum ponds and depressions.

Distribution: throughout Florida.

Flowering:





Litsea aestivalis **Lauraceae**
Pond-spice

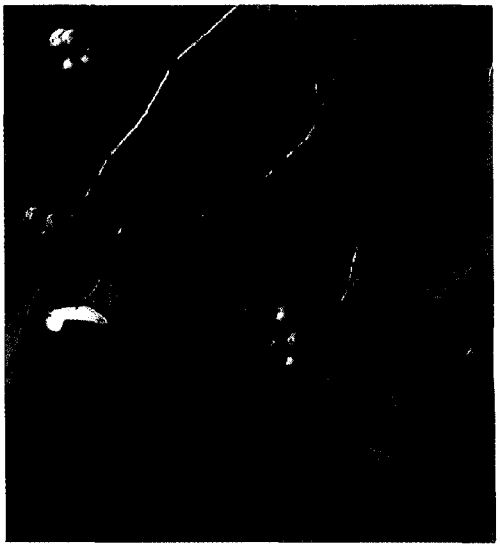
Much-branched **shrub** to about 9 ft. tall; branches zigzag; **leaves**: alternate, deciduous, short-stalked, narrowly elliptic, lanceolate or narrowly oblong, ⅜-1¼ in. long, to ⅜ in. wide; **flowers**: unisexual, M/F, in few-flowered axillary clusters, before leaves develop in spring, yellow, sepals 6, bases united, without petals; male flowers with 9-12 fertile stamens; **fruit**: fleshy, red, with a stone, about ¼ in. across.

Recognition: shrub; leaves alternate, small, blunt, pale beneath, with a characteristic spicy odor when crushed; branches spreading and somewhat zigzag.

Habitat: S - pond and swamp margins, cypress swamps.

Distribution: north Florida; quite patchy.

Flowering:



Persea borbonia **Lauraceae**
Red Bay

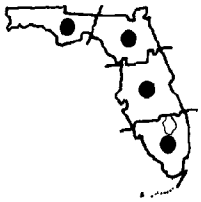
Shrub or small to large **tree**, to 70 ft. tall; **leaves**: alternate, evergreen, stalked, blades leathery, broadly lanceolate, elliptic or oblong, 2-8 in. long, 1-1½ in. wide, tapering at bases, tips pointed or long-pointed, both surfaces smooth or nearly so, dark green above, the lower surface whitish; inflorescence axillary, stalked, of several to many flowers; **flowers**: greenish yellow, sepals 6, in 2 sets of 3; fertile stamens 9; **fruit**: fleshy, with a stone, dark blue or black, about ⅜ in. long.

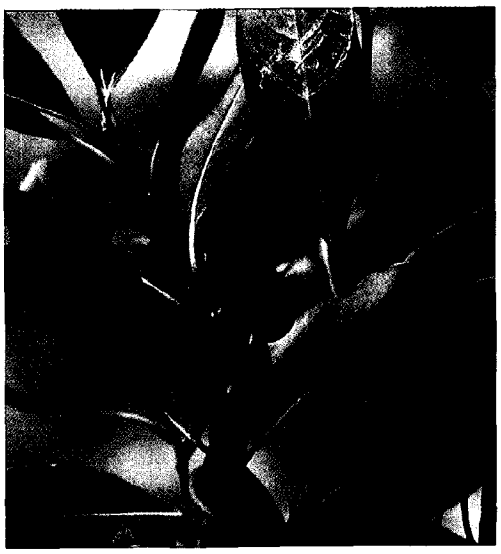
Recognition: shrub or tree; leaves alternate, evergreen, often white beneath (microscopic appressed hairs on underside not apparent to naked eye), very aromatic when crushed; bark very rough on large trees; twigs smooth.

Habitat: T - hammocks, sand hills and coastal dunes.

Distribution: throughout Florida.

Flowering:





Persea palustris **Lauraceae**
Swamp Bay

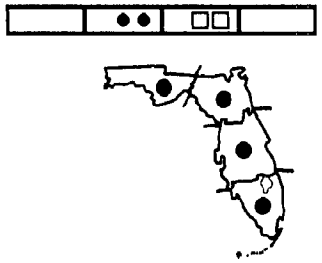
Shrub or small **tree**, to 40 ft. tall; young twigs and leaf stalks densely hairy; **leaves**: alternate, evergreen, stalked, blades leathery, elliptic, lanceolate, oblanceolate or oblong, 2½-4 in. long, ¾-1¼ in. wide, tapering at bases, tips pointed or long-pointed, upper surface smooth, lower surface whitish, with more or less dense felty hairs; inflorescence axillary, stalked, of several to many small flowers; **flowers**: greenish yellow, sepals 6 in 2 sets of 3, fertile stamens 9; **fruit**: fleshy, with a stone, dark blue or black, about ⅜ in. long.

Recognition: shrub or tree; leaves alternate, evergreen, aromatic when crushed, hairs on lower surface erect and sometimes evident to naked eye; young twigs and leaf stalks are densely hairy.

Habitat: S - swamps, wet forests, banks in and near marshes.

Distribution: throughout Florida.

Flowering:



Gleditsia aquatica **Leguminosae**
Water-locust

Tree to 70 ft. tall, sometimes shrubby, bark grayish to blackish, rather smooth, narrowly furrowed, or warty, bearing simple or few-branched thorns 3-5½ in. long, **leaves**: alternate, deciduous, pinnately or bipinnately compound, with 9-18 pairs of leaflets on each division, leaflets lanceolate, lance-oblong or ovate-oblong, 1-1½ in. long, **flowers**: unisexual, usually M/F, small, the male flowers in dense racemes, the female racemes loose and few-flowered, sepals united, 3- to 5-lobed, petals 3-5, about 3/16 in. long, yellowish or greenish yellow, stamens 3-10, **fruit**: a 1- to 3-seeded pod, flat, nearly as wide as long.

Recognition: tree with branched thorns; leaves alternate, deciduous, pinnately compound; the Honey-locust, *Gleditsia triacanthos*, is similar, but has the stalks and rachises of the leaves notably hairy and the pods are long and many-seeded.

Habitat: T - riverine swamps and floodplains, stream banks, and along small streams in wet forests.

Distribution: north and central Florida.

Flowering: , the fruit persisting for months.

Mimosa pigra **Leguminosae**
Catclaw Mimosa, Giant Sensitive-plant

Sprawling or erect **shrub**, to 10 ft. tall; stem thorny, young stems with coarse, bristly hairs; **leaves**: alternate, spiny, bipinnately compound, 4-10 in. long, with many narrowly oblong leaflets ⅛-¼ in. long; leaves are "sensitive" and fold if touched or shaken; **flowers**: in dense, stalked, spherical clusters ⅝-¾ in. across, these clustered near the growing stem tip; flowers tiny, whitish or pink, sepals united, petals united, 4-lobed, about ⅛ in. long, stamens 8, filaments to ⅜ in. long, swollen and pinkish above; **fruit**: beanlike, bristly, 2½-3 in. long, ⅜ to nearly ½ in. wide, breaking up into 7-20 1-seeded segments.

Recognition: thorny shrub with bristly stems; leaves alternate, thorny, bipinnately compound with many leaflets.

Habitat: **DNR** - lake margins, wet ditches, stream banks.

Distribution: not native; south and southern central Florida.

Flowering: , probably throughout the year.

***Utricularia* spp.** **Lentibulariaceae**
Bladderworts

Aquatic or semi-aquatic **herbs**, without roots; stems and leaves not clearly distinct, bearing small urnlike bladders; growing on wet soil, attached under water, free in water or floating; **leaflike parts**: may be finely divided; inflorescence: erect, with 1 to several flowers; **flowers**: sepals united, 2-lobed, unequal; petals 5, united and strongly 2-lipped, often with a spur; yellow, white or pink to purple; stamens 2; **fruit**: a 2-valved capsule with many tiny seeds.

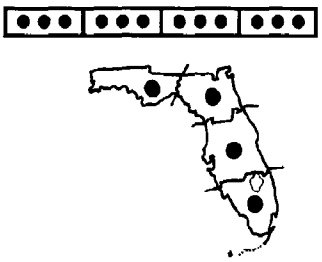
Fourteen species.

Recognition: herbs; flowers 2-lipped, often with spurs; when these are lacking, the presence of small insect-trap bladders will distinguish the genus from all other Florida plants.

Habitat: S - ponds, lakes, pools and ditches, shores, bogs; some species flower abundantly in the mud of drying pools.

Distribution: throughout Florida.

Flowering:



Decodon verticillatus **Lythraceae**
Swamp Loosestrife, Water-willow

Perennial, lower stem woody, upper stems herbaceous, the bark very soft-corky under water, peeling off in long, cinnamon-colored strips above water, stems arching, often rooting at the tips, **leaves**: opposite or 3 at a joint, short-stalked, lanceolate or elliptic-lanceolate, to 8 in. long, 2 in. wide, pointed; **flowers**: axillary, about 1 in. across, in short-stalked clusters, sepals united, with 5-7 lobes, petals 5(-7), magenta, stalked, lanceolate, crinkled, stamens 8-10, varying in length; **fruit**: a capsule, covered by the floral tube, seeds about 1/16 in. long, shiny.

Recognition: sprawling woody herb; leaves opposite or whorled (in 3's), willow-like; flowers with 5(-7) magenta petals; flowers and fruits are clustered at leaf bases.

Habitat: **S** - swamps, swampy shores of streams, pools and bogs.

Distribution: north and central Florida.

Flowering:

Liriodendron tulipifera **Magnoliaceae**
Yellow-poplar, Tulip-tree

Tree to 90 ft. tall; **leaves**: alternate, deciduous, long-stalked, blades about as wide as long, saddle-shaped, 4- to 6-lobed, the tip broadly notched, base widely rounded or somewhat notched; **flowers**: solitary, stalked, tulip-shaped; sepals 3, shed as flower opens; petals 6, broad, erect, greenish yellow, each with a large orange blotch; **fruit**: a tulip-shaped cluster of 2-seeded, winged segments that fall, leaving a persistent core.

Recognition: tree; leaves alternate, long-stalked, large, saddle-shaped, 4- to 6-lobed; leaf scars encircle stem.

Habitat: **T** - wet and moist forests; mainly along spring runs in Taylor, Lafayette, Suwannee, Columbia, Baker and Duval Counties and to the south.

Distribution: north and north central Florida south to Pasco County.

Flowering:

Magnolia virginiana **Magnoliaceae**
Sweet Bay

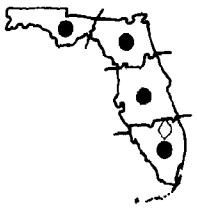
Shrubs or **trees** to 75 ft. tall; bark pale gray, nearly smooth; **leaves**: alternate, evergreen (in Florida), short-stalked, blades long-elliptic, oval or oblong, 2½-6 in. long, ¾-2½ in. wide, blunt to pointed at both base and tip; margins without teeth; upper surface light green and smooth, lower surface pale gray-green, becoming smooth; **flowers**: solitary at branch tips, 2-3 in. across when open; sepals 3, quickly falling; petals creamy white, 9-12, 1¼-2½ in. long, elliptic to oblanceolate; stamens numerous; **fruit**: a conelike cluster of fruits that open to reveal red seeds about ¼ in. long.

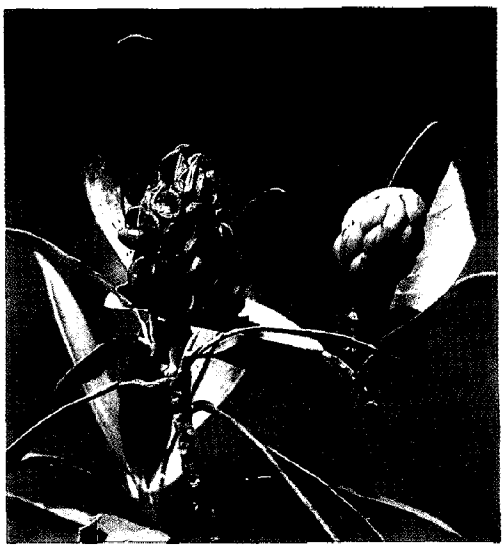
Recognition: shrub or tree; leaves alternate, evergreen, leathery, whitish beneath, hairy beneath when young, margins without teeth; circular leaf scars.

Habitat: S - wet forests, savannas, flatwoods, streams, bogs and swamps.

Distribution: throughout Florida.

Flowering:





Hibiscus grandiflorus **Malvaceae**
Big Rose-mallow, Swamp Hibiscus

Large perennial **herb** to 10 ft. tall, with few to several stems from the base, all stems hairy with branched (stellate) hairs, velvety, wearing off of older stems, **leaves**: alternate, stalked, stalks to 4 in. long, blades 4-7 in. long, about 6½ in. wide at bases, ovate, often 3-lobed, margins with irregular, blunt teeth, densely hairy above and below, **flowers**: axillary, each flower with about 10 narrow bracts below the sepals, sepals united, 1-1½ in. long, petals 5, pink (rarely white), red-purple at bases, 4½-5½ in. long, narrow at bases, rounded at tips, **fruit**: a capsule, ovoid or rounded, 1-1⅓ in. long, with a short point, hairy with shaggy and branched hairs mixed, seeds many, about 3/16 in. long, ovoid, dark brown to nearly black.

Recognition: large herb with several stems from base; leaves alternate, large, hairy on both surfaces, usually 3-lobed, margins with irregular teeth; stems with branched hairs; flowers large, pink to white with red-purple spot in center; fruit with shaggy, branched hairs.

Habitat: S - marshes, marshy shores of ponds, lakes, streams, swamps, glades, sloughs, ditches, canals, commonly in water.

Distribution: throughout Florida.

Flowering:

***Kosteletzkya* spp.** **Malvaceae**
Marsh-mallow

Perennial **herbs**, with 1 to several stems from the base, each branched in upper part, to 7 ft. tall, all parts bristly-hairy; **leaves**: alternate, ovate to triangular or lanceolate, or variously lobed, base may be deeply notched, squarish or rounded, margins with irregular teeth; **flowers**: solitary in leaf axils, stalked, with 7-10 narrow bracts below the sepals, sepals united, with 5 lobes; petals white or pink, 5, ⅜-1¼ in. long; **fruit**: a 5-angled capsule about ½ in. wide, with stiff bristles, containing up to 5 seeds.

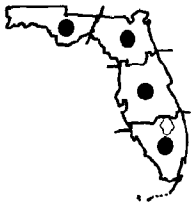
Two species: *K. pentasperma*, petals white, about ⅜ in. long; sepal lobes shorter than width of capsule, and *K. virginica*, petals pink, ¾-1¼ in. long; sepal lobes longer than width of capsule.

Recognition: erect perennial herb; leaves alternate, may be lobed or not; flowers white or pink with yellow center, 5 petals; capsule coarsely hairy, with 1-seeded sections.

Habitat: S - salt, brackish or fresh marshes, marshy shores, sloughs, ditches, borders of mangrove and other swamps, wet forest clearings.

Distribution: throughout Florida.

Flowering:



***Rhexia* spp.** **Melastomataceae**
Meadow Beauties

Perennial **herbs**, stem erect, 4-angled, usually with conspicuous hairs; **leaves**: opposite, very narrow to elliptic or ovate, usually with 3 main veins; **flowers**: few to many, sepals united, forming a tube above the ovary, lobes 4; petals 4, delicate and soon falling, white, pink or yellow; stamens 8, the anthers long or very long, and curved; ovary below sepal lobes; **fruit**: an urn-shaped capsule with many small seeds, seeds usually shaped like a snail shell.

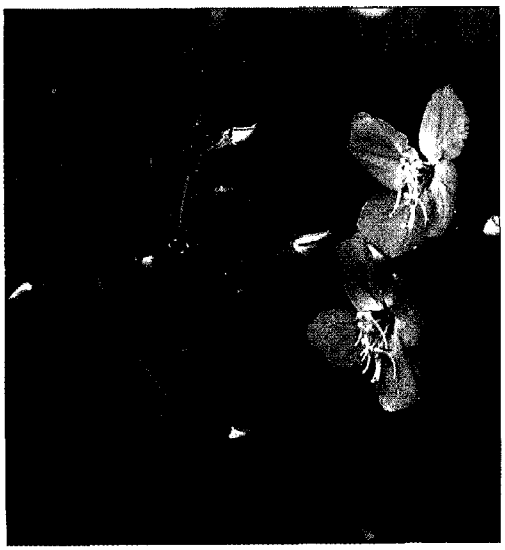
Ten species.

Recognition: herb; squarish stem; leaves opposite, usually 3-veined; 4 petals that fall off readily when flower is disturbed, bent anthers; fruit an urn-shaped capsule; often with conspicuous hairs on stem, leaves and capsule.

Habitat: T (except species on next two pages) - wet pine savannas and flatwoods, bogs, seepage areas, ponds, ditches, moist roadsides.

Distribution: throughout Florida.

Flowering:



Rhexia parviflora **Melastomataceae**
Meadow Beauty

Perennial **herb**, 4-16 in. tall, stem square at mid-stem; **leaves**: opposite, short-stalked, broadly ovate to elliptic, ⅝-1¼ in. long; margins finely toothed; **flowers**: borne with leaflike bracts (the inflorescence thus appearing leafy); sepals united, forming a short tube above the ovary, lobes 4, short-triangular, short-pointed; petals 4, white or very pale pink, about ⅜ in. long; **fruit**: a capsule with many small seeds.

Recognition: herb; leaves opposite, 3-veined, small but relatively wide; inflorescence leafy, with white or pale pink flowers; fruit an urn-shaped capsule.

Habitat: **S** - wet sands or peaty sands, borders of cypress ponds, borders of evergreen shrub bogs and *Hypericum* ponds.

Distribution: known only from Franklin County in northwest Florida.

Flowering:

Rhexia salicifolia **Melastomataceae**
Meadow Beauty, Panhandle Meadow Beauty

Perennial **herb**, stem erect, simple or branched, 8-20 in. tall, stem square at mid-stem, with the angles slightly winged; **leaves**: opposite, narrowly elliptic, oblanceolate or linear, ⅝-1½ in. long, to 3/16 in. wide, the leaves twisted so that the blades appear to be flattened from side to side; **flowers**: few to many, sepals united, forming a short tube above ovary, lobes 4, narrowly triangular; petals 4, lavender-rose, about ½ in. long; **fruit**: a capsule with many small seeds.

Recognition: herb; leaves opposite, 3-veined, narrow, twisted so that they appear laterally flattened; fruit an urn-shaped capsule.

Habitat: **S** - sandy shores or exposed shores of lime sinkhole lakes, lime sink cypress ponds and coastal interdune swales.

Distribution: northwest Florida, from Walton to Leon Counties.

Flowering:

***Nymphoides* spp.** **Menyanthaceae**
Floating-hearts

Perennial aquatic **herbs** with rhizome in mud; having slender stems, each with 1 to several leaves, arising from the rhizome; **leaves**: alternate, stalked, floating, broad, ovate to reniform, sometimes notched at the base, 1-6 in. long; inflorescence of several small flowers arising from the stem (seeming to arise from the leaf stalk), often with thick roots arising near the inflorescence; **flowers**: each on a slender stalk, with 5 small, white petals; stamens 5; **fruit**: a small capsule with many seeds.

Two native species: *N. cordata* with the leaves smooth beneath, and *N. aquatica* with the leaves rough beneath, and often wider; *N. indica* is sometimes grown in aquaria and has been reported in Florida.

Recognition: herb; leaves alternate, rounded with notch at base, like a small water-lily, but with small flowers arising below the leaf, often with a cluster of thick banana-shaped roots arising at the same place; stem sometimes with reddish dots.

Habitat: S - ponds, lakes, sluggish streams, ditches and canals.

Distribution: throughout Florida (*N. cordata* mainly in northwest Florida).

Flowering:

Myrica cerifera **Myricaceae**
Wax-myrtle, Southern Bayberry

Shrub or small **tree** to about 20 ft. tall, commonly forming colonies; **leaves**: alternate; evergreen, aromatic, short-stalked, more or less oblanceolate, tapering at bases, pointed at tips, margins few-toothed in upper half, 2-4 in. long, ½-¾ in. wide, both surfaces glandular-dotted; **flowers**: unisexual, M/F, in dense catkins; **fruits**: hard-fleshy, with a stone, about ⅛ in. across, gray-waxy.

Recognition: shrub or tree; leaves alternate, thin, with few irregular teeth, with tiny brown dots on both surfaces, characteristic odor when crushed; from a distance, the leaves have a distinctive brownish yellow tinge.

Habitat: T** - fresh and brackish banks, shores, flats, swales, pine savannas and flatwoods, swamps, wet hammocks, mixed forests.

Distribution: throughout Florida.

Flowering:

Myrica inodora **(misspelled as *M. inodorata*)** **Myricaceae**
Odorless Wax-myrtle

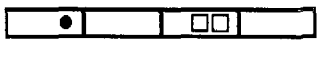
Shrub or small **tree**, with smooth, light gray bark; **leaves**: alternate, 1½-3 in. long, ½-1¼ in. wide, evergreen, leathery, alternate, short-stalked, elliptic, oblanceolate or narrowly obovate, tapering at base, tip rounded or blunt, margins smooth; **flowers**: unisexual, M/F, in dense catkins; **fruit**: about ¼ in. across, dark brown or nearly black.

Recognition: shrub or tree; leaves alternate, evergreen, leathery, widest near rounded tips, margins smooth, often rolled under, odorless when crushed; fruit black, in short spikes.

Habitat: T - shrub-tree bogs, bayheads, and swamps, especially with *Cyrilla racemiflora.*

Distribution: northwest Florida.

Flowering:



Melaleuca quinquenervia (*M. leucadendron*) Myrtaceae
Punk Tree, Bottlebrush Tree, Paper-bark Tree, Melaleuca, Cajeput

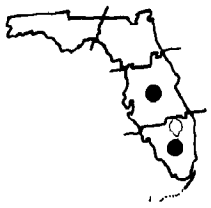
Tree, to about 70 ft. tall; bark whitish or pale buff, spongy, peeling off in many layers; **leaves**; alternate, evergreen, simple, short-stalked, narrowly elliptic, the main veins more or less parallel, 1½-5 in. long; **flowers**: crowded in bottlebrush-like spikes at branch tips, or these spikes clustered; sepals 5, united, with short, blunt lobes; petals 5, white, obovate or circular, about ⅛ in. long; stamens many, ⅜-⅝ in. long; ovary below sepal lobes (inferior); **fruit**: a short, cylindric or squarish, woody capsule with many tiny seeds.

Recognition: tree; leaves alternate, narrow, with parallel veins; bark spongy, peeling; white bottlebrush-inflorescences and persistent, woody fruits.

Habitat: I - in disturbed and natural habitats, often in wetlands.

Distribution: not native; south and central Florida north to Hernando County.

Flowering: , fruit usually present.



Nelumbo spp. **Nelumbonaceae**
Lotuses

Large aquatic perennial **herbs** with long rhizome, from which the leaves and flowers arise; **leaves**: alternate with long, stiff stalks, leaf blade circular, centrally attached like an umbrella, 15-40 in. wide, most rising above the water surface in shallow water, or floating in deeper water (may also be found below water in clear ponds with fluctuating water level); **flowers**: solitary, on a long, stiff stalk, rising above the leaves, 4-6 in. wide, yellow or pink, with many petals and stamens; **fruit**: short, broadly cone-shaped, the upper surface flat, each seed borne in a circular pit, seeds hard, nutlike, about ½ in. across.

Two species, the native *N. lutea*, Lotus-lily, with yellow flowers, and the introduced *N. nucifera*, Egyptian Lotus, with pink flowers.

Recognition: herb; leaves alternate, large, centrally attached, umbrella-like, often held above surface of water; flowers yellow or pink; fruit resembles a showerhead.

Habitat: S - ponds, lakes, marshes, prairies and sluggish streams.

Distribution: throughout Florida.

Flowering:

***Nuphar* spp.** **Nymphaeaceae**
Spatterdocks, Yellow Cow-lilies, Yellow Water-lilies

Large, perennial aquatic **herb**, from a large rhizome; **leaves**: alternate, heart-shaped, broad, submersed (thin and often crisped), floating or emergent; **flowers**: at or above water surface, with few green to yellow petallike sepals; petals many but very small, yellow; stamens many; **fruit**: stalk not coiling (fruit usually borne at or above water surface), seeds many.

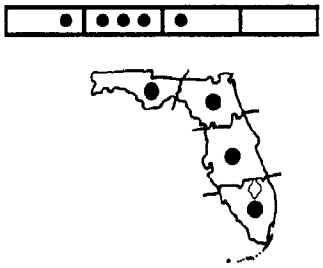
One highly variable species: *N. luteum*.

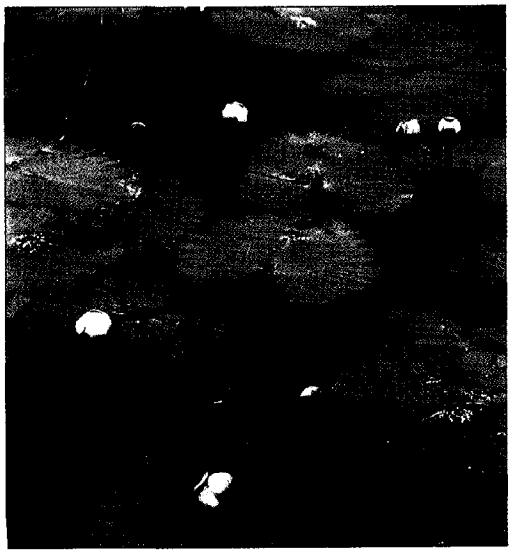
Recognition: herb; leaves alternate, heart-shaped, usually longer than wide, deeply notched at base with rounded lobes; flowers yellow.

Habitat: S - ponds, lakes, sluggish streams, pools, ditches and canals.

Distribution: throughout Florida.

Flowering:





Nymphaea spp. **Nymphaeaceae**
Water-lilies

Large perennial aquatic **herb**, from a long, thick rhizome; **leaves**: alternate, long-stalked, usually floating (submersed leaves thinner and more delicate); blade broad or sub-circular, deeply notched at base, the lobes at base usually pointed; **flowers**: attractive, white, pink, blue or yellow, each on a separate stalk, borne at or above water surface (some open only during the night, others only during the day); many petals and stamens; **fruit**: stems coiling, developing under water.

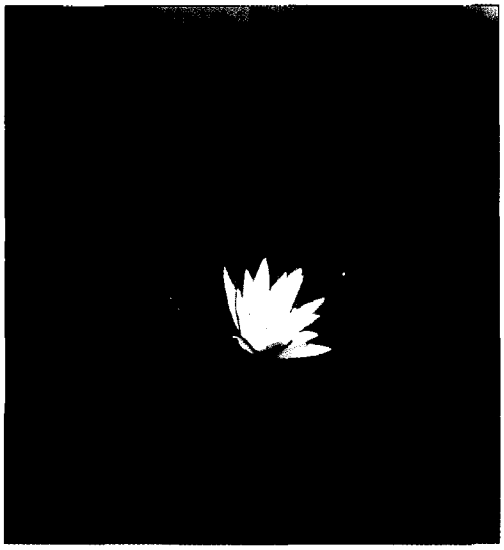
About 9 species and hybrids, some not native.

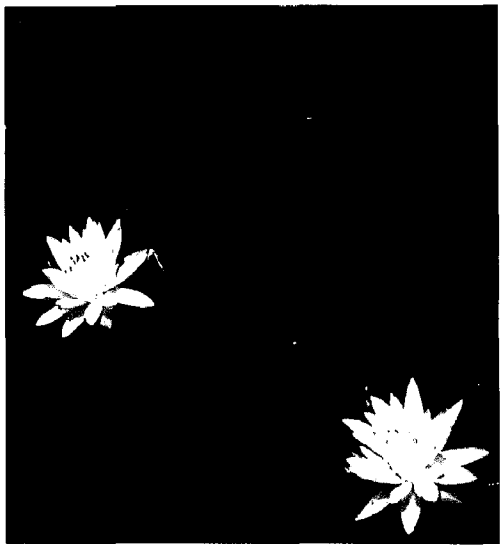
Recognition: herb; leaves alternate, floating, nearly circular, notched to center, lobes at base pointed; flowers large, conspicuous, with many petals.

Habitat: S - ponds, lakes and sluggish streams.

Distribution: throughout Florida.

Flowering:





Nyssa aquatica **Nyssaceae**
Water Tupelo

Tree to 90 ft. tall, with swollen base; **leaves**: alternate, deciduous, long-stalked, the stalks 1¼-2½ in. long; blades ovate, or ovate-oblong, thick, almost leathery, 2½-12 in. long, bases broadly tapering, rounded or notched, tips usually pointed or long-pointed; margins often with few large teeth; leaves pale beneath; **flowers**: unisexual, M/F, male numerous, in compact, ball-like clusters (like *N. ogeche*), female solitary, stalked; **fruit**: fleshy, with a stone, dark blue or purple when ripe, ⅝-1¼ in. long.

Recognition: tree; leaves alternate, large, long-stalked, almost leathery, some blades more than 4 in. long and the stalks 1¼-2½ in. long; fruits dark blue or purple, the stalks as long as the fruits.

Habitat: S - usually growing in water, floodplain forests, swamps.

Distribution: north and central Florida south to Levy County.

Flowering:

Nyssa ogeche **Nyssaceae**
Ogeechee Tupelo, Ogeechee-lime

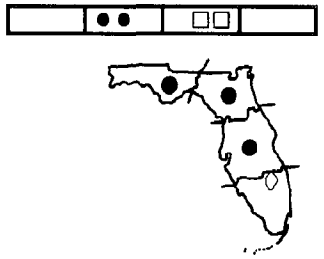
Small to medium **tree**, often with several trunks from base, or trunk crooked or distorted; **leaves**: alternate, deciduous, stalked, stalks mostly ⅜-¾ in. long; blades elliptic or subelliptic, narrowly obovate or oblong-oval, to 6 in. long and 3 in. wide, base usually tapering, tips pointed to rounded, margin rarely with few large teeth; young leaves soft-hairy; **flowers**: unisexual, M/F, male flowers numerous, in compact, ball-like clusters; female solitary, stalked; **fruit**: fleshy, with a stone, becoming red at maturity, ¾-1½ in. long.

Recognition: tree; bases often multitrunked or crooked; leaves alternate, large, some blades more than 4 in long, stalks mostly less than 1 in. long; fruit red, the stalk shorter than the fruit.

Habitat: S - stream banks, swamps, bayous, pond and lake margins.

Distribution: north Florida and south to Lake County.

Flowering:



Nyssa sylvatica var. *biflora* (*N. biflora*) Nyssaceae
Swamp Tupelo, Black Gum

Large **tree** (may be shrubby where burnt regularly); commonly in stands with many trees of same species, and the bases of trunks swollen; **leaves**: alternate, deciduous, stalked; blades elliptic to lance-elliptic or oblanceolate, tapering at base, tips pointed or rounded, ¾-3(4) in. long, mature leaves rarely toothed; **flowers**: unisexual, M/F, male flowers in loose clusters, female flowers usually with 2-3 together, stalked; **fruit**: fleshy, with stone, blue-black, about ⅜ in. long.

Recognition: tree; base of trunk swollen; leaves alternate, blades thick and stiff, less than 4 in. long, not toothed on mature trees; male inflorescence loose and irregular; fruits small and blue, 1-2 on each stalk.

Habitat: S - swamps, cypress-gum ponds, pond and lake margins, floodplain forests, wet flatwoods or savannas, shrub-tree bogs or bayheads.

Distribution: north and central Florida and south to Glades County.

Flowering:

Forestiera acuminata **Oleaceae**
Swamp-privet

Shrub or small **tree**, stems usually weak and leaning, **leaves**: opposite, deciduous, stalked, the blades narrowly diamond-shaped or somewhat ovate, 1½-3 in. long, to 1 in. wide, tapering at bases and tips, margins usually weakly toothed on upper halves, **flowers**: mostly unisexual, M/F, appearing before the leaves, male flowers in dense lateral clusters, the female flowers in short, branching clusters, sepals tiny, united, 4-lobed, without petals, stamens 1-4, **fruit**: fleshy, with a 1-seeded stone, ⅜-½ in. long, twice as long as wide, dark purple, wrinkled.

Recognition: shrub or tree; leaves opposite, narrowly diamond-shaped, pointed or long-pointed at tips, margins usually with weak teeth above middle, tiny dots on lower surface visible when held to light.

Habitat: T - stream banks, sand and gravel bars, riverine swamps, wet forests.

Distribution: north Florida south to Dixie and Gilchrist Counties.

Flowering:

***Fraxinus* spp.** **Oleaceae**
Ashes

Trees, leaves: opposite, deciduous, pinnately compound with terminal leaflets, **flowers**: unisexual, M/F, in dense axillary clusters before the leaves are formed, 4-parted, male with 2 stamens, **fruit**: winged, with 1 or 2 seeds at the base.

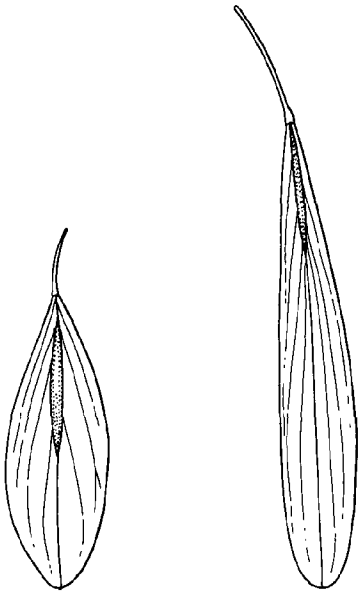
Four species: *F. americana*, *F. caroliniana*, *F. pennsylvanica*, *F. profunda*.

Recognition: tree; leaves opposite, pinnately compound with terminal leaflets; winged fruits with the wing extending down the sides of the seed-bearing part.

Habitat: S (except *F. americana*: p. 243) - swamps, wet and moist forests.

Distribution: throughout Florida.

Flowering:



Fruit of *Fraxinus caroliniana* Fruit of *Fraxinus profunda*

Fraxinus americana **Oleaceae**
White Ash

Large **tree**, bark gray, rough, **leaves**: opposite; deciduous, pinnately compound with 5-7 leaflets, leaflets 3-5 in. long, 1½ in. wide, dark green above and whitish below, margins may be shallowly toothed, bases narrowed, tips pointed or long-pointed, **flowers**: unisexual, M/F, in dense axillary clusters before the leaves are formed, 4-parted, male with 2 stamens, **fruit**: 1-seeded, with a wing above the seed.

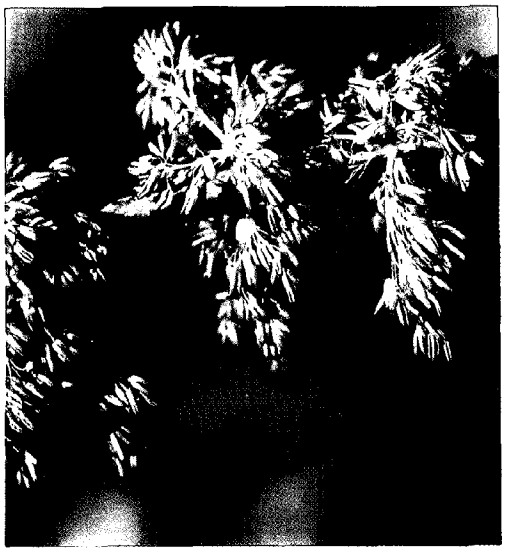
Recognition: large tree; leaves opposite, pinnately compound with terminal leaflet, lower surface whitish; fruit with wings only above seed.

Habitat: U - well-drained, rich forests.

Distribution: north Florida south to Alachua County.

Flowering:

Fruit



Ludwigia spp. **Onagraceae**
Ludwigias, Water-primroses

Annual or perennial **herbs**, or subshrubs, stems erect or creeping; **leaves**: opposite or alternate, simple, margins may be minutely toothed; **flowers**: sepals and petals usually 4 or 5, sepals persistent on the fruit, petals yellow and quickly falling; stamens 4-10; ovary below the sepals; **fruit**: a capsule with many small seeds.

Twenty-four species (some not native).

Recognition: herb; leaves alternate or opposite; flowers usually with 4 or 5 yellow petals; fruit a capsule.

Habitat: S (except species on next 3 pages) - marshes, wet shores, swampy forests, ditches, wet clearings, often in shallow water.

Distribution: throughout Florida.

Flowering:

Ludwigia hirtella **Onagraceae**
Ludwigia, Spindle-root

Perennial **herb** with horizontal underground rhizome and tuberous roots, stem erect, to about 30 in. tall; entire plant hairy with long, spreading hairs; **leaves**: alternate, sessile, oblong to narrowly linear-oblong, ¾-1¼ in. long, bases and tips rounded to blunt; flowering branch wandlike, more or less erect, with axillary flowers; **flowers**: stalked, sepals lanceolate to ovate-lanceolate, spreading or erect after flowering; petals 4, yellow, obovate or oblong-obovate, ⅜-½ in. long, style no more than ⅛ in. long; **fruit**: a hard, stalked capsule about ¼ in. long and nearly as wide, 4-angled, short oblong or spherical in outline, with small openings at tip and many small seeds.

Recognition: herb; leaves alternate with rounded or blunt bases; 4 stamens, 4 sepals, stalked flowers and capsules; *L. hirtella* may be distinguished from its close allies by the short style in combination with sepals that remain spreading or erect after flowering, and the long, spreading hairs.

Habitat: T - pine savannas and flatwoods, bogs, and ditches.

Distribution: northwest Florida.

Flowering:

Ludwigia maritima **Onagraceae**
Ludwigia, Coastal Plain Seedbox

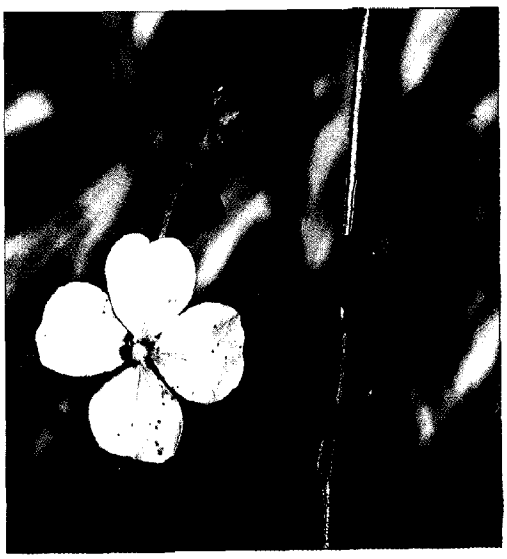
Perennial **herb** with horizontal underground rhizome and tuberous roots, stem erect, to about 40 in. tall, entire plant hairy with short, curly-shaggy hairs; **leaves** alternate, sessile, oblong to narrowly linear-oblong, ¾-1¼ in. long, bases and tips rounded to blunt; flowering branches wandlike, more or less erect, with axillary flowers; **flowers**: stalked, sepals 4, ovate, strongly reflexed after flowering; petals 4, yellow, obovate or oblong-obovate, ⅜-½ in. long; style no more than ⅛ in. long; **fruit**: a hard, stalked capsule about ¼ in. long and nearly as wide, 4-angled, short oblong or spherical in outline, with small openings at tip and many small seeds.

Recognition: herb; leaves alternate, with rounded or blunt bases; 4 stamens, 4 sepals, stalked flowers and capsules; *L. maritima* may be distinguished from its close allies by the short style in combination with sepals that turn back over the capsule after flowering.

Habitat: T - pine savannas and flatwoods, bogs, ditches, stream banks, shores of open ponds, cypress-gum depressions.

Distribution: throughout Florida.

Flowering:



Ludwigia virgata **Onagraceae**
Ludwigia

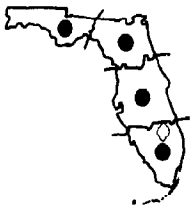
Perennial **herb** with horizontal, underground rhizome and tuberous roots, stems erect, to about 36 in. tall; **leaves**: alternate, sessile, oblong to narrowly linear-oblong, ¾-1¼ in. long, bases and tips rounded to blunt; flowering branches wand-like, more or less erect, with axillary flowers; **flowers**: stalked, sepals 4, ovate to oblong-triangular, ¼-⅜ in. long, turning back over ovary after flowering; petals 4, yellow, obovate or oblong-obovate, ⅜-½ in. long; style ¼-⅜ in. long; **fruit**: a hard, stalked capsule about ¼ in. long and nearly as wide, 4-angled, short oblong or spherical in outline, with small openings at tip and many small seeds.

Recognition: herb; leaves alternate, with rounded or blunt bases; 4 stamens, 4 sepals, stalked flowers and capsules; *L. virgata* may be distinguished from its close allies by the very long style.

Habitat: T - seasonally wet pine savannas and flatwoods, bogs, also in well-drained sandy pinelands.

Distribution: throughout Florida.

Flowering:



Platanus occidentalis **Platanaceae**
Sycamore, Plane-tree

Large **tree**, to 150 ft.; young bark creamy white, older bark peeling in large plates and thus mottled; **leaves**: alternate, deciduous, long-stalked, blades as wide as long, to 8 in. long, palmately veined and irregularly lobed, base broad or notched, base of leaf stalk large and hollow, covering the axillary bud; **flowers**: tiny, borne in long-stalked, ball-like clusters, unisexual, in separate clusters; **fruit**: a ball about 1 in. across with many tiny nutlets borne among long, tawny hairs.

Recognition: tree; leaves alternate, long-stalked, large, as wide as long, palmately veined, base of leaf stalk covering axillary bud; fruit a ball on long stalk; bark whitish, frequently peeling and mottled.

Habitat: T - mostly along streams, in floodplains and bottomlands.

Distribution: northwest Florida and the northernmost peninsular counties, often cultivated further south.

Flowering:

Limonium carolinianum **Plumbaginaceae**
Sea-lavender, Marsh-rosemary

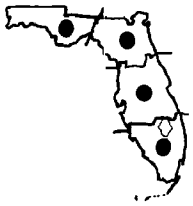
Perennial **herb**, with a stout, woody rhizome; **leaves**: alternate, mostly basal, long-stalked, leathery, linear-oblanceolate to elliptic or obovate, rarely wider and subcircular, 1-12 in. long, ⅛-3 in. wide, tapering below, tip pointed or blunt; inflorescence a fanlike panicle of small flowers; **flowers**: sepals united, more or less funnel-form, with 5 oblong or triangular white lobes, petals united, tubular at base, pale to dark blue or lavender, with 5 lobes; stamens 5; **fruit**: 1-seeded, with a loose membranous covering; seed shiny, red.

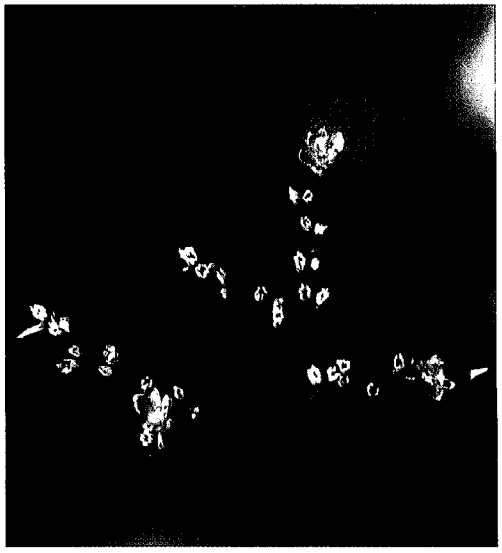
Recognition: herb; leaves clustered at base; inflorescence much-branched; papery sessile flowers.

Habitat: S - salt marshes, salt meadows, salt flats, interdune swales, mangrove swamps, saline ditches and shores.

Distribution: throughout coastal Florida.

Flowering:





Polygala cymosa **Polygalaceae**
Milkwort, Tall Milkwort

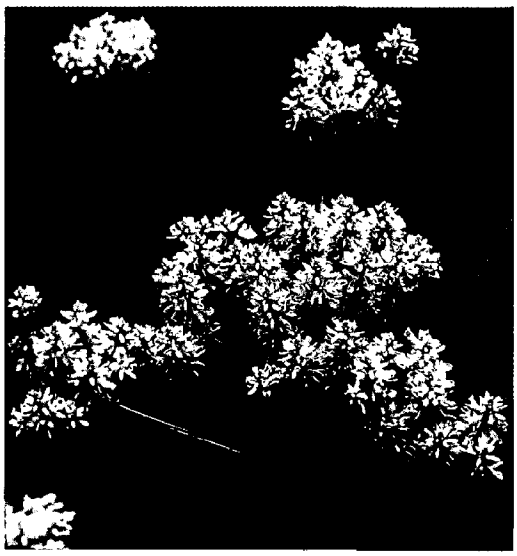
Biennial **herb**, 18 to 45 in. tall; **leaves**: alternate, clustered at stem base (rosette), narrow, linear oblanceolate, linear-lanceolate or linear, long-pointed at tip; inflorescence terminal, little- to much-branched above; **flowers**: bright yellow, 2-lipped, with 5 unequal sepals and 3 petals; **fruit**: a capsule with many tiny seeds.

Recognition: herb to 45 in. tall; leaves bunched in rosette at base of stem; small, scattered bracts on nearly bare stem; flower cluster almost flat-topped, much-branched; bright yellow.

Habitat: T - wet savannas and flatwoods, ponds and depressions, bogs and ditches, often in shallow water.

Distribution: north and central Florida, and south to Palm Beach County.

Flowering:



Polygonum spp. **Polygonaceae**
Smartweeds, Knotweeds

Annual or perennial **herbs**, joints swollen; **leaves**: alternate, with papery bases surrounding the stem, usually short-stalked and narrow, more or less lanceolate, margins smooth; **flowers**: in terminal and axillary clusters or racemes; sepals 4-6, partly united, often petallike, without petals; stamens 3-9; **fruit**: a flattened or triangular nutlet.

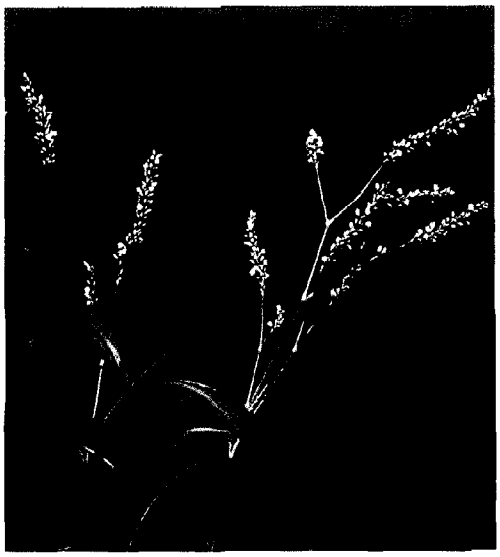
Fifteen species (some not native).

Recognition: herb; leaves alternate, the blades narrow and willowlike in most species; leaf bases form sheaths that surround the stem; foliage with peppery taste.

Habitat: S - marshes and swamps, wet forests, ditches, often in disturbed habitats.

Distribution: throughout Florida.

Flowering:



***Samolus* spp.** **Primulaceae**
Water Pimpernels

Perennial **herbs**; **leaves**: alternate, clustered at base or scattered on short stem, oblong or obovate, narrowed at bases, blunt; inflorescence with few to many branches; **flowers**: small or tiny, sepals 5, united, with triangular lobes; petals white, united, with rounded lobes; stamens 5; **fruit**: a capsule with many tiny seeds.

Two species: *S. ebracteatus*, with erect, leafy stem, and unbranched inflorescence; *S. parviflorus* (=*S. valerandi* subsp. *parviflorus*) with leaves at base and a branching inflorescence of very tiny flowers..

Recognition: herb; leaves alternate or clustered at base, tapering below and rounded above, widest in upper part; petals united, with 5 lobes; rounded capsules.

Habitat: **S** - shallow water and wet soil, stream banks, shores, swamps, ditches and brackish swamps.

Distribution: throughout Florida, *S. ebracteatus* mainly coastal.

Flowering:

Rhizophora mangle **Rhizophoraceae**
Red Mangrove

Shrub or **tree** to 60 ft. tall, with many arched prop roots from trunk and branches; **leaves**: opposite, evergreen, short-stalked; blade leathery, dark green and shiny above, paler beneath, elliptic to elliptic-obovate or oblong, 1½-5 in. long, ⅝-2 in. wide, blunt to rounded at base and tip, margin without teeth; **flowers**: in axillary clusters, sepals 4-5, yellow, leathery, narrow, about ⅜ in. long; petals 4, pale yellow, with long silky hairs; stamens 8; **fruit**: cone-shaped, with 1 seed that germinates before falling, the root becoming 10-12 in. long, thick and clublike.

Recognition: shrub or tree with arching prop roots; leaves opposite, smooth, leathery, covered with tiny black dots on lower surface; fruits germinating on plant.

Habitat: S - shallow waters of coastal areas; lagoons, streams, mostly where water is salt or brackish.

Distribution: coastal peninsular Florida north to Levy and Volusia Counties; seedlings sometimes appear in coastal northwest Florida, but they are short-lived there.

Flowering:

Crataegus aestivalis **Rosaceae**
Apple Haw, May Haw

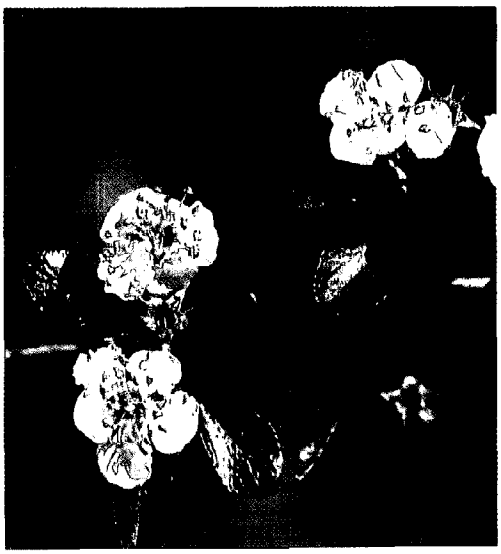
Shrub or small **tree**, to 25 ft. tall, bark pale gray, branches may be thorny, **leaves**: alternate, deciduous, short-stalked, mostly oblanceolate or spoon-shaped, 1-2 in. long, with blunt sawteeth in upper halves, occasional leaves weakly 2- to 3-lobed, **flowers**: with or before the new leaves, solitary or in clusters of 2-several, similar to apple flowers, each with a floral cup, sepal lobes triangular, petals 5, white, about ½ in. long, anthers 5-20, **fruit**: a small apple ½-1 in. across, containing 3-5 nutlets.

Recognition: shrub or tree; leaves alternate, larger than most *Crataegus*, often some of them 3-lobed; flower clusters not branched; fruit is much larger and earlier than in other Florida species.

Habitat: S - in and near pools and small ponds, floodplains, swamps, especially where water stands much of the time.

Distribution: north Florida.

Flowering:



Crataegus marshallii **Rosaceae**
Parsley Haw, Parsley Hawthorn

Small **tree**, to 25 ft. tall, with thin, scaly bark, may be thorny, **leaves**: alternate, deciduous, stalked, blades broad at base, not or scarcely tapering to stalk, deeply several-lobed, the lobes toothed, **flowers**: few to several in clusters, sepals 5, narrow, ¼-⅜ in. long, petals 5, white or pale pink, about ¼ in. long, anthers red, **fruit**: fleshy, apple-like, with about 3 nutlets.

Recognition: tree; leaves alternate, parsleylike and much-lobed; often thorny.

Habitat: S - floodplain forests, adjacent wooded slopes, stream banks, wooded ravines.

Distribution: north and central Florida.

Flowering:

Crataegus viridis **Rosaceae**
Green Haw

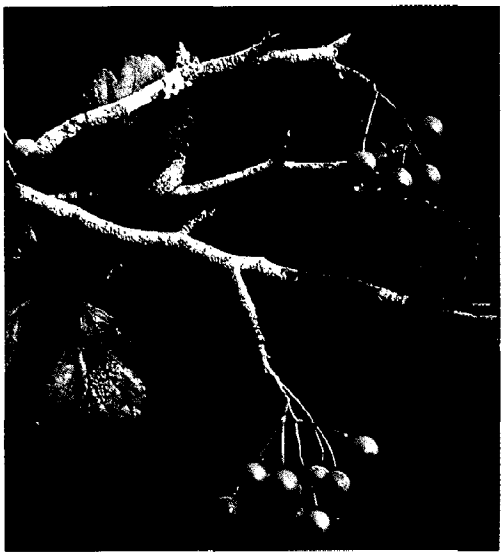
Small **tree** to 25 ft. tall, with thin, scaly, cinnamon-gray bark (resembles that of *Ostrya*), may be thorny, **leaves**: alternate, deciduous, stalked, leaf blades variable, obovate, spoon-shaped or ovate, tapering to stalk, sometimes 3- to 5-lobed, the margins shallowly toothed or saw-toothed, **flowers**: clustered, sepals 5, narrow, to ⅜ in. long, petals white or pale pink, about ¼ in. long, anthers yellow, becoming brown or red, **fruit**: fleshy, apple-like, red or orange-red, with 5 nutlets.

Recognition: tree; leaves alternate, rather large, and often weakly 3- to 5-lobed; often thorny; flower cluster branched; old bark papery-flaky, similar to that of *Ostrya*.

Habitat: T* - swamps, floodplain forests, wet forests, in and near pools and small ponds.

Distribution: north Florida.

Flowering:



Rosa palustris **Rosaceae**
Swamp Rose

Shrub to 6 ft. tall, spreading by underground runners, stems thorny; **leaves**: alternate, deciduous, pinnately compound with 5-9 leaflets; leaflets ⅜-2 in. long, ¼-¾ in. wide, margin finely and sharply saw-toothed; base of leaf with narrow lobes (stipules) attached to stalk, their tips free; **flowers**: solitary or in few-flowered clusters at and near stem tips, flower with an urn-shaped base, outer surface glandular-hairy; sepals 5, narrow, ½-¾ in. long; petals pink, about ¾-1¼ in. long, obovate; stamens numerous; **fruit**: a cluster of nutlets enclosed in a fleshy red or orange-red "hip," often persisting through the winter.

Recognition: thorny shrub; leaves alternate, pinnately compound with 5-9 leaflets; the little lobes at the leaf bases (stipules) ½-⅔ united to the leaf stalk; flowers pink with 5 petals, base of flower glandular-hairy; sepals long and tapering, but wider again at the tips; fruit persisting through winter.

Habitat: S - floodplains, marshy or swampy shores, swamps and wet thickets, often in shallow water.

Distribution: north and central Florida south to Polk County.

Flowering:

Cephalanthus occidentalis **Rubiaceae**
Buttonbush

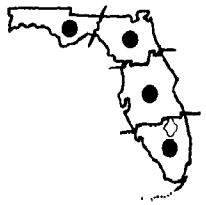
Shrub, or small **tree**, rarely to 50 ft. tall; bark becoming rough, ridged and furrowed or bumpy; **leaves**: opposite (may sometimes be 3-4 at a joint), deciduous, stalked, blades elliptic or ovate to oblong-ovate, 3½-6 in. long, bases rounded to tapering, tips pointed or long-pointed; **flowers**: in dense, globular, stalked heads 1-1¼ in. in diameter, sepals 4, united, petals 4, white, united, funnel-form, ¼-⅜ in. long, stamens 4, style long, extending beyond rest of flower; **fruit**: forming a dense ball, each fruit about ¼ in. long, splitting into 2 or 4 nutlets.

Recognition: shrub or tree; leaves opposite or whorled; ball-like clusters of small white flowers and brown fruits.

Habitat: S - swamps, sloughs, shallow ponds, small streams, stream banks, marshes.

Distribution: throughout Florida.

Flowering:



Diodia virginiana **Rubiaceae**
Buttonweed

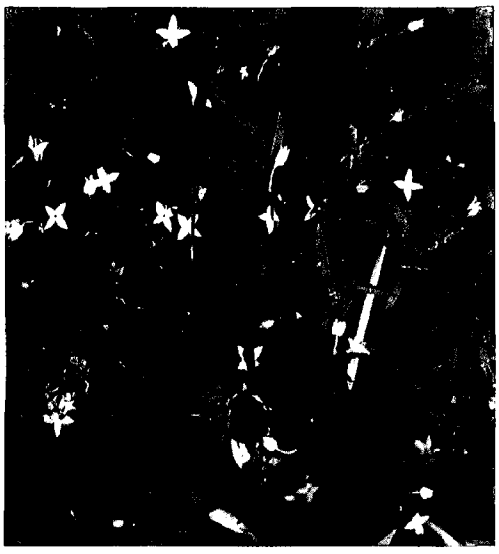
Sprawling or prostrate perennial **herb, leaves**: opposite, with transparent stipules between leaf pairs, narrowly elliptic, elliptic, lanceolate, oblanceolate or oblong, 1-4 in. long and about ½ in. wide, **flowers**: axillary, clustered, ovary beneath rest of flower, sepals 2 (rarely 3), petals united, white, to about ½ in. long, with 4 lobes about ⅛ in. long, stamens 4, projecting from flower, **fruit**: ⅜-½ in. long, each half with 1 seed.

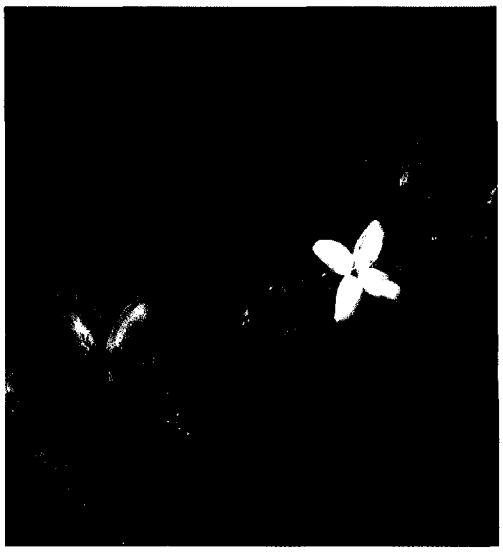
Recognition: sprawling or prostrate herb; leaves opposite; flowers with 4 white petals, sepals 2, ovary below sepals.

Habitat: T - seasonally wet pine savannas and flatwoods, swamps, wet forests, borders of ponds and depressions, shallow pools, marshy shores, wet prairies.

Distribution: throughout Florida.

Flowering:





Pinckneya bracteata **Rubiaceae**
Fever-tree, Maiden's-blushes

Shrub or small **tree**, young stems and leaf stalks densely soft-hairy; **leaves**: opposite, deciduous, stalked, blades oval, elliptic or ovate, 1½-8 in. long, 1-5 in. wide; soft hairy; bases tapering, tips blunt or pointed; inflorescence stalked, few-flowered, at stem tips and from upper leaf axils; **flowers**: sepals 5, with some becoming very large and leaflike, pale pink, up to 3 in. long and 2 in. wide, other sepals united at bases, narrow, about ½ in. long; petals 5, united, tubular, with the lobes spreading, greenish yellow mottled with brown or purple, ⅜-1 in. long, lobes narrowly triangular; stamens 5, attached to petals; **fruit**: a hard, 2-parted, brown capsule, often persisting until the next flowering season; seeds many, about ⅛ in. long.

Recognition: shrub or tree; leaves opposite, large, oval, soft-hairy, with a stipule scar between paired leaf bases; sepals pink, some large and leaflike.

Habitat: S - bayheads, swamps, bogs.

Distribution: north Florida.

Flowering:

Populus deltoides **Salicaceae**
Eastern Cottonwood

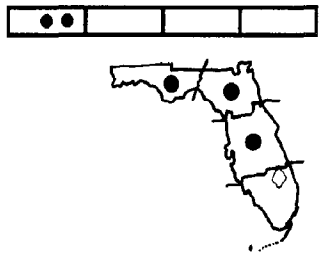
Tree to 90 ft. tall; bark grayish, rough and irregular; **leaves**: alternate, deciduous, long-stalked; blades leathery, pinnately veined, 3-6 in. long, triangular, triangular-ovate to subcircular-ovate, broad or notched at bases, tips long-pointed, margins round-toothed or saw-toothed; **flowers**: small, unisexual, M/F, in catkins; **fruit**: a small capsule, seeds small, each with a tuft of silky hairs ("cotton"); fruits maturing before leaves.

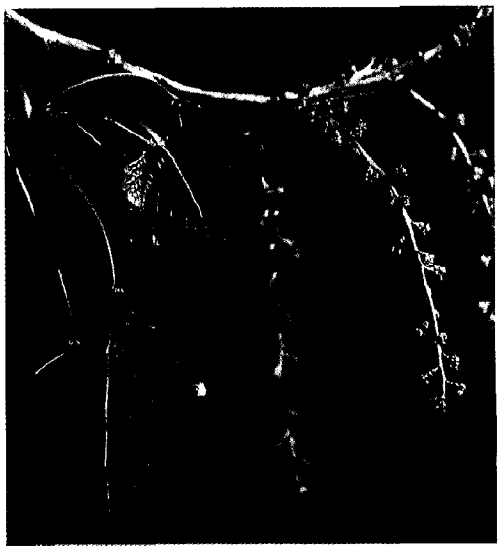
Recognition: tree; leaves alternate, long-stalked, broadly triangular with strongly round-toothed margins, stalk long and flattened.

Habitat: T - floodplain and lowland wet forests and swamps.

Distribution: north and central Florida south to Hernando County.

Flowering:





Populus heterophylla Salicaceae
Swamp Poplar, Black Cottonwood

Small to large **tree**, bark reddish brown, on old trunks peeling in long, narrow strips, young twigs white-hairy; **leaves**: alternate, deciduous, long-stalked, undersides usually white-hairy; blades thick and stiff, pinnately veined, 4-8 in. long, ovate, as broad as long, to twice as long as broad, base broad or rounded, tips blunt; margins shallowly and usually evenly round-toothed; **flowers**: small, unisexual, M/F, in catkins; **fruit**: a small capsule, seeds small, each with a tuft of silky hairs ("cotton"); fruits maturing before leaves.

Recognition: tree; leaves alternate, heart-shaped, hairy, blunt at the tip and with shallow marginal teeth; leaf stalks long, rounded in cross-section; young branches hairy.

Habitat: S - swamps and lowland wet forests.

Distribution: north Florida.

Flowering:

***Salix* spp.** **Salicaceae**
Willows

Trees or **shrubs**, often forming thickets; **leaves**: alternate, deciduous, stalked, in most species narrowly lanceolate (broadly lanceolate to elliptic-oblong in *S. floridana*); margins toothed (margins smooth or with few teeth near tip in *S. humilis*); often whitish beneath; **flowers**: unisexual, M/F, in dense catkins, produced before the leaves; **fruit**: a small, 2-parted capsule (clustered in a catkin), usually maturing before the leaves are fully developed, with many tiny seeds, each seed with a cluster of cottony white hairs.

Four species: *S. caroliniana*, *S. floridana*, *S. humilis*, *S. nigra*.

Recognition: shrub or tree; leaves alternate, usually lance-shaped (except in *S. floridana*), margins usually with teeth (except in *S. humilis*), white beneath.

Habitat: S - swamps, stream banks, sand and gravel bars, ditches and wet thickets.

Distribution: throughout Florida.

Flowering:

***Sarracenia* spp.** **Sarraceniaceae**
Pitcher-plants

Perennial **herbs** with a rhizome; **leaves**: alternate, clustered, erect or spreading, when well-developed forming a hollow tube, tapering at bases, with a flat ridge or keel on the inner side, top of leaf forming a flap or hood that more or less covers the opening of the "pitcher," the pitcher usually containing water and acting as an insect trap; **flowers**: solitary, long-stalked, large, sepals 5, persistent; petals 5, yellow, maroon, red or pink, somewhat fiddle-shaped; stamens many; pistil large, umbrella-like, persistent; **fruit**: a 5-parted capsule with many tiny seeds.

Six species: *S. flava*, *S. leucophylla*, *S. minor*, *S. psittacina*, *S. purpurea*, *S. rubra*; natural hybrids occur in many combinations.

Recognition: herb; leaves alternate, clustered, each forming a hollow tube with a flap or hood over the top, and a flange or keel running down one side.

Habitat: **T** - wet savannas and flatwoods, bogs, swamps, wet prairies, wet roadsides and ditches.

Distribution: north and central Florida.

Flowering:

Saururus cernuus **Saururaceae**
Lizard's-tail

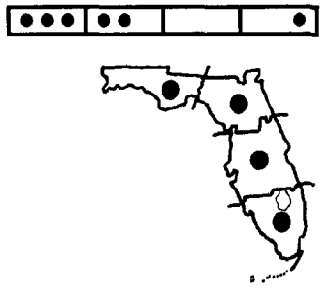
Perennial **herb**, with underground runners, forming colonies, to about 45 in. tall, with few branches above; **leaves**: alternate, stalked, the stalks clasping the stem at bases, blade more or less arrowhead-shaped, with the lobes at base rounded; inflorescence a long raceme, usually with the younger parts hanging downward, to about 12 in. long; **flowers**: without sepals or petals, stamens 6-8; **fruit**: composed of few 1-seeded nutlets that separate at maturity.

Recognition: erect herb with underground runners; zigzag stems; leaves alternate, arrowhead- or heart-shaped; long bottlebrush clusters of white flowers, curving downward at tips, and then "lizard's tail" fruiting clusters.

Habitat: S - shallow water of streams, marshy borders of ponds and lakes, swamps, wet forests, ditches.

Distribution: throughout Florida.

Flowering:



Itea virginica **Saxifragaceae**
Virginia-willow, Tassel-white

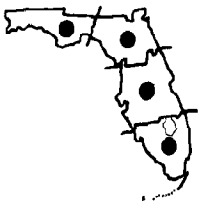
Shrub, to 8 ft. tall, loosely branched and often arching, **leaves**: alternate, deciduous, short-stalked, blades variable, elliptic, oblong, oval, oblanceolate or somewhat obovate, tapering bases, tips pointed, long-pointed or blunt, 2-4 in. long, 1-1½ in. wide, margins finely toothed, **flowers**: small, in dense bottlebrush racemes, 1¼-4 in. long, about ⅝ in. thick, sepals 5, narrow, falling off, petals 5, white, narrow, about ¼ in. long, stamens 5, **fruit**: a pointed capsule with several small seeds.

Recognition: shrub; leaves alternate, pointed at both ends, margins with small, even teeth throughout, with prominent veins beneath; pointed fruits persist through most of year.

Habitat: S - swamps and wet forests near streams.

Distribution: throughout Florida.

Flowering:



***Bacopa* spp.** **Scrophulariaceae**
Water-hyssops

Sprawling or creeping perennial **herbs**, succulent or subsucculent, often forming mats, sometimes floating; **leaves**: opposite, sessile or nearly so, often glandular-dotted, not markedly smaller at branch tips; **flowers**: solitary or paired, sepals 4 or 5, united, often markedly unequal; petals 5, united, tubular to bell-shaped, 2-lipped, blue or white; stamens 4 in 2 pairs; **fruit**: a capsule with many tiny seeds, covered by the sepals.

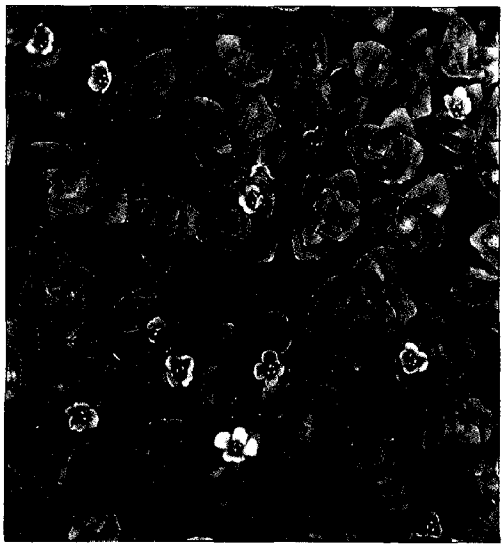
Three species: *B. caroliniana*, *B. innominata*, *B. monnieri*; common in Florida are *B. caroliniana*, with hairy stem, wide, almost round leaves, lemony smell, and blue flowers; and *B. monnieri*, with smooth stem, narrower shiny leaves that taper at the base and usually white flowers.

Recognition: sprawling, more or less succulent herbs; leaves opposite, wide, rounded or blunt, without teeth; flowers weakly 2-lipped.

Habitat: S - fresh and brackish shores and marshes, ditches, pools, often in shallow water.

Distribution: throughout Florida.

Flowering:



Gratiola ramosa **Scrophulariaceae**
Hedge-hyssop

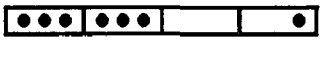
Perennial **herb**, branched or simple, more or less upright, 4-12 in. tall, the lower branches often spreading and rooting to form large clumps, foliage slightly sticky, **leaves**: opposite, sessile, lanceolate, few-toothed, pointed, ⅜-¾ in. long, **flowers**: axillary, stalked, sepals narrow, to ¼ in. long, petals united, 2-lipped, white, with yellow, brownish yellow or purple veins within, ⅜-½ in. long, **fruit**: a spherical capsule, small, with tiny brown seeds.

Recognition: erect herb; leaves opposite, toothed, pointed, the bases broad and more or less clasping the stem; flowers stalked, the stalk without a pair of bracts below the sepals.

Habitat: **T** - pine savannas and flatwoods, sandy-peaty pond margins, depressions and ditches.

Distribution: throughout Florida.

Flowering:



Lindernia dubia **Scrophulariaceae**
False Pimpernel, Short-stalked False Pimpernel

Annual **herb**, stems simple to much branched, weakly ascending; **leaves**: opposite, sessile or very short-stalked, oblanceolate, oblanceolate-ovate or oblong-elliptic, ⅜-1¼ in. long, to 1 in. wide, tapering at base, tip blunt, margins may have few small teeth; **flowers**: solitary, axillary, stalked, stalks much shorter than the leaves or about equal; sepals free, narrow, half as long as petals; petals united, about ⅜ in. long, 2-lipped, pale lavender, the margins darker; fertile stamens 2; **fruit**: a capsule about ¼ in. long, with many tiny, pale yellow seeds.

Recognition: herb; leaves opposite, broadest in upper halves, upper leaves not much smaller than lower leaves; flowers pale lavender, strongly 2-lipped, with stalks about equal to leaves or shorter.

Habitat: S - alluvial mud of swamps and floodplain forests, muddy shores of streams, bayous, ponds, wet prairies, tidal shores, ditches.

Distribution: the northernmost counties across Florida.

Flowering:

Lindernia grandiflora **Scrophulariaceae**
False Pimpernel, Round-leaved False Pimpernel

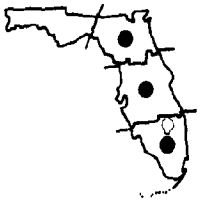
Annual **herb**, the stems creeping and forming mats, with flowering branches rising to 5-10 in. tall; **leaves**: opposite, sessile, circular or round-ovate, ¼-⅝ in. long, tips blunt or rounded, margins without teeth; **flowers**: solitary in leaf axils, stalked, the stalks much longer than leaves; sepals narrow, about ⅛ in. long; petals united, 2-lipped, about ⅜ in. long, violet-blue, tube and some lobes streaked with purple; fertile stamens 2; **fruit**: a capsule about ⅛ in. long, with many small, tan seeds.

Recognition: creeping herb; stems not hairy; leaves opposite, rounded, about as wide as long; flowers violet-blue, 2-lipped, long-stalked.

Habitat: S - depressions in pine flatwoods, cypress depressions, swamps and floodplain forests, streams and shores, ditches.

Distribution: peninsular Florida south to Collier County.

Flowering:



Styrax americana **Styracaceae**
Storax, Mock-orange

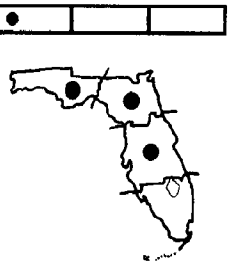
Shrub or small **tree**; twigs often with tiny star-shaped hairs; **leaves**: alternate, deciduous, short-stalked; blades often hairy, elliptic, ovate, obovate or lanceolate, to 3½ in. long and 1½ in. wide; base tapering, tip blunt, pointed or long-pointed, margins may be few-toothed; **flowers**: borne on new shoots in spring, stalked, sepals 5, small; petals 5, white, united at base, lobes oblong, pointed or long-pointed, spreading or reflexed; **fruit**: a subspherical capsule, usually with a single brown seed.

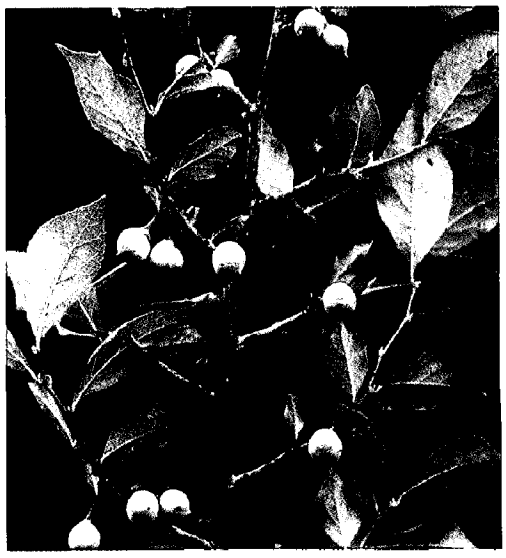
Recognition: shrub or tree; leaves alternate, faintly wavy-toothed, often with tiny, star-shaped hairs beneath; petals mostly 5; the sepals form a cup about the fruit, and both sepals and fruit are silvery-hairy, with branched, starlike hairs.

Habitat: T - floodplain and wet forests, swamps, shoreline thickets, cypress-gum depressions.

Distribution: north and central Florida.

Flowering:





Symplocos tinctoria **Symplocaceae**
Horse-sugar, Sweetleaf

Shrub or small **tree**; **leaves**: alternate, semi-deciduous, commonly persisting through winter, short-stalked; blades mostly elliptic, sometimes oblong or oblanceolate, 2-5 in. long, tapering at bases, pointed or long-pointed at tips; margins shallowly toothed; **flowers**: yellow or pale yellow, in dense, almost ball-like clusters on last year's twigs; sepals 5, united, with tiny lobes; petals 5, united at base, oblanceolate or spoon-shaped, to ⅜ in. long; stamens numerous; ovary beneath sepals; **fruit**: fleshy, oblong, becoming purplish brown, about ⅜ in. long, with the 5 sepal lobes persisting at tip.

Recognition: shrub or tree; leaves alternate, glossy and dark green above, pale beneath, short-stalked and shallowly toothed, tapering at bases and pointed or long-pointed at tips, sweet to taste.

Habitat: **T**** - rich upland forests, moist ravines, floodplain forests, bottomland forests, palmetto marsh areas, stream banks.

Distribution: north and central Florida to Hillsborough County.

Flowering:

Gordonia lasianthus **Theaceae**
Loblolly Bay

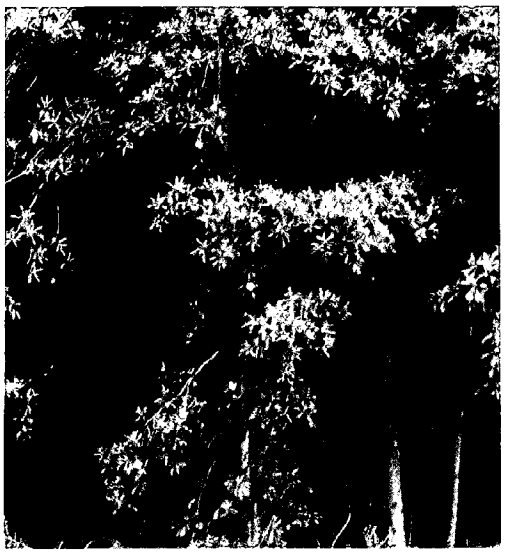
Small to medium-sized tree with narrow, conical or columnar crown, bark dark gray, roughened by interlacing, flat-topped ridges separated by rough, narrow furrows, **leaves**: alternate, evergreen, leathery, very short-stalked, blades long-elliptic, 3-6 in. long, 1-2 in. wide, tips blunt, pointed or notched, margins with small, blunt teeth, lower surface pale, **flowers**: solitary, axillary, on stalks 2-3 in. long, flowers 3-3½ in. across, sepals stalked, about as wide as long, silky-hairy on the outside, petals 5, white, united at base, crinkly fringed, stamens many, united at base and forming a ring, **fruit**: a woody capsule about ⅝ in. long, with flat, winged seeds about ⅜ in. long.

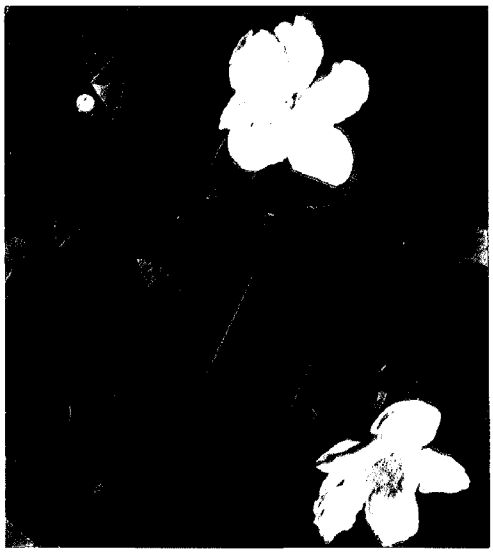
Recognition: tree; leaves alternate, evergreen, leathery, elliptic, pale green on lower surface, margins with blunt teeth; flowers white with crinkly petals.

Habitat: S - evergreen shrub-tree bogs and bayheads, pond-cypress depressions, swamps, low flatwoods.

Distribution: north and central Florida.

Flowering:





Celtis laevigata **Ulmaceae**
Hackberry, Sugarberry

Medium to large **tree**, bark gray, smooth, usually becoming warty; **leaves**: alternate, deciduous, short-stalked, blades ovate to lanceolate, tapering to a point at the tip, with a pair of principal lateral veins arising from the base, 1½-4½ in. long, often asymmetrical at base, margins usually smooth or with a few teeth near the tip; **flowers**: unisexual, greenish, the male flowers clustered on new branchlets, the female solitary or paired; **fruit**: fleshy, spherical, to ¼ in. in diameter, with a hard stone within.

Recognition: tree; leaves alternate, with lopsided bases and long-tapering tips, surface rather rough, may lack teeth, often with 3 veins from base; bark light gray, smooth or warty.

Habitat: T - floodplain forests, wet and moist forests, stream banks, hammocks, fencerows.

Distribution: throughout Florida.

Flowering: , fruits long persistent.

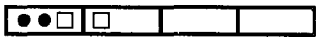
Planera aquatica **Ulmaceae**
Water-elm, Planer-tree

Shrub or small tree, rarely to 50 ft. tall, often with short trunk and spreading crown; bark scaly and flaky or bumpy, peeling in long plates, inner bark reddish brown; **leaves**: alternate, deciduous, short-stalked, blades ovate, base often asymmetrical, tips pointed or long-pointed, dark green above, paler beneath; margin irregularly saw-toothed or doubly saw-toothed; **flowers**: bisexual or usually unisexual, male small, clustered, with 4-5 stamens; **fruit**: a soft, stalked nut about ⅜ in. long, often knobby or burlike.

Recognition: shrub or tree; leaves alternate, small, shallowly toothed, upper leaf surface roughened, base asymmetrical.

Habitat: S - floodplain forests, stream banks, sand and gravel bars.

Distribution: north Florida.

Flowering: 

***Ulmus* spp.** **Ulmaceae**
Elms

Trees, bark ridged and furrowed or scaly, twigs may be winged; **leaves**: alternate, deciduous, short-stalked, generally ovate and pointed or long-pointed, lateral veins of leaf equal, straight and parallel; margins usually doubly saw-toothed; **flowers**: unisexual, very small, in clusters, in most species appearing in spring before leaves are formed (some species flower in fall); **fruit**: 1-seeded, with a more or less circular, papery wing.

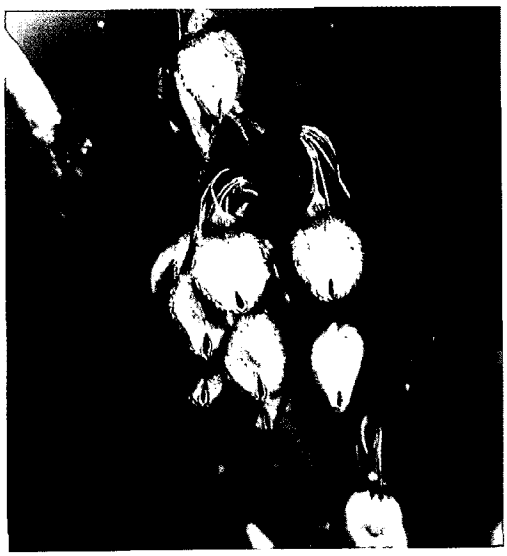
Four species: *U. alata, U. americana, U. crassifolia, U. rubra.*

Recognition: tree; leaves alternate, doubly saw-toothed, with prominent parallel lateral veins, the base usually asymmetrical; twigs sometimes winged.

Habitat: **T** (except *U. rubra*: next page) - floodplain and lowland forests, wet or moist forests.

Distribution: north and central Florida.

Flowering:



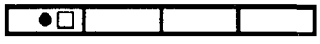
Ulmus rubra **Ulmaceae**
Slippery Elm

Tree to 80 ft. tall; bark ridged and furrowed; **leaves**: alternate, deciduous, short-stalked, blade oblong, oval, obovate, elliptic or ovate, up to 7 in. long, and 2-2½ in. wide; base rounded or broadly tapering, often asymmetrical; tip abruptly long-pointed; margin doubly saw-toothed; **flowers**: unisexual, very small, in clusters, appearing in spring before leaves are formed; **fruits**: 1-seeded, with a more or less circular, papery wing, ½-¾ in. in diameter, not notched at the tip.

Recognition: tree; leaves alternate, 5-7 in. long, base rounded, often asymmetrical, tapering to a long point at the tip, upper surface feels rough like sandpaper; fruits larger than other Florida species and lack a notch at the top. The inner bark is mucilaginous or slippery.

Habitat: U - rich forests.

Distribution: northwest Florida from Jefferson to Jackson Counties.

Flowering: 

Centella asiatica **Umbelliferae**
Coinwort, Asiatic Pennywort

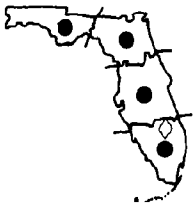
Perennial **herb** with spreading runners, **leaves**: alternate, clustered at joints, stalked, blade notched to squarish at base, shovel-shaped, margins with teeth, stalk variable, to about 10 in. long; inflorescence of 1 or few stalked clusters at each joint, usually shorter than the leaves; **flowers**: 1-4 in each cluster, petals small, white, greenish or pinkish; **fruit**: a pair of small, broad, pumpkin-shaped nutlets.

Recognition: creeping herb with runners; leaves alternate, shovel-shaped, more or less deeply notched at the base, margins with teeth; flower cluster dense and shorter than leaves.

Habitat: **T** - margins of lakes, ponds, streams and ditches, wet forests, bogs.

Distribution: not native; throughout Florida.

Flowering:



Cicuta mexicana **Umbelliferae**
Water-hemlock

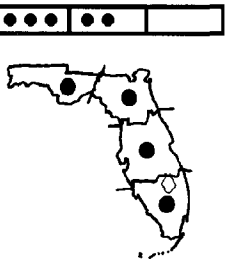
Coarse perennial **herb** to 7-8 ft. tall, with fleshy, fingerlike roots, stem erect, hollow, usually with purple stripes; **leaves**: alternate, lower leaves usually 3-pinnately compound, to 15 in. long, 24-30 in. wide, leaflets lanceolate-ovate, margins with coarse teeth; inflorescence: flat-topped (compound umbels), at stem tip and from leaf axils; **flowers**: white, with 5 petals and 5 stamens; **fruit**: a ribbed nutlet.

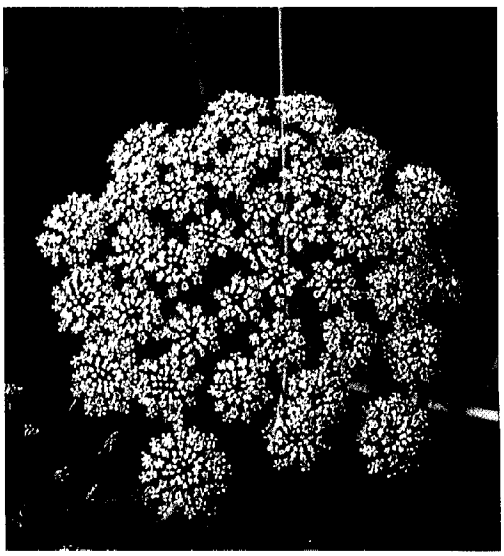
Recognition: coarse herb; leaves alternate, 2- or 3-pinnately compound, coarsely toothed, the lowest divisions of the leaf are the largest; small white flowers in compound umbels.

Habitat: S - in water along marshy shores, in floating mats of vegetation, swamps, spring-runs, streams and ditches.

Distribution: throughout Florida.

Flowering:





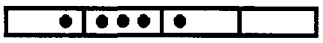
Hydrocotyle ranunculoides **Umbelliferae**
Floating Pennywort (Swamp Loosestrife incorrectly used)

Perennial **herb**, the stem spreading horizontally, often in dense mats, usually floating, **leaves**: alternate, stalked, the stalks to 14 in. long, blades nearly as wide as long, rounded, stalk attached in center (like an umbrella), toothed-lobed, usually notched almost to stalk at base and often at tip; inflorescence a dense cluster (umbel) from leaf axils, simple or branched, much shorter than leaves, **flowers**: mostly 5-10 in cluster, tiny, whitish; **fruit**: a pair of nutlets, about ⅛ in. long, fruiting stalk generally curves downward.

Recognition: herb with creeping stem; leaves, long-stalked, stalk attached in center, notched almost to stalk at base and irregularly 3- to 5-lobed, shiny bright green, leathery.

Habitat: S - mucky shores, ditches, sloughs, floating mats.

Distribution: north and central Florida.

Flowering: 

Hydrocotyle umbellata **Umbelliferae**
Water Pennywort, Marsh Pennywort

Perennial **herb**, the stems spreading on or in soil, often forming dense mats or floating, **leaves**: alternate, stalked, stalks to 8 in. long, blade subcircular, centrally attached (like an umbrella), shallowly blunt-toothed, **flowers**: in a dense cluster (umbel) of many flowers, white or greenish white, inflorescence rarely branched, subspherical, from leaf axils, flowers stalked, the stalks to ¾ in. long, **fruit**: paired nutlets, about ⅛ in. long.

Recognition: creeping herb; leaves, circular, umbrella-like, shiny green, leathery, margins with blunt teeth; flowers in simple umbels (all flowers attached at same point).

Habitat: T - in small streams, on and near shores of ponds and lakes, sometimes in floating mats, swamps, ditches, spring runs and seepage areas, moist soils.

Distribution: throughout Florida.

Flowering:

***Lilaeopsis* spp.** **Umbelliferae**
Lilaeopsis, False-lily

Perennial **herb** with runners spreading in soil or water; **leaves**: alternate, 1 to several from each joint, narrow, usually widest near the tip, ½-12 in. long, with transverse partitions in the leaf; inflorescence: a short-stalked cluster (umbel) borne near the leaf base; **flowers**: small, sepals 5, united, petals 5, white; **fruit**: a pair of nutlets.

Two species: *L. carolinensis*, with leaves 4-12 in. tall and much shorter inflorescences, and *L. chinensis*, with both leaves and inflorescence stalks ⅜-2 in. long.

Recognition: herb; leaves alternate, from a creeping runner, leaves with obvious cross-partitions (or very small), widest near tip; inflorescence a small cluster arising from runner.

Habitat: S - brackish marshes, swamps, ditches and muddy shores.

Distribution: north and central Florida, mainly coastal, south to Citrus and Duval Counties (*L. carolinensis* only in far west).

Flowering:

Oxypolis filiformis **Umbelliferae**
Water-dropwort

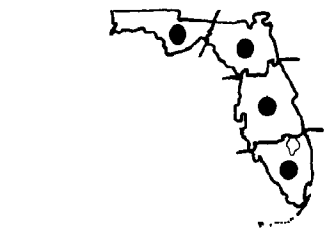
Perennial **herb**; stem slender, sparingly branched, to 5½ ft. tall; **leaves**: alternate, cylindrical, hollow, with partitions, to 2 ft. long, much smaller in upper part of plant; inflorescence a flattened cluster (umbel) of smaller clusters; **flowers**: small, white, 12-22 in an individual cluster; petals white, curled inward; **fruit**: a pair of nutlets, about ¼ in. long, with narrow, flattened wings.

Recognition: herb; leaves alternate, cylindrical with cross-partitions; tiny white flowers in compound umbels (like carrot inflorescence).

Habitat: S - open or semi-open wet sites, commonly in shallow water, bogs, pine flatwoods, cypress depressions, marshes, ditches, wet prairies.

Distribution: throughout Florida.

Flowering:



Sium suave **Umbelliferae**
Water-parsnip

Perennial **herb**, stem 40-55 in. tall, cylindrical and hollow below, corrugated or angled above, branching above the middle; **leaves**: alternate, long-stalked, pinnately compound, submersed leaves may be 2- or 3-pinnate with very narrow segments; larger leaves 12 in. long or more, with 7-15 leaflets, leaflets ovate-lanceolate to lanceolate, tips pointed or long-pointed, margins toothed; **flowers**: in flat compound clusters 2-3 in. across; sepals 5, tiny, petals 5, white, small; **fruit**: paired nutlets with corky wings.

Recognition: coarse herb; leaves alternate, above-water leaves simply pinnate; small white flowers in flat clusters (like carrot inflorescence).

Habitat: S - streams, swamps, bogs, floodplain forests.

Distribution: north Florida.

Flowering:

Boehmeria cylindrica **Urticaceae**
Bog-hemp, False-nettle

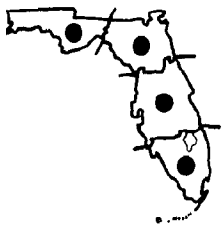
Perennial **herb**, to 4 ft. tall, sometimes branched; **leaves**: opposite, stalked, blades ovate to lance-ovate, with 3 main veins from base, to 6 in. long and 3 in. wide, usually somewhat rough-hairy on both surfaces, rounded or tapering at base, tip tapering, pointed, margins strongly toothed; **flowers**: unisexual, in dense, rounded clusters scattered along a long stalk; male flowers with parts in 4's; **fruit**: a tiny, flattened nutlet.

Recognition: herb; leaves opposite, with 3 main veins from the base, coarse teeth on margins, the surface sandpapery; inflorescences at joints on upper stem, long, with knots of flowers along the stalk.

Habitat: **T** - marshes, marshy shores, wet forests, swamps, floodplain forests, wet thickets, stream banks, ponds, ditches and canals.

Distribution: throughout Florida.

Flowering:



Ampelopsis arborea **Vitaceae**
Pepper-vine

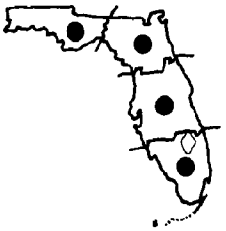
Woody **vine** or sprawling **shrub**; **leaves**: alternate, short-stalked, compound with 3 leaflets, or each of the 3 divisions divided; leaflets up to 2 in. long, ovate, margins with sharp, coarse teeth; **flowers**: in flat-topped clusters, tiny, 5-parted, greenish white, with a cuplike nectary around ovary; **fruit**: a berry about 3/8 in. in diameter, becoming blue.

Recognition: woody vine clinging by "suction cups," or sprawling shrub; leaves alternate, compound, irregularly 3- to many-parted, with coarsely toothed leaflets.

Habitat: T - floodplain and wet forests, stream banks, thickets, ditches.

Distribution: throughout Florida.

Flowering:



GLOSSARY

Note that terms describing shape may be combined to indicate shapes intermediate between those illustrated in Figure 2, as "elliptic-ovate" or "oblong-elliptic."

Algae - pigmented plants lacking vascular (conducting) tissue and reproducing by spores; generally aquatic; members of the group Algae.

Alternate - with reference to leaf arrangement: having the leaves attached singly at different points on the stem, usually in an alternating or spiral arrangement on the stem, as in *Ilex coriacea.*

Anther - the pollen-bearing part of a stamen, the "male" element in a flower.

Appressed - pressed flat against something.

Ascending - pointing upwards, but not straight, somewhat leaning or arched.

Asymmetrical - lop-sided, having the two sides different in shape or area.

Axil - the upper angle between a leaf and the stem.

Axillary - borne in the angle of a leaf or bract.

Beaked - having a narrow appendage, like a bird's beak, as in fruit of *Rhynchospora corniculata.*

Berry - a fleshy fruit, technically one in which the seeds are not enclosed in stones, as in *Smilax* spp.

Biennial - a plant that normally grows during two seasons, flowering and fruiting the second season.

Bipinnate - twice divided compound in a "feather" pattern (Figure 1D).

Bisexual - having both male (staminate) and female (pistillate) elements in a flower.

Blade - the broad, flat portion of a leaf or leaflike organ.

Bract - any leaflike organ that is not a typical foliage leaf; bracts may be scale-like, sheathing, or in an inflorescence they may resemble foliage leaves.

Bristle - a slender, stiff appendage, generally thicker than a hair.

Capsule - a fruit, generally of 2 or more parts, that dries and opens at maturity to shed the seeds.

Catkin - a dense, elongate cluster of small flowers, usually with scalelike bracts, as in *Salix* spp. or *Alnus* spp.

Compound - with reference to leaves: divided into 2 or more distinct leaflets (Figure 1B-D).

Conic - cone-shaped.

Corm - a thick, underground stem, as in *Sagittaria* spp.

Deciduous - refers to leaves or other structures that are shed by the plant; with reference to leaves this term generally implies that the leaves are all shed at about the same time (autumn) in the year that they were developed (contrasts with evergreen).

Dichotomous - refers to Y-like branching in which both branches are equal and symmetrical, as in leaves of *Cabomba caroliniana.*

Disk - referring to the head of the family Compositae, the central "floor" of the involucre, to which the individual flowers are attached.

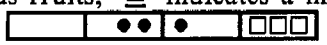
Elliptic - with reference to flat organs, spindle-shaped (Figure 2B).

Emergent - projecting above the surface of the water.

Evergreen - refers to leaves that persist more than one year, so that the plant is never leafless under normal conditions.

Floral cup - having sepals and petals united to form a broad cuplike structure at the base of the flower, as in *Crataegus* spp.

Floral tube - a tube formed by flower parts: sepals, petals, or stamen bases; this tube may enclose the ovary, or it may separate the rest of the flower from the ovary (see *Rhexia* spp.).

Flowering season - here indicated by a "calendar" divided into 3-month segments; "•" indicates a month in which flowering is known to occur; in species with conspicuous fruits, "□" indicates a month in which relatively mature fruits may be found. 

Hammock - forests with many broad-leaved (dicot) evergreen trees; in south and central Florida used mainly to indicate isolated patches of forest.

Herb - a non-woody plant, generally soft-stemmed, and the above-ground parts not persisting more than one season.

Inflorescence - flower cluster, or the arrangement of flowers on a plant.

Inrolled - of leaflike structures, having the sides rolled under.

Involucre - a cluster of bracts beneath a flower or cluster, especially in the family Compositae, where stem tip and bracts form a cup that supports and surrounds the flower cluster.

Keeled - bearing a sharp ridge, as in "pitchers" of *Sarracenia* spp.

Lance - (lanceolate) used in combination with other terms, as "lance-ovate," a shape intermediate between lanceolate and ovate.

Lanceolate - shaped like a lance head (Figure 2E), as in leaves of *Justicia* spp. or *Salix* spp.

Leaf - an appendage borne on a stem; usually flattened, green and of limited growth; there is normally a bud on the stem just above the leaf base (in the leaf axil); a compound leaf may be distinguished from a branch by the bud at its base; such buds do not occur between the divisions of a leaf or between branches.

Leaflet - a division of a compound leaf, as in *Mimosa pigra* or *Rosa palustris*.

Lip - a part of the petals that is different from the rest, here "2-lipped" is used to refer to flowers with bilateral symmetry, generally with the upper and lower petals different in form or color, as in *Lindernia* spp.

Lobe - a part of a leaf or other flat organ that is deeply notched or divided on each side, as in *Acer rubrum* or *Acer saccharinum*.

M/F - used here to indicate plants with male and female flowers borne on different individuals.

Measurements - inches and feet are the units familiar to most Florida readers; many botanical works use millimeters (mm., 24.4 mm. = 1 inch), centimeters (cm., 10 mm.), decimeters (dm., 100 mm.) or meters (m., 1,000 mm., or slightly more than 1 yard); see scale on inside back cover.

Midrib - the midvein of a leaf, especially when thickened or keeled.

Midvein - the principal vein, running the length of a leaf.

Moss - any bryophyte of the class Musci, such as *Sphagnum* spp.; commonly applied to any small or creeping plant.

Nectary - any structure that produces nectar.

North Florida - used here to refer to the panhandle and north peninsular Florida, together.

Northwest Florida - used here to refer to the "panhandle," west of the Aucilla River.

Nutlet - a small, one-seeded fruit with a hard fruit-wall, as in Cyperaceae (achene).

Oblanceolate - the reverse of lanceolate, widest above the middle (Figure 2F).

Oblong - longer than wide, with the sides nearly or quite parallel (Figure 2A).

Obovate - the reverse of ovate, widest above the middle (Figure 2D).

Opposite - refers to leaves that are attached in pairs, with each pair at the same point (node) on the stem, as in *Avicennia germinans* or *Lycopus rubellus.*

Ovary - an embryonic fruit, may be in the center of the flower, or the rest of the flower may be attached above the ovary.

Ovate - in the description of flat objects, having the outline of an egg, with the broadest part near base (Figure 2C).

Ovoid - egg-shaped (three-dimensional), as in cone of *Pinus serotina.*

Palmate - like the fingers of a hand, referring to veins, lobes or leaflets which radiate out from a common point (Figure 1A, B).

Panicle - a branched inflorescence.

Peltate - attached at the center, like an umbrella, as the leaf of *Nelumbo* spp.

Perennial - living for more than two years, generally applied to herbaceous plants, as in *Sarracenia* spp. or *Saururus cernuus*; woody plants are normally all perennial.

Petal - leaflike organs in a flower, generally colored or white; when a flower includes two sets of leaflike organs, those of the inner set are called petals.

Pinnate - divided in a featherlike pattern, as in leaves of *Carya aquatica* or *Gleditsia aquatica* (Figure 1C-E).

Pistil - the female element in a flower, usually composed of ovary, style and stigma.

Prostrate - lying flat on the ground, spreading, as in *Sesuvium* spp.

Raceme - an elongate inflorescence in which each flower is stalked.

Rachis - used to refer to the central axis of a compound leaf.

Rank - a series in a straight line.

Three-ranked - leaves in three straight lines on a stem, so that the stem appears triangular when seen from the tip, as in *Fontinalis* spp.

Two-ranked - leaves in two straight lines on a stem; each leaf is directly above the next to the last leaf before it, and directly beneath the second leaf after it; in some cases, all leaves are flattened in the same plane, as in Betulaceae.

Ray flower - in the inflorescence of the family Compositae, when ray flowers are present they are the flowers on the outer edge of the cluster, and each ray flower has its petals united and straplike; thus the cluster has the superficial appearance of a single flower, as in *Bidens* spp.

Reflexed - bent or turned downwards or backwards, towards the base, as in sepals of *Ludwigia maritima.*

Rhizomatous - having a rhizome, as in *Osmunda* spp.

Rhizome - rootstock, a dorsiventral, horizontal stem on or in the ground, producing leaves or shoots at one end or at intervals.

Runner - a slender horizontal stem, producing offsets or new plants, as in *Lilaeopsis* spp.

Saw-toothed - having sharp teeth pointing forward along the edge (serrate, Figure 3E, F), as in *Ulmus* spp.

Scale - any very small leaf or bract, as in *Dryopteris ludoviciana.*

Seedhead - refers to the complete inflorescence, especially of grasses and sedges, whether in flower or fruit.

Sepal - the outer, leaflike organs of a flower, generally green; when only one set of leaflike organs is present, they are often termed sepals, even if brightly colored.

Sessile - refers to a leaf or other organ attached directly to a stem, without a stalk, as in leaves of *Hypericum myrtifolium* or *Triadenum virginicum.*

Sheath - any leaflike organ that is wrapped around a stem or other organ; in many monocotyledons, the base of the foliage leaf forms a sheath about the stem, as in *Arundinaria gigantea* or *Polygonum* spp.

Spike - a narrow inflorescence, especially if the individual flowers are attached directly to the stem, without stalks, as in *Salicornia* spp.

Spikelet - in the Cyperaceae and Gramineae, a unit of the inflorescence, a short stem with 2 or more scalelike bracts and 1 or more flowers (often conelike).

Sporangium - a structure containing or producing spores, as in *Blechnum serrulatum.*

Spore - a single reproductive cell, often with a hard cell wall.

Stalk - any slender supporting structure, of a leaf (petiole), an inflorescence (peduncle), a flower (pedicel), etc.

Stamen - the male element in a flower, usually the anther borne on a slender stalk (filament).

Stigma - the tip(s) of the female element in the flower; the area where pollen grains may stick and germinate.

Stone - a seed surrounded by a hard wall derived from the fruit, a pit, as in *Crataegus* spp., peach or blackberry.

Style - a slender extension between the ovary and the stigma.

Sub- - a prefix meaning slightly or somewhat.

Submersed - underwater, normally growing in water, not floating or emergent.

Succulent - soft and fleshy, usually applied to stems or leaves, as in *Batis maritima.*

Synonym - another name for the same species; in practice, the first validly published name is the correct name, and all others are synonyms.

Tapering - gradually becoming smaller toward one end, not abrupt.

Terminal - at the extreme outer or upper end of any structure.

Toothed - having small lobes or teeth along the margin, as in the leaflets of *Ampelopsis arborea* (Figure 3D).

Tubercle - a wartlike structure, especially in the Cyperaceae, where the fruit may bear a hard tubercle.

Unisexual - flowers having only male (staminate) or female (pistillate) elements.

Umbel - an inflorescence in which several to many stalked flowers are attached at the same point; in a compound umbel, each of these stalked clusters is, in turn, attached to a common point, as in *Cicuta mexicana*; typical of the family Umbelliferae.

Wetland species - any plant treated as "S" or "T" in the legislation; when individual species are not cited in the legislation, wetland species are those listed by Godfrey and Wooten, Aquatic and Wetland Plants of the Southeastern United States.

Whorl - refers to a circle of three or more organs attached at the same level, especially to leaf arrangement, as in *Hydrilla verticillata.*

GLOSSARY FIGURES

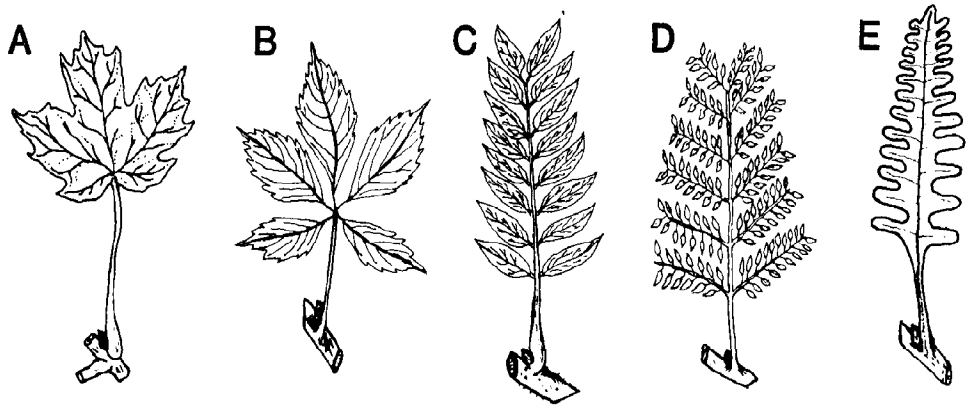


Figure 1. Leaf types: **A.** palmately lobed and veined; **B.** palmately compound; **C.** pinnately compound; **D.** bipinnately compound; **E.** pinnately lobed.

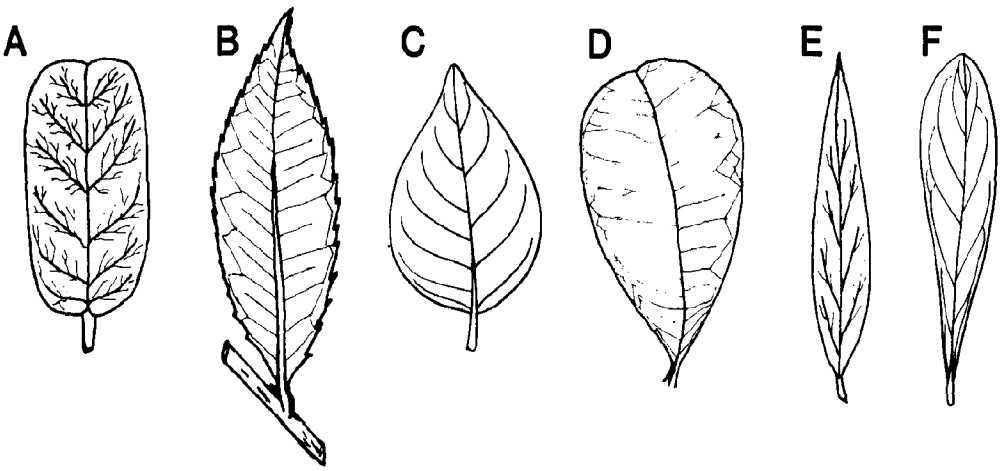


Figure 2. Leaf shapes: **A.** oblong; **B.** elliptic; **C.** ovate; **D.** obovate; **E.** lanceolate; **F.** oblanceolate.

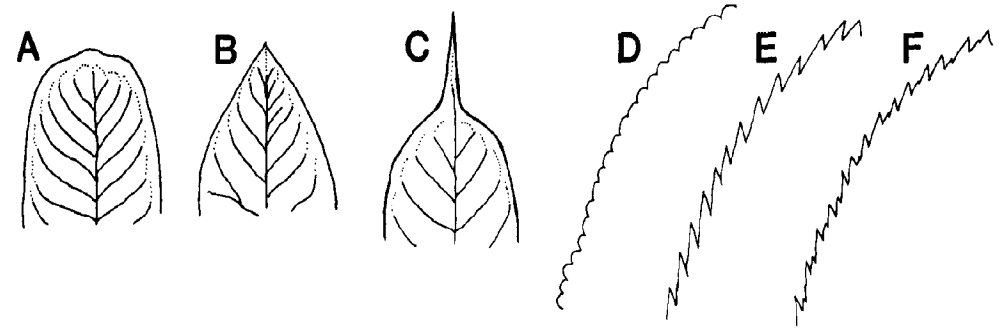


Figure 3. Leaf tips and margins: **A.** blunt; **B.** pointed; **C.** long-pointed; **D.** toothed; **E.** saw-toothed; **F.** doubly saw-toothed.

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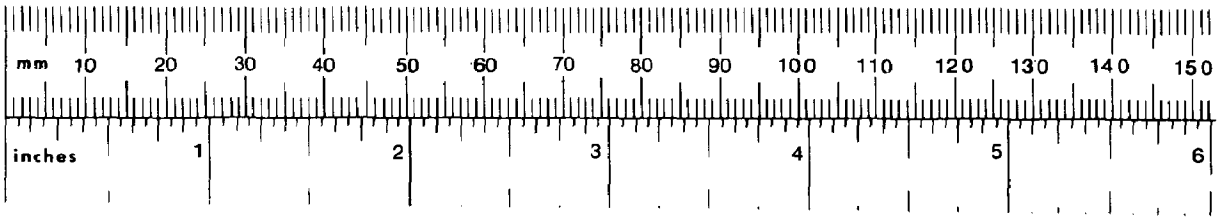
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