

Selected Plants of

GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE AND
GRAND BAY NATIONAL WILDLIFE REFUGE



Table of Contents

Note to User.	3
Selected Habitats of the Reserve and Refuge.	4
Invasive Species	10
Ferns.	11
Grasses - Monocotyledonous Plants.	13
Rushes - Monocotyledonous Plants	22
Sedges - Monocotyledonous Plants	23
Vines - Monocotyledonous Plants	26
Vines - Dicotyledonous Plants	27
Herbaceous Monocotyledonous Plants	33
Herbaceous Dicotyledonous Plants	40
Carnivorous - Dicotyledonous Plants.	64
Shrubs - Dicotyledonous Plants	70
Gymnosperm Trees	80
Angiosperm Trees.	85
Leaf Shapes.	97
Compound Leaf Types.	99
Leaf Structures	100
Species Check-List Index	101
Glossary	105
Bibliography	112

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The National Estuarine Research Reserve System is a protected network of federal, state and community partnerships which serve to promote informed management of the Nation's estuarine and coastal habitats through linked programs of stewardship, public education and scientific understanding.

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A VISITOR'S FIELD GUIDE

Note to Users

This guidebook was compiled in order to provide you, our visitors, with pictures and informative descriptions of several wetland and terrestrial plants found within the protected wildlands of the Grand Bay National Estuarine Research Reserve and the Grand Bay National Wildlife Refuge. We encourage you to cautiously explore these sensitive areas **on foot** when you are in search of these plants. Many of our coastal habitats such as pine savannas and salt pans are extremely fragile in nature. Please do not remove or disturb the plants or their parts without proper permits. Remember, take only pictures, and leave as few footprints as possible as you travel through some of Mississippi's most pristine coastal wetlands!

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This guidebook is also available electronically on line at www.dmr.state.ms.us. Periodic updates and expansions to this document will be made as additional, quality subject material becomes available. Complementary curriculum activities for K-12 can be found online at www.aquarium.usm.edu.

Selected Habitats of the Reserve and Refuge

PINE SAVANNAS

With only 3 - 5% of the original acreage remaining, wet pine savannas are one of our most endangered ecosystems. These communities once extended along the coast from the western edge of Florida to Louisiana in a band approximately 62 miles wide. The Grand Bay Reserve and Refuge contain some of the best remaining examples of this habitat type along the northern Gulf of Mexico. Pine savannas are fire-maintained grasslands with scattered



pinos and shrubs and a sun-loving, species-rich ground cover. A layer of clay found below the surface prevents the water from draining from these sites and results in wet, acidic soils that are of poor nutritional quality.

Although poor in soil quality, these habitats support some of the highest diversities (as many as 40

different species per square meter) of grass, sedge and wildflower species ever described in North America. Noteworthy are the large number of unusual plants such as carnivorous plants (those plants that are adapted to attract, capture and digest prey such as insects and other small animals) including pitcher plants, sundews, bladderworts and butterworts as well as the beautiful orchids such as the Grass Pink and Ladies' Tresses orchids.

Animals such as Raccoons, Gulf Fritillary Butterflies, Bluebirds, Blue Grosbeaks, Blue Darner Dragonflies, Red Foxes and Rainbow Snakes regularly visit or live in these habitats. Although not currently found in the Grand Bay Reserve and Refuge, the endangered Mississippi Sandhill Crane is the most notable inhabitant of the wet pine savannas of south Mississippi.



SALT AND BRACKISH MARSHES

The Reserve and Refuge's estuary is dominated by the salt marsh community. Estuaries occur where freshwater from rivers and streams mixes with the saltwater of the sea to form brackish water. Divided into three major wetland zones based on minor differences in elevation, the salt marshes are influenced by the rise and fall of the tides.

Along the fringes of many of the Reserve and Refuge's bayous (pronounced by-YOUs) the narrowest zone, the low marsh, is dominated by Smooth Cordgrass and is located where the brackish tidal waters reach every day. The tides regularly sweep into this zone, bringing with them small animals to feed in and among the vegetation. As the tides flush out of the area, they take with them tiny bits of food called detritus on which many important species of small coastal finfish and shellfish feed.

The mid-marsh is located above the mark of mean (average) high water, so it is not covered by water every day. Sandwiched between the low and high marsh, the mid-marsh zone (the largest salt marsh area) is dominated by Black Needlerush, Mississippi's most common salt marsh plant. Several stands of these plants are found throughout the Reserve and Refuge, and most are hundreds of acres in size. Scattered within the mid-marsh are extremely salty areas of sparse vegetation known as salt pans. These salt pans form in shallow depressions into which tidal waters occasionally flow and become trapped. When the trapped water evaporates, the salt is left behind. Plants and animals living in these salt pans must be extremely salt and heat tolerant. Common plants found in these salt pans include

Saltwort, Glasswort and Sea Lavender. Animals frequently found here include Fiddler Crabs, Common Buckeye Butterflies and White-tailed Deer that use these areas as salt licks.

Salt Cordgrass or Salt Meadow Cordgrass is the most common indicator species for the highest zone, the high marsh. This zone is covered with water only during unusually high water events such as hurricanes. This wetland zone serves as an interface with the adjacent terrestrial habitats. Other species of plants found in this zone include Southern Bayberry (Wax Myrtle), Yaupon Holly and Sea Ox-eye, a salt-tolerant wildflower that resembles a yellow daisy.

Salt marshes provide nursery, feeding and shelter habitats for many coastal species of fish, shellfish and other animals, buffer the mainland from powerful storm surges, filter pollutants flowing off the adjacent land, and provide recreational opportunities for fishermen, hunters and bird-watchers. Diamondback Terrapins, Raccoons, American Alligators, Oyster Catchers, Brown and White Pelicans and Clapper Rails are just a few of the animals observed here.

WOODLAND HABITATS

The majority of the woodland habitats located within the Reserve and Refuge are dominated by Slash Pines and Wiregrass and are often referred to as wet pine flatwoods; however, there are a few habitats located on higher ridges or relic

American Indian shell middens (refuse piles) that support upland (non-wetland) hardwood species such as the ever-green Live Oak. The wooded areas located close enough to the salt-water bayous and bays to be periodically impacted by saltwater flooding



or the salt spray are called maritime forests. The understory of these maritime forests is often dominated by trees that are stunted and disfigured due to the harsh conditions under which they exist. High winds associated with tropical and winter storms may cause these trees to snap in half or to become twisted. Extended saltwater flooding such as that associated with storm surges from hurricanes may also kill many of the less salt-tolerant species.

During the early spring and fall months these woodland habitats serve as critical “refueling” and resting stopover sites for birds migrating to and from Central and South America across the open water of the Gulf of Mexico. In the spring it is not unusual to find Redstarts, Black and White Warblers, Wood Thrushes and other birds utilizing the Reserve and Refuge’s woodlands as they pass through this area on their way to their nesting habitats in the north. The Oak Grove Birding Trail leads through one of the Reserve and Refuge’s few accessible examples of a maritime oak forest.

FRESHWATER MARSHES

The freshwater marshes in the Reserve and Refuge are either tidal or non-tidal depending on where they are located within the landscape. Most of these habitats are rarely, if ever, flooded by saltwater.

The vegetation in marshes is generally considered to be grasslike, although a few water-tolerant species of trees such as pond and bald cypress may be found intermixed. A dominant freshwater marsh species in Grand Bay Reserve and Refuge is Sawgrass, which forms dense stands that provide habitat for nesting birds, alligators, frogs, otters, and snakes. Ospreys, fish-eating birds of prey, nest in trees or other tall structures on the edges of freshwater marshes.



Tidal freshwater marshes are found upstream from brackish waterways. The ebb and flow of the tide still move the water levels up and down in these streams, but there is very little movement of salt into these systems except during periods of extreme drought or tidal surge. Common plants found in these marshes include Arrowhead, Pickerelweed, Cattail and the submerged Eelgrass.

These freshwater marshes serve to filter polluted runoff from adjacent uplands, store floodwaters to prevent flooding elsewhere, recharge groundwater aquifers and provide nesting and overwintering sites for recreationally important species of fish and waterfowl. Mammals such as Beavers, Muskrats and the invasive Nutrias also utilize these habitats throughout the year.

SWAMPS AND SLOUGHS

Located throughout the Reserve and Refuge are a few scattered swamps and sloughs (pronounced SLOOS). These freshwater wetlands are characterized by the presence of standing water during most of the year and the presence of woody vegetation. It is this type of coastal swamp that many visitors to our area associate with the Deep South.

The most common trees found in these habitats include the Tupelo Gum and two species of cypress — Pond and Bald. These trees have special adaptations that allow them to live in standing water. Both have what is called a



buttress (swollen) base. Additionally the cypress trees have “knees,” structures that arise from the ground and are thought to help the trees deal with the low oxygen conditions that occur in wet soils.

Many coastal species of wildlife, such as waterfowl and warblers, utilize these habitats for water, food and protective cover. The swamps may serve as rookeries for egrets, herons and other colonial nesting species of birds. These wetlands also provide important breeding sites for many of our coastal species of amphibians and reptiles such as sirens (large, aquatic salamanders), frogs, toads, turtles and alligators.

ROADSIDE HABITAT

The strip of land located adjacent to the road combined with the adjacent ditches is considered roadside habitat.

Although at first glance this habitat seems minimal, when all roadsides are added together, a significant amount of potential wildlife habitat is found. These strips of land also play an important role in stabilizing the roadsides and filtering the pollutants carried in storm waters that flow off the roads.



If left unmowed, these roadsides will be used by many species of wildlife as corridors to move from one habitat to another. They serve as feeding, breeding (especially for toads, frogs and turtles) and sheltering areas for animals to hide in until the “coast is clear” to cross the road. Many species of egrets and herons are often found feeding in these roadside ditches. In the winter large flocks of American Robins that have migrated here from the North forage for seeds here.

Beautiful species of wildflowers will grow and bloom here if given the chance to reach maturity. Some of the Reserve and Refuge’s distinctive orchids sprout up in these areas, along with the many species of wild, yellow sunflowers, Yellow Colic Root and bright Orange Candy Root, providing the passerby with a seemingly unending pathway of color.

INVASIVE SPECIES

An “invasive species” is defined as a species that is 1) non-native (or alien) to the ecosystem under consideration **and** 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. (*Executive Order 13112*). Invasive species are spread primarily through human actions.

Invasives may be as small as viruses or as large as sequoias or elephants. The Reserve and Refuge have several invasive species. The Chinese Tallow Tree (*Triadica sebifera*), also known as the Popcorn Tree, and Cogon Grass (*Imperata cylindrica*) are the two most common invasive plants on the reserve. Nutrias (*Myocastor coypus*) are common invasive animals.

Invasive species compete with native species for food, water and space. Their impacts contribute to losses in native biodiversity and changes in habitat structure, hydrology and productivity. Invasive species are now being recognized as “biological pollution,” and many states are passing laws to prohibit their sale and distribution.





FERNS

Lygodium japonicum

INVASIVE

- Common name: Japanese Climbing Fern
- Form: Herbaceous, climbing or twining perennial, up to 90 feet long
- Leaves: Opposite, compound, stalked, triangular; non-fertile leaflets lobed and dissected; fertile leaflets compressed with two rows of sporangia along the margin
- Flowers: None
- Fruit: None
- Habitat: Roadsides, upland forests, flatwoods, maritime forests
- Comment: Japanese Climbing Ferns often over grow other vegetation and shade that vegetation to the point of death.

Woodwardia areolata

Common name: Netted
Chain Fern

Form: Deciduous,
perennial,
1½ - 2 feet
tall



Leaves: Bright waxy green, lanceolate, pinnatifid, wide wings along main axis; sterile fronds shorter than fertile fronds

Flowers: None

Fruit: None

Habitat: Bogs, savannas, roadsides, upland, flatwoods, maritime forests

Comment: Fertile fronds are taller than non-fertile fronds and have narrower pinnae with chain-like rows of sori containing sporangia.

Woodwardia virginica

Common name: Virginia Chain Fern; Giant Chain Fern

Form: Deciduous, perennial, 2 - 5 feet tall

Leaves: Pinnately divided almost to midrib, leathery; long, shiny purple-brown frond stalks; fronds tapering at the base and tip; sterile and fertile fronds similar



Flowers: None

Fruit: None

Habitat: Bogs, marshes, roadsides, savannas, maritime forests and pine flatwoods

Comment: Spores produced on the underside as fertile fronds mature

June - September.

GRASSES — MONOCOTYLEDONOUS PLANTS

Aristida beyrichiana (*Aristida stricta*)

- Common name: Wiregrass or Pineland Threeawn
- Form: Erect perennial, 1½ - 3 feet tall; forms dense, spreading tufts, bunch grass
- Leaves: Mostly basal, simple, long, thin, wiry, or needlelike with tufts of fine white hairs at each leaf base; margins strongly inrolled
- Flowers: Tiny, close to stalk with three distinct hairlike awns protruding from each flower; **September - November**
- Fruit: Grain; yellow; **September - November**
- Habitat: Flatwoods, pine forests, newly burned sites
- Comment: Wiregrass is one of the most common grasses of the southern pine flatwoods. Seed stalks are rare and are observed only after fire.



Ctenium aromaticum

- Common name: Toothache Grass; Orange Grass
- Form: Erect perennial, 2 - 4 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), slender blades, attached near base, slightly hairy sheaths
- Flowers: Spikelets on one side of a curved axis; 3 - 6 inches long in two rows at right angles to axis; June - August
- Fruit: Grain; dark red, shiny, linear, $\frac{1}{16}$ inch long; June - August
- Habitat: Pine savannas, pine flatwoods, bogs
- Comment: Toothache grass emits a strong citrus aroma when crushed and produces a numbing sensation to lips, tongue and mouth if chewed.





Distichlis spicata

- Common name: Saltgrass
- Form: Perennial, up to 2 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), blue-green to gray-green, stiff, sharply pointed, coarse; spread along the entire stem; curing to a golden brown
- Flowers: Panicles; dense, spikelike; June - October
- Fruit: Grain; June - October
- Habitat: Salt and brackish marshes
- Comment: Saltgrass is an important food source for geese, other birds and certain species of larval butterflies. It is utilized in erosion control of moist saline and alkaline soils.



Echinochloa walteri

- Common name: Coast Cockspur Grass
- Form: Erect, up to 5 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), blades flat, linear, smooth, up to 2 feet long, $\frac{3}{4}$ inches wide with stiff, hairy sheaths
- Flowers: Inconspicuous, on erect or slightly sagging bristly stalks; spikelets full of bristles; pale purple; June - November
- Fruit: Grain; white, ellipsoid, up to $\frac{1}{10}$ inch long; June - November
- Habitat: Freshwater and salt marshes, ponds
- Comment: Coast Cockspur Grass is planted because of its use as food for many bird species.

Imperata cylindrica

INVASIVE

Common name: Cogon Grass

Form: Perennial, 2 - 4 feet tall

Leaves: Alternate, simple, on opposite sides of stems (2-ranked), hairy on upper surface, hairless on lower surface; blades 1 inch wide with finely toothed margins, off-centered white midribs, sharp point

Flowers: Silvery, cylindrical, branching, 3 - 11 inches long, 1½ inches wide; late winter - May

Fruit: Grain; late winter - May

Habitat: Roadsides, forests, pine savannas

Comment: Cogon Grass has white, plumelike feathery stalks when in bloom and seed. It is thought that this aggressive invasive plant entered the United States in the Grand Bay, Ala., area. This is one of the greatest threats to our coastal habitats.



Panicum repens

INVASIVE

- Common name: Torpedo Grass
- Form: Erect or leaning perennial, 2 - 3 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), stiffly ascending, narrow, linear, 2 - 10 inches long, $\frac{1}{4}$ inch wide
- Flowers: Long, open, unbranched stalks, 3 - 9 inches long
- Fruit: Grain
- Habitat: Roadside ditches, brackish and salt marshes
- Comment: This invasive grass is thought to be native to Australia. Because it grows in both aquatic and terrestrial habitats, it is very difficult to control.





Setaria geniculata

- Common name: Foxtail Grass; Knotroot Bristle Grass
- Form: Perennial, 2 - 3 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), upright, up to 6 inches long, $\frac{1}{4}$ - $\frac{1}{2}$ inch wide, straight, glabrous with flattened sheaths, keeled, membranous and ciliated ligules (leaf nodes)
- Flowers: Panicle; cylindrical, terminal, yellow, 1 - 2 inches long; **July - September**
- Fruit: Grain; **July - September**
- Habitat: Salt marshes, roadsides, savannas
- Comment: Flower clusters resemble fuzzy foxtails.

Spartina alterniflora

- Common name: Smooth Cordgrass
- Form: Stiff, erect, smooth grass, 3 - 5 feet tall
- Leaves: Alternate, simple, on opposite sides of stems (2-ranked), up to 2 feet long, up to $\frac{5}{8}$ inch wide, entire margins; hairy ligules
- Flowers: Spikes; open, branching, 5 - 20, loosely overlapping,

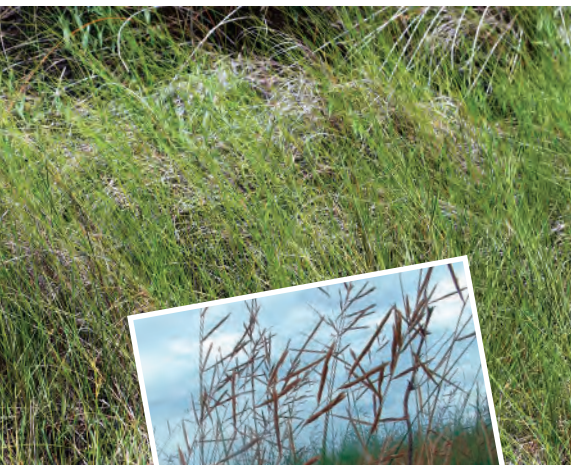


loosely appressed or spreading; spikelets, 10 - 40 on a branch, flattened, smooth, pointed tips in 2 rows, twisting, only on branch undersides;
June - October

Fruit: Grain; June - October
Habitat: Tidal marshes
Comment: Smooth Cordgrass dominates the lowest marsh zone.

Spartina patens

Common name: Saltmeadow Cordgrass
Form: Erect grass, 1 - 4 feet tall
Leaves: Alternate, simple, on opposite sides of stems (2-ranked), blades hairless, 4 - 19¹/₂ inches long, ¹/₃ - 1¹/₂ inches wide at the base
Flowers: 1 - 6 spikelets appressed to a stalk; June - September



Fruit: Grain; linear-ellipsoid; June - September
Habitat: Salt and brackish marshes, scrublands
Comment: Saltmeadow Cordgrass forms dense, single species stands that appear matted and decumbent, similar to cowlicks.



Andropogon glomeratus

Common name: Bushy Broom Grass

Form: Erect perennial, up to 7 feet tall, green or blue with hairy white tops

Leaves: Alternate, simple, on opposite sides of stems (2-ranked), flat or folded, up to 2 feet long, up to 1/2 inch wide; hairy leaf junctions (ligules)

Flowers: Racemes; 2 - 3 bunches with 5 - 12 paired spikelets with long awns and dense hairs, expanded spathes; August - October

Fruit: Grain; purple to yellow, linear-ellipsoid; August - October

Habitat: Open forests, wet pinelands, wet roadsides, savannas, bogs, fresh and brackish marshes



RUSHES - MONOCOTYLEDONOUS PLANTS

Juncus roemerianus

- Common name: Black Needlerush
- Form: Perennial, up to 5 feet tall
- Leaves: Erect, ridge, tightly rounded, appearance of a sharp-pointed stem, grayish green to black
- Flowers: Terminal to main axis or branches; late January - September
- Fruit: Capsule; late January - September
- Habitat: Brackish and salt marshes, pinelands, savannas
- Comment: Along the Gulf Coast this is the dominant salt marsh plant comprising the bulk of the biomass.

SEDGES — MOCOTYLEDONOUS PLANTS

Carex glaucescens

Common name: Clustered Sedge

Form: Perennial, 2¹/₂ - 3¹/₂ feet tall

Leaves: Alternate, 3-ranked, blades frosted or whitish, powdery coating imparts a gray-green color; blades ¹/₄ - ¹/₂ inch wide, basal sheaths brown to purple

Flowers: Inconspicuous, brown to cinnamon-brown; long solitary staminate (male) stalk extends beyond upper pistillate (female) spikes; **July - September**

Fruit: Nutlet; oval, curved inward; **July - September**

Habitat: Pinelands, savannas, roadside ditches





Cladium jamaicense

- Common name: Sawgrass
- Form: Perennial, 9 - 12 feet tall
- Leaves: Alternate, 3-ranked, large, stiff, flat to V-shaped, relatively narrow; 3 - 3 1/2 feet long, 3/4 inch wide; margins and midribs with sawlike teeth; growing from base
- Flowers: Spikelets reddish brown; extend several feet above leaves; **July - September**
- Fruit: Nutlet; olive-purple, pitted; **July - September**
- Habitat: Fresh and brackish marshes
- Comment: Stems are hollow with underside midribs that have small, sharp saw teeth.

Fuirena squarrosa



- Common name: Hairy Umbrella Sedge
- Form: Tufted perennial; growth in clumps, up to 20 inches tall
- Leaves: Blade with soft hairs or glabrous above, glabrous beneath; margins with bristles or hairy bristles
- Flowers: Umbel; terminal; **July - October**
- Fruit: Nutlet; brown; **July - October**

- Habitat: Marshes, roadside ditches, savannas, bogs
- Comment: Stems are triangular, ribbed and smooth.

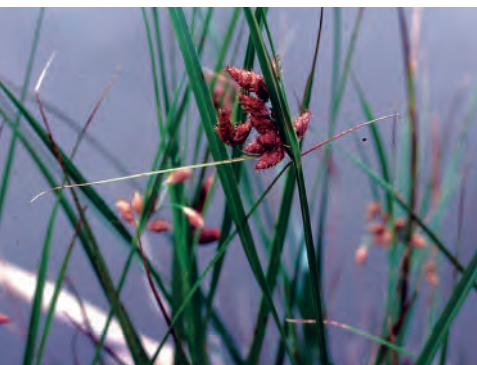
Rhynchospora latifolia (*Dichromena latifolia*)

- Common name: Whitetop Sedge
- Form: Herbaceous perennial, 2 - 3 feet tall
- Leaves: Basal, erect, smooth, less than $\frac{1}{4}$ inch wide, tapering to a tip
- Flowers: Tiny, dull, dingy-white flowers, clustered on the end of stem; surrounded by seven or more conspicuous, green-tipped, white bracts; May - September
- Fruit: Nutlet; curving inward on two sides, brown-yellow; May - September
- Habitat: Savannas, roadsides, any moist open areas
- Comment: The flowers and bracts together resemble a single white, star-shaped flower.



Scirpus robustus

- Common name: Saltmarsh Bulrush; Leafy Three-Square
- Form: Herbaceous perennial, 2 - 3 feet tall; triangular stems
- Leaves: Alternate, 3-ranked, long, slender drooping blades, 2 feet long, $\frac{1}{2}$ inch wide
- Flowers: Terminal, inconspicuous, in 1 - 5 large-bristled spikelets, 1 - $1\frac{1}{4}$ inches long, resembling tiny cones; July - October
- Fruit: Nutlet; brown, lustrous; July - October
- Habitat: Brackish and salt marshes
- Comment: Stems are hard and triangular.





VINES — MONOCOTYLEDONOUS PLANTS

Smilax laurifolia

Common name: Laurel Briar; Bamboo Vine

Form: High-climbing, woody evergreen vine; may form thickets

Leaves: Alternate, simple, oblong to elliptical, 2 - 4 inches long, entire margins; leathery

Flowers: Umbels; small, greenish yellow in leaf axils, bell shaped, tips separate; **July - August**

Fruit: Berry; green the first year maturing to black the second year; **September - October**

Habitat: Swamps, bogs, floodplain forests

Comment: Tendrils are present.

VINES — DICOTYLEDONOUS PLANTS

Bignonia capreolata

Common name: Crossvine

Form: High climbing, semi-evergreen vine

Leaves: Opposite, compound; two oblong-lanceolate leaflets with a tendril between; leaflets entire, 3 - 5 inches long; dark green in summer, bronze-red in winter

Flowers: In axillary clusters; corollas 1 - 2 inches long with five lobes, flaring lips, red to orange on the outside and orange-yellow inside; April - May

Fruit: Capsule; July - August

Habitat: Thickets, flood plain forests, woodlands

Comment: Crossvine is named for the cross-shaped pattern seen when a cut is made through the stem.



Centrosema virginianum

- Common name: Spurred
Butterfly Pea
- Form: Hairy perennial,
trailing or
climbing vine
- Leaves: Alternate, entire,
compound; three
leaflets, ovate to
lanceolate
- Flowers: Pea-shaped, blue
or lavender to
purple with a white center; spur on underside of
the flower near the base; June - August
- Fruit: Legume; July - October
- Habitat: Sandy woods, roadsides, disturbed areas



Ipomoea sagittata

- Common name: Saltmarsh Morning-glory; Arrowleaf Morning-glory
- Form: Trailing or twin-
ing perennial vine
- Leaves: Simple, entire,
sagittate (arrow-
shaped), 2 - 4
inches long
- Flowers: Vivid rose to
lavender, funnel-
shaped, 3 - 4 inch-
es long; July -
September
- Fruit: Capsule; July - September
- Habitat: Brackish marshes, moist roadsides





Ipomoea trichocarpa

- Common name: Coastal Morning-glory
- Form: Twining, slightly hairy, herbaceous annual
- Leaves: Simple, ovate, cordate, entire or with two basal lobes
- Flowers: Pink to purple, rarely white, funnel-shaped;
September - October
- Fruit: Capsule; September - October
- Habitat: Roadsides, disturbed areas, fields



Lonicera japonica

INVASIVE

- Common name: Japanese Honeysuckle
- Form: Woody, fast-climbing or trailing vine, up to 30 feet long

- Leaves: Opposite, simple, ovate to oblong, 2 - 3 inches long; often hairy
- Flowers: In pairs; tubular at the base, split into two lips at the opening; white the first day turning creamy yellow; April - June
- Fruit: Berry; blue-black, spherical, in pairs; August - September
- Habitat: Widespread in woodlands, fields, fencerows, thickets, abandoned buildings

Parthenocissus quinquefolia

Common name: Virginia Creeper; Woodbine



- Form: Climbing, woody, deciduous vine, up to 50 feet long
- Leaves: Alternate, palmately compound with five elliptic-ovate leaflets; coarsely toothed above the middle, up to 6 inches long; fiery red in the fall
- Flowers: Tiny and inconspicuous; in clusters, five petals; June - August
- Fruit: Drupe; dark blue, round; July - August
- Habitat: In woods and along banks
- Comment: Virginia Creeper is often mistaken for poison ivy, which has a tri-compound leaf.

Toxicodendron radicans

Common name: Poison Ivy

- Form: Perennial, small shrub, up to 7 feet tall or vine, up to 50 feet long
- Leaves: Alternate, pinnately compound with three elliptic to oval, irregularly toothed leaflets, 7 - 10 inches long

- Flowers: Greenish-white to yellowish-white clusters in lower leaf axils, 4 - 5 petals; April - May
- Fruit: Drupe; white; August - October
- Habitat: Thickets, open woods, sandy soils
- Comment: The plants produce oils that may stimulate allergic reactions in susceptible people.



Vitis rotundifolia

- Common name: Muscadine
- Form: Deciduous, climbing or trailing, perennial vine, up to 100 feet long; climbing facilitated by tendrils
- Leaves: Alternate, simple, $2\frac{1}{2}$ - 6 inches long, slightly lobed, rounded to broadly ovate with coarsely serrate margins, acuminate point; green above and greenish-yellow below
- Flowers: Panicles; small, inconspicuous, green to greenish-white; form along a branched axis, five petals; May - June
- Fruit: Greenish-bronze, pinkish-red, purple, or black clusters of grapes, $\frac{1}{2}$ - 1 inch in diameter; ripens August - November
- Habitat: Forests, thickets, sand dunes





HERBACEOUS MONOCOTYLEDONOUS PLANTS

Aletris lutea

- Common name: Yellow Colicroot; Star Grass
- Form: Erect perennial, 2 - 3 feet tall
- Leaves: Basal rosette, elliptical, green to yellow-green
- Flowers: Raceme; single stalk of yellow tubular to bell-shaped flowers, three petals; May - July
- Fruit: Capsule; up to $\frac{1}{3}$ inch long; August
- Habitat: Flatwoods, pinelands, bogs, savannas, roadside ditches



Calopogon pulchellus

- Common name: Grass Pink Orchid; Bog Orchid
- Form: Perennial, 4 - 20 inches tall
- Leaves: Basal rosette; stem leaves alternate and lanceolate, entire margins



- Flowers: Raceme; bright pink or purple flowers, a lip petal stands above two side petals and three sepals; April - June
- Fruit: Capsule; April - June
- Habitat: Savannas, bogs, pinewoods, wet meadows

Eriocaulon decangulare

Common name: Tenangle Pipewort; Hatpins; Hard Heads



- Form: Erect perennial,
up to
5 feet tall
- Leaves: Basal rosettes,
thin, linear, entire
margins, grasslike;
stems leafless
- Flowers: Solitary inflores-
cence of small,
hard, white flower
heads, 2 - 3 petals;
June - October

Fruit: Capsule; June - October

Habitat: Roadside ditches, pine savannas, flatwoods

Crinum americanum

Common name: Seven Sisters Lily; Swamp Lily

- Form: Bulbous perennial,
12 - 36 inches tall
- Leaves: Mostly basal,
linear, entire margins
- Flowers: Umbel of 2 -6 flowers,
fragrant, six white
petals with pink mark-
ings; leafless stalk;
March - November
- Fruit: Capsule; March -
November
- Habitat: Edges of fresh water
and low saline wet-
lands, roadside ditches



Lachnanthes carolina

Common name: Redroot

Form: Upright, hairy perennial with red rhizomes and roots

Leaves: Mostly basal, linear, and overlapping at base, up to 1 inch wide



Flowers: Panicle; round-topped, terminal, up to 5 feet tall; hairy, three grayish-white sepals, three petals similar; three yellow stamens;

June - October

Fruit: Capsule; round, hairy, $\frac{1}{4}$ inch in diameter; July - November

Habitat: Swamps, pine savannas, bogs, roadside ditches

Comment: Roots contain red juice. Ducks use this plant as a food resource.

Lilium catesbaei

Common name: Pine Lily; Catesby Lily

Form: Herbaceous perennial, up to 2 feet tall

Leaves: Alternate, simple, narrow, ascending

Flowers: Single, cup shaped, deep yellow to scarlet; 5 inches across, three petals and three sepals with similar appearance; July - September

Fruit: Capsule; September - November

Habitat: Moist flatwoods, bogs, savannas





Pontederia cordata

Common name: Pickerelweed

Form: Aquatic perennial, 2 - 3 feet tall

Leaves: Basal, ovate to lanceolate, with cordate bases and obtuse tips

Flowers: Spike, violet-blue, 6 - 8 inches long with a single subtending leaf; funnel-shaped, upper lip with three lobes, middle lobe with yellow spots; **May - September**

Fruit: Achene; **May - September**

Habitat: Variety of wet sites with shallow margins, including fresh marshes, roadside ditches, ponds

Comment: Pickerelweed is noted as a butterfly nectar plant.



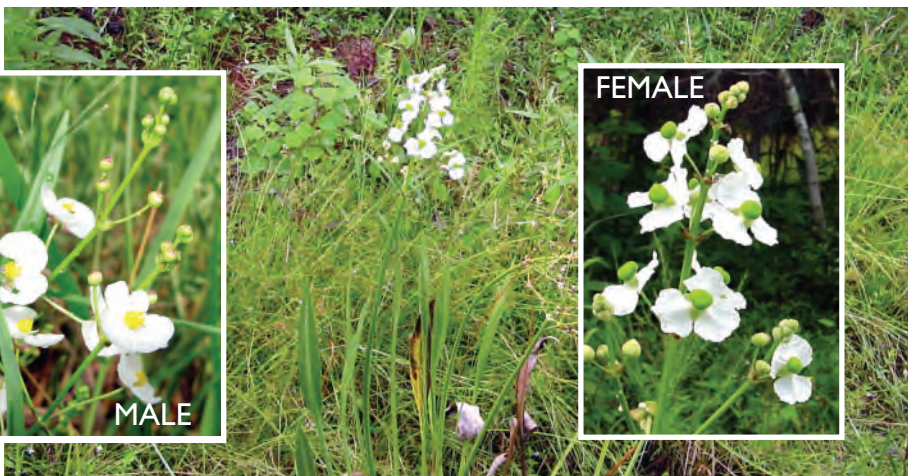
Sagittaria lancifolia

Common name: Bulltongue Arrowhead; Duck-potato

Form: Erect, herbaceous, aquatic perennial, up to 3 feet tall

Leaves: Blades lanceolate, elliptical to ovate, 8 - 24 inches long, entire margins

Flowers: Flowers on scapes in whorls; white with three conspicuous petals; staminate (male) flowers at top of scape, pistillate (female) flowers below; **March - October**



Fruit:	Achene; March - October
Habitat:	Roadside ditches, ponds, marshes, other freshwater wetlands
Comment:	The plant is used as a food resource for wildlife and used by herbalists as a diuretic.

Sisyrinchium angustifolium

Common name: Blue-eyed Grass



Form:	Erect perennial, not a grass; 20 inches tall, in grasslike clumps
Leaves:	Basal rosette, linear, entire margins
Flowers:	Terminal, violet, blue, yellow or white with yellow throats, six petals; flowering stems winged, branched, flat, resembling leaves; March - July

Fruit:	Capsule; spherical, dark green or black, up to 1/4 inch diameter; May - August
Habitat:	Roadsides, savannas, open woods, moist soils

Tillandsia usneoides

Common name: Spanish Moss

Form:	Herbaceous perennial, epiphytic, up to 25 feet long
Leaves:	Long, thin, threadlike, silvery gray
Flowers:	Inconspicuous; chartreuse to emerald green or green-blue; three petals; March - June
Fruit:	Capsule; March - June
Habitat:	Supported by trees, especially oaks and cypress trees in areas with moist, warm air



Comment: This plant is not a parasite but an epiphyte capable of photosynthesis. It uses dust particles from air and water for nourishment.

Xyris sp.

Common name: Yellow-eyed Grass



- Form: Erect, smooth, annual or perennial, up to 1 foot tall
- Leaves: Flat, linear, iris-like; 6 - 24 inches long, up to 1/2 inch wide
- Flowers: Bright yellow with three petals; flower head resembling a cone with multiple overlapping bracts covering flower bases; June - October
- Fruit: Capsule; June - October
- Habitat: Bogs, savannas, swamps, freshwater marshes
- Comment: Many different species occur and are difficult to differentiate.



HERBACEOUS DICOTYLEDONOUS PLANTS

Agalinis maritima

- Common name: Saltmarsh False Foxglove
- Form: Erect annual, 4 - 16 inches tall
- Leaves: Opposite, narrow, 1 - 1¹/₄ inches long, ³/₄ - 1 inch wide; grasslike; succulent, blunt tips
- Flowers: Purplish pink, terminal, similar to a flaring, triangular tube, five-parted; July - September
- Fruit: Capsule; August - October
- Habitat: Salt marsh, salt flats

Asclepias lanceolata

Common name: Red Milkweed

Form: Erect perennial, 16 - 48 inches tall

Leaves: Opposite, short, petiolate, linear to lanceolate, $2\frac{3}{4}$ - 8 inches long, $\frac{1}{2}$ - $\frac{3}{4}$ inch wide, entire margins

Flowers: Umbels; terminal with bright red corollas of five united petals, five sepals, orange to red hoods; May - August

Fruit: Follicle; June - September

Habitat: Pinelands, savannas, brackish marshes, roadside ditches



Asclepias longifolia

Common name: Longleaf Milkweed



Form: Upright, hairy perennial, 6 - 28 inches tall

Leaves: Opposite to nearly alternate, sessile, linear, $3\frac{1}{2}$ - $5\frac{3}{4}$ inches long, $\frac{1}{8}$ - $\frac{1}{4}$ inch wide, entire margins

Flowers: Umbels; greenish to white corollas tipped with rose; hoods greenish with purple tops; May - June

Fruit: Follicle; June - July

Habitat: Pinewoods, savannas, bogs



Aster dumosus

- Common name: White Bushy Aster
- Form: Erect to arching perennial, 3 - 5 feet tall
- Leaves: Alternate, linear to narrowly elliptic, 1 - 4 inches long, entire margins, rarely serrate; stiff
- Flowers: Heads; white to lavender ray flowers, yellow disk flowers, up to 1 inch across; **June - September**
- Fruit: Achene; **June - September**
- Habitat: Dry meadows, thickets, pinelands, roadsides
- Comment: Experts need to identify this species by using floral characteristics.

Balduina uniflora

- Common name: Savanna Honeycomb
- Form: Herbaceous perennial, 16 - 30 inches tall; stems ribbed
- Leaves: Alternate, simple, linear, $\frac{3}{4}$ - $3\frac{1}{4}$ inches long, $\frac{1}{8}$ - $\frac{1}{2}$ inch wide, entire margins, attenuated base; almost a basal rosette on young plants, reduced in size upward

Flowers: Head; ray and disk flowers yellow, ray flowers tipped with teeth, 3 - 5 inches in diameter; July - September

Fruit: Achene; July - September

Habitat: Bogs, savannas, pinelands



Bidens mitis

Common name: Smallfruit; Beggar Ticks

Form: Erect annual, up to 3 feet tall

Leaves: Opposite, pinnately dissected, linear to lanceolate

Flowers: Head; yellow; disk flowers yellow with some brown; August - October



Fruit: Achene; ovate to oblong, flat, no wings, paired barbs, less than $\frac{1}{4}$ inch long; August - October

Habitat: Fresh and brackish marshes and wetlands

Bigelovia nudata (*Chondrophora nudata*)

Common name: Rayless

Goldenrod

Form: Erect, glabrous, herbaceous perennial, 1 - 2 feet tall

Leaves: Basal leaves, simple, spatulate; stem leaves alternate, simple, few, linear to oblanceolate to filiform, 3 inches long, entire margins

Flowers: Corymb; terminal in flat-topped clusters of 3 - 5 yellow flowers; September

Fruit: Achene; nutlet tapered to base; September

Habitat: Pine barrens, savannas



Cassia obtusifolia

INVASIVE

Common name: Sicklepod

Form: Branched, herbaceous annual, up to 5 feet tall



Leaves: Alternate, pinnately compound, 3 - 10 leaflets, $\frac{3}{4}$ - 3 inches long, 1 - $2\frac{3}{4}$ inches wide, entire margins

- Flowers: Pealike; yellow; in clusters; **July - September**
- Fruit: Legume; **August - October**
- Habitat: Open woods, disturbed areas
- Comment: Seeds are toxic to some animals and plant maybe poisonous if eaten in large quantities.

Centella erecta (*Centella asiatica*)

- Common name: Spadeleaf; Erect Coinleaf
- Form: Herbaceous perennial with creeping stems that root at nodes, up to 2 feet long



- Leaves: Arise from a creeping stem, ovate to oblong, $\frac{1}{2}$ - 2 inches long, $\frac{1}{2}$ - $1\frac{1}{2}$ inches wide, margins with or without teeth; resembling a shovel; smooth or hairy stems
- Flowers: Umbel; white to pink, 1 - 4 inches in diameter; **May - October**
- Fruit: Schizocarp; flattened, ellipsoid, up to $\frac{1}{4}$ inch long, ribbed; **June - November**
- Habitat: Low pinelands, wet roadside ditches, sandy shores, savannas

Chaptalia tomentosa

- Common name: Sunbonnet
- Form: Evergreen perennial, flower scapes 3 - 10 inches tall
- Leaves: Basal rosettes, elliptic to oblanceolate, 2 - $7\frac{1}{4}$ inches long, $\frac{1}{2}$ - $1\frac{3}{4}$ inches wide, entire margins
- Flowers: Head; terminal, white



with pink undersides, bright yellow centers;

March - May

Fruit: Achene; nutlets grayish brown, ellipsoid, tapered, up to $\frac{1}{4}$ inch long; glabrous, ribbed; March - May

Habitat: Roadsides, bogs, stream banks, pine barrens

Comment: Flower head closes and nods at night then opens and follows to face the sun the next day.

Cirsium muticum

Common name: Swamp Thistle

Form: Biennial, 3 - 6 feet tall

Leaves: Basal rosette, oblong to lanceolate, 4 - 12 inches long, $1\frac{1}{2}$ - 6 inches wide, with deep, almost hairless lobes, usually tipped with a small, weak spine; light green; stem leaves alternate with weak spines

Flowers: Head; pink to magenta, 2 - 3 inches long; July - October

Fruit: Achene; nutlets smooth; July - October

Habitat: Wet meadows, moist woods, thickets



Crotalaria spectabilis

INVASIVE

Common name: Showy Rattlebox

Form: Erect, herbaceous perennial, 2 - 4 feet tall

Leaves: Alternate, simple, ovate to obovate; 2 - 7 inches long, $\frac{1}{4}$ - $\frac{3}{4}$ inch wide



- Flowers: Pealike, yellow, in elongated clusters; July - September
- Fruit: Legume; August - October
- Habitat: Fields, roadsides, disturbed areas

Comment: The rattling of the dry seeds in the pod accounts for both the common and the genus names, from the Greek word *crotalon*, meaning, “rattle.”

Diodia virginiana

Common name: Buttonweed

Form: Spreading, prostrate perennial



- Leaves: Opposite, simple, elliptic to lanceolate, sessile, 1 - 3 inches long, $\frac{1}{4}$ - $\frac{1}{2}$ inch wide, entire margins
- Flowers: Small, white, star-shaped, four petals; June - October
- Fruit: Berry; pubescent; June - October
- Habitat: Disturbed, wet areas

Erigeron strigosus

Common name: Daisy Fleabane

Form: Evergreen (depending on freezes in winter), herbaceous, up to 5 feet tall



Leaves: Alternate, simple, linear-lanceolate to elliptic, tapering at base, slightly toothed, somewhat hairy, less than 1 inch wide

Flowers: Head; white ray flowers, bright yellow disk flowers;
April - October

Fruit: Achene; tiny with bristles and scales; April - October

Habitat: Disturbed areas

Eryngium intergrifolium

Common name: Eryngo

Form: Upright, stiff perennial, 8 - 32 inches tall

Leaves: Basal leaves lanceolate, elliptic, triangular or petiolate, usually toothed; stem leaves alternate, lanceolate, elliptic or linear with teeth or spines

Flowers: Umbels; heads terminal, light blue, subtended by toothed bracts; August - October

Fruit: Schizocarp; ovoid; August - October

Habitat: Pine woods, savannas





Eupatorium capillifolium

- Common name: Dog Fennel; Yankee-weed; Cypress-weed
- Form: Herbaceous perennial, 6 - 8 feet tall
- Leaves: Alternate, often opposite at stem base, simple, pinnately to bipinnately dissected, filiform, $\frac{1}{4}$ - 1 inch long; sharp, biting odor when crushed
- Flowers: Panicle; inconspicuous; heads small with few flowers occupying the top $\frac{1}{2}$ to $\frac{1}{3}$ of plant;
June - November
- Fruit: Achene; nutlets less than $\frac{1}{8}$ inch long; heads small with few flowers occupying the top $\frac{1}{2}$ to $\frac{1}{3}$ of plant;
June - November
- Habitat: Sunny, disturbed areas
- Comment: It is the pollen of this plant, not the goldenrods, that causes much of the fall hay fever reactions.



Conoclinium coelestinum (*Eupatorium coelestinum*)

- Common name: Mistflower; Wild Ageratum
- Form: Erect to reclining perennial, up to 3 feet tall
- Leaves: Opposite, simple, $2\frac{3}{4}$ - $3\frac{1}{2}$ inches long, 1 - $2\frac{1}{2}$ inches wide, round teeth on margins; blades have wrinkled surfaces, triangular in shape
- Flowers: Head; blue to purple, hairy, in flat, branched clusters; **August - October**
- Fruit: Achene; nutlet resinous, glandular; **August - October**
- Habitat: Disturbed areas, wet margins
- Comment: Stems are green to purple and occur in clumps.

Helianthus heterophyllus

- Common name: Variableleaf Sunflower
- Form: Perennial herb, up to 3 feet tall
- Leaves: Basal leaves opposite, linear to lanceolate or oblong; upper leaves alternate, sometimes opposite; winged petioles



Flowers: Heads; 3 inches wide, terminal, solitary; bright yellow ray flowers, brownish-purple disk flowers;
 August - October

Fruit: Achene; August - October

Habitat: Savanna, moist flatwoods

Hibiscus moscheutos

Common name: Swamp Rose Mallow

Form: Herbaceous perennial, up to 7 feet tall



Leaves: Alternate, simple, broadly ovate, maplelike, $3\frac{1}{4}$ - $9\frac{3}{4}$ inches long, $1\frac{1}{2}$ - 6 inches wide, variable in hairiness, dentate margins

Flowers: Pink or white, sometimes with red centers; several near tip of stem, five petals; July - September

Fruit: Capsule; ovoid, smooth, up to 1 inch long; August - September

Habitat: Riverbanks, brackish and saltwater coastlines and marshes



Hydrocotyle bonariensis

Common name: Largeleaf Marsh
Pennywort;
Seaside
Pennywort;
Coastal-plain
Pennywort



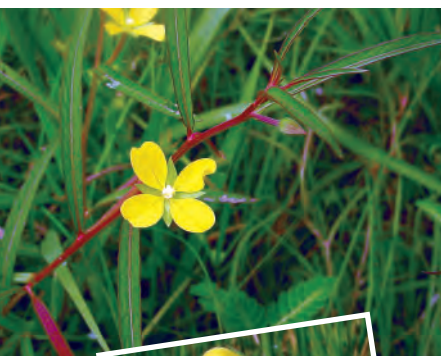
Form: Creeping, herbaceous perennial, spreads horizontally by rhizomes, up to several feet long

Leaves: Simple, large, coin-shaped, fleshy, peltate, $1\frac{1}{4}$ - 4 inches wide, toothed margins

Flowers: Umbel; branched (compound), white, cream to green;
April - September

Fruit: Schizocarp; flattened, smooth, sharply ribbed;
April - September

Habitat: Roadsides; beach dunes; moist, open sandy areas; disturbed areas



Ludwigia octovalvis

Common name: Narrow-leaf Water
Primrose; Seedbox; Rattlebox

Form: Shrub-like herbaceous annual or perennial, glabrous or hairy, 3 - 6 feet tall

Leaves: Alternate, simple, sessile, linear, lanceolate to oblanceolate, entire margins, $1\frac{1}{2}$ - 6 inches long, $\frac{3}{8}$ inch wide

Flowers: Bright yellow with four petals; conspicuous ovaries $1\frac{1}{2}$ - 2 inches long; *June - October*

Fruit: Capsule; *June - October*

Habitat: Wet ditches, marshes, stream edges, swampy woods



Marshallia tenuifolia

Common name: Barbara's Buttons; Marshallia

Form: Glabrous to hairy perennials, 18 - 24 inches tall

Leaves: Alternate, simple, linear to lanceolate, entire margins, 3 - 8 inches long, $\frac{3}{4}$ inch wide

Flowers: Head; terminal, corolla white to purplish;
July - September

Fruit: Achene; July - September

Habitat: Savannas, pinewoods, roadside ditches

Nymphaea odorata

Common name: White Water Lily; Fragrant Water Lily

Form: Herbaceous, aquatic perennial

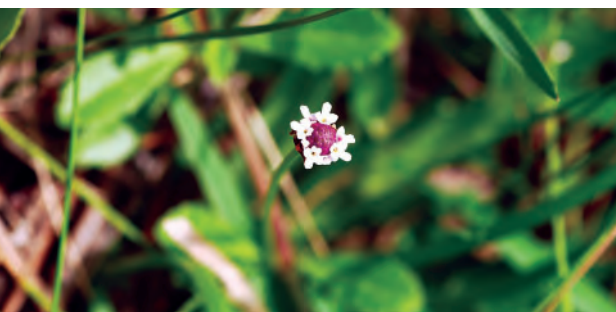


Leaves: Floating or emergent, orbicular, up to 12 inches in diameter, entire margins, purple undersides

- Flowers: Fragrant, showy white flowers, 17-40 petals and stamens; opening in the morning and closing in the afternoon; **June - September**
- Fruit: Berrylike; **June - September**
- Habitat: Ponds, stagnant pools, bog pools

Phyla nodiflora

- Common name: Turkey Tangle Frog Fruit
- Form: Creeping herbaceous perennial, up to 6 inches tall; rooting at nodes



Leaves: Opposite, simple, ovate to lanceolate, $\frac{1}{2}$ - $1\frac{1}{2}$ inch long, $\frac{1}{4}$ - $\frac{3}{4}$ inch wide, toothed margins; on four-angled, hairy stems

- Flowers: Heads; compact, white or pink; outside flowers bloom first; center flowers bloom last; **May - November**
- Fruit: Schizocarp; **May - November**
- Habitat: Open, moist sites

Pluchea rosea

- Common name: Rosy Camphorweed
- Form: Erect, herbaceous, hairy annual or short-lived perennial, up to 3 feet tall



- Leaves: Alternate, simple, oblong to elliptic, $\frac{3}{4}$ - $3\frac{1}{2}$ inches long, $\frac{1}{4}$ - $1\frac{1}{2}$ inches wide, auriculate, clasping, sessile, serrate margins; hairy, aromatic
- Flowers: Corymb; terminal, disk flowers bright purplish-pink, ray flowers absent; **August - October**
- Fruit: Achene; hairy; **August - October**
- Habitat: Ditches, savannas, low woods
- Comment: Leaves give off a camphor-like odor when crushed.

Polygala cruciata

- Common name: Drum Heads; Candy Root
- Form: Erect annuals, up to 12 inches tall
- Leaves: Whorled, simple, sessile; four leaves per whorl; linear to oblanceolate, $\frac{3}{8}$ - 2 inches long, $\frac{1}{16}$ - $\frac{1}{4}$ inch wide, entire margins
- Flowers: Raceme; terminal, relatively small, purplish-pink or green, 2 - 3 inches long, three petals united into a tube; **April - June**
- Fruit: Capsule; **April - June**
- Habitat: Bogs, savannas, pinelands
- Comment: Roots smell like wintergreen candy.



Polygala cymosa

Common name: Yellow Milkwort;
Tall Milkwort

Form: Erect biennial,
1 - 4 feet tall

Leaves: Basal rosette,
lanceolate to linear, 2 - 3 inches
long, less than $\frac{1}{4}$
inch wide; stem
leaves smaller, linear,
becoming reduced upward

Flowers: Raceme; terminal, dense, yellow, three petals united
into a tube; May - July

Fruit: Capsule; May - July

Habitat: Bogs, savannas, pinelands



Polygala lutea

Common name: Orange Milkwort; Orange Candy Root

Form: Erect biennial, up to 12 inches tall

Leaves:	Mostly basal; stem leaves alternate, succulent, oblanceolate, up to $1\frac{3}{4}$ inches long, $\frac{3}{8}$ inch wide, entire margins
Flowers:	Racemes; dense, orange, three petals united into a tube; April - October
Fruit:	Capsule; April - October
Habitat:	Bogs, savannas, pinelands

Polygala nana

Common name:	Dwarf Milkwort; Bachelor's Button; Candy Root
Form:	Annual, biennial or short-lived perennial, up to 6 inches tall
Leaves:	Basal, succulent, oblanceolate, entire margins, small points at tips; stem leaves alternate, simple
Flowers:	Raceme; several present, yellowish green, up to $1\frac{3}{4}$ inches long, $\frac{3}{4}$ inch wide, three petals united to form tube; March - October
Fruit:	Capsule, round, tip notched; March - October
Habitat:	Bogs, savannas, pinelands





Portulaca pilosa

- Common name: Rose Purslane
- Form: Erect herbaceous biennial, 8 - 12 inches
- Leaves: Alternate, simple, fleshy, spatulate, linear or oblanceolate, 1 inch long, $\frac{1}{4}$ inch wide; hairs in leaf axils
- Flowers: Pink to maroon, $\frac{1}{4}$ inch wide, solitary on short stalks, five petals; **May - October**
- Fruit: Capsule; **May - October**
- Habitat: Beaches, sandy areas

Proserpinaca pectinata

- Common name: Comb-leaf Mermaid-weed; Parrot Feather
- Form: Herbaceous perennial, up to $1\frac{3}{4}$ feet long
- Leaves: Alternate, simple, pectinate, elliptic, $1\frac{1}{4}$ inches long, $\frac{3}{4}$ inch wide, serrate margins
- Flowers: Solitary in leaf axils; no petals;



- three triangular, united sepals, three stamens; June - October
- Fruit: Achene; ovoid, three-angled, up to $\frac{1}{16}$ inch long; June - October
- Habitat: Shallow water, wet roadside ditches, savannas, bogs

Rhexia mariana

- Common name: Meadow Beauty
- Form: Hairy, erect perennial, up to $2\frac{3}{4}$ feet tall
- Leaves: Opposite, simple, sessile, lanceolate, elliptic, or ovate, up to $2\frac{3}{4}$ inches long, up to $\frac{1}{2}$ inch wide, toothed margins
- Flowers: Terminal clusters, pale pink to purple, four petals, eight stamens with anthers shaped like jester's feet, all bent to one side; ovaries vase-shaped; May - October
- Fruit: Capsule; vase shaped, glabrous; May - October
- Habitat: Meadows, roadside ditches, savannas
- Comment: Flowers fall off stem immediately when picked.





Sabatia stellaris

- Common name: Marsh Pink
- Form: Erect, glabrous annual, up to 18 inches tall
- Leaves: Opposite, simple, lanceolate to elliptic to linear to filiform, $\frac{3}{4}$ - $1\frac{1}{2}$ inches long, $\frac{3}{8}$ inch wide, entire margins
- Flowers: Terminal or axillary; five pink petals, yellow, star-shaped center outlined in maroon and bordered by white;
July - October
- Fruit: Capsule; August - November
- Habitat: Beaches, brackish marshes, ditches, meadows



Salicornia virginica

- Common name: Glasswort; Pickleweed
- Form: Smooth, fleshy perennial, trailing or arching stems, green to brown, sometimes woody; 8 - 24 inches tall
- Leaves: Reduced to scales, making stems appear leafless

Flowers: Inconspicuous, sunken into pits along the succulent spikes; **July - October**
Fruit: Utricle; **July - October**
Habitat: Salt flats, brackish and salt marshes

***Sesbania herbacea* (*Sesbania macrocarpa*, *Sesbania exaltata*)**

Common name: Hemp Sesbania or Bigpod Sesbania

Form: Annual, smooth stem, 10 - 14 feet tall; little to no branching; whitish, waxy coating that rubs off

Leaves: Alternate, even pinnately compound, up to 1 foot tall with 20 - 70 leaflets; leaflets oblong to linear to elliptic or linear with a pointed tip, 1 - 1³/₈ inches long, entire margins; undersides waxy

Flowers: Clusters; pealike, 2 - 6, axillary, 1 - 1¹/₂ inches long; yellow petals typically streaked or spotted with purple, pea (legume) shaped; **June - September**

Fruit: Legume; **July - October**

Habitat: Moist, disturbed areas

INVASIVE



Solidago altissima

- Common name: Common Goldenrod; Field Goldenrod
- Form: Herbaceous perennial, 2 - 7 feet tall
- Leaves: Alternate, simple, narrow to broad, lanceolate, up to 6 inches long, up to 1 inch wide, serrate margins toward blade tip; three major veins; upper-most leaves small and sessile
- Flowers: Panicles; terminal, golden yellow, clustered on one side of a downward curving stem; forming a pyramid-like structure; **August - November**
- Fruit: Achene; sparsely hairy, soft bristles at tips; **August - November**
- Habitat: Open woods, thickets, roadsides, savannas, disturbed areas
- Comment: This species typically grows in colonies due to the extensive rhizome system that develops. The lowest leaves are absent when the plant flowers.





Solidago sempervirens

Common name: Seaside Goldenrod

Form: Erect, herbaceous perennial, 2 - 8 feet tall, typically fleshy and waxy

Leaves: Alternate, simple, upper leaves elliptic to ovate, appressed to stem; lower leaves petiolate, elliptic to linear, 2 - 8 inches long, $\frac{1}{2}$ - $1\frac{1}{2}$ inches wide, entire margins

Flowers: Panicles; golden yellow flowers on one side of stem; August - November

Fruit: Achene; August - November

Habitat: Beaches, dunes, brackish and saltwater marshes



CARNIVOROUS DICOTYLEDONOUS PLANTS

Drosera brevifolia

Common name: Dwarf Sundew

Form: Tiny perennial, usually less than 1 $\frac{1}{4}$ inches in diameter, flat on ground

Leaves: Basal rosette with glandular hairs, spatulate, obtuse, sessile, about $\frac{3}{4}$ inch long; petioles almost nonexistent

Flowers: Terminal; pink or white; scape glandular and hairy, five petals; April - June

Fruit: Capsule; April - June

Habitat: Savannas, wet ditches, pinelands

Comment: This is the smallest species of sundews. The leaves are covered with stalked glands that appear as hairs. Glands may secrete nectar, mucilage and/or digestive enzymes. Insects either by chance or by attraction with color and/or nectar get stuck in the mucilage. Once insects are stuck on the leaves, long-stalked glands of the leaf margin bend to the leaf center to entangle the insects. Digestive enzymes are then released.

Drosera filiformis

- Common name: Threadleaf Sundew
- Form: Erect, glandular, perennial, 4 - 12 inches tall
- Leaves: Basal, filiform, glandular, fiddlehead appearance
- Flowers: Multifloral scapes, rosy pink, lavender-pink or white, five petals; **June**
- Fruit: Capsule; **June**
- Habitat: Savannas, bogs, roadside ditches
- Comment: Plants prefers somewhat drier soils than other sundews.



Pinguicula planifolia

- Common name: Chapman's Butterwort, Swamp Butterwort, Red Butterwort
- Form: Upright perennial, glandular-hairy, 4 - 12 inches tall
- Leaves: Basal rosette, sessile, oblong to spatulate, acute to acuminate, $\frac{1}{2}$ - 3 inches long, entire margins, typically curved inward, older leaves flat with slightly rolled edges, dull red to purple in sunlight, green leaves in shade; sticky, greasy mucilage
- Flowers: Terminal, irregularly shaped, white to pale violet, no veins, with deeply incised corolla lobes, 1 - $1\frac{1}{2}$ inches; **March - April**
- Fruit: Capsule; round; **March - April**
- Habitat: Very wet savannas, bogs, low pinelands, acid soils
- Comment: The plant traps small insects on its sticky leaves by glandular hairs. After trapping insects the plant digests the soft parts of the insect. The reddish to purplish leaves and incised corolla lobes are distinguishing characteristics of this butterwort species.





Pinguicula lutea

Common name: Yellow Butterwort

Form: Upright perennial, stems glandular and hairy; less than 1 foot tall

Leaves: Basal rosette; sessile, oval to elliptic, acute to acuminate, $\frac{1}{2}$ - $2\frac{3}{4}$ inches long, $\frac{3}{8}$ - 1 inch wide, entire margins, typically curved inward, fleshy with a sticky, greasy mucilage

Flowers: Terminal, solitary, irregularly shaped, bright yellow, five spurred lobes; April - May

Fruit: Capsule, round; April - May

Habitat: Savannas, bogs, low pinelands, acid soils

Comments: The plant traps small insects on its sticky leaves by glandular hairs. After trapping insects the plant digests the soft parts of the insect.

Sarracenia alata

- Common name: Pale Pitcher Plant; Yellow Pitcher Plant; Yellow Trumpets
- Form: Upright, herbaceous perennial, up to 2½ feet tall
- Leaves: Erect, long, tapering, funnel or tubular shaped, dark red or purple venation; ovate hood overhanging opening; yellow-green; releases sticky nectar inside to attract insects
- Flowers: Solitary, nodding scapes taller than pitchers, five persistent sepals, five long, delicate, draping yellow petals resembling goat ears; flower production preceding leaf appearance; **March - April**
- Fruit: Capsule; brown, warty, five seams; **May - June**
- Habitat: Savannas, bogs, pinelands
- Comment: The pitchers (tubular leaves) have no white areas. The inner hood surfaces have no purple or purple spotted areas.





Sarracenia leucophylla

Common name: Whitetop Pitcher Plant

Form: Upright, herbaceous perennial, 1 - 4 feet tall

Leaves: Erect, hollow tubes, greenish base, white top with red veins, open hoods; exuding sticky nectar inside the leaf to attracts insects

Flowers: Reddish maroon, solitary, five persistent sepals, five long, delicate, draping, fiddle-shaped petals; flower production preceding leaf appearance; **April - May**

Fruit: Capsule; five seams; **June - July**

Habitat: Savannas, bogs, pinelands

Comment: This species appears to be hybridizing (cross breeding) with the other species of pitcher plants on the Reserve and Refuge.

Sarracenia psittacina

Common name: Parrot's Beak Pitcher Plant

Form: Decumbent, herbaceous perennial, 2 - 6 inches tall

Leaves: Basal rosette, decumbent, dark purple venation; tubular leaves end in a closed hood; hood with small circular opening for insects to enter; up to 10 inches long

Flowers: Solitary, dark purple to reddish maroon, five persistent sepals, five long, delicate, draping petals resembling goat ears; up to 4 inches long; flower production preceding leaf appearance; April - May

Fruit: Capsule; five seams; June - July

Habitat: Savannas, bogs, pinelands

Comment: The closed hood resembles a parrot's beak. This is the smallest pitcher plant of the Reserve and Refuge.



Sarracenia purpurea

Common name: Purple Pitcher Plant; Devil's Boot; Sidesaddle Pitcher Plant

Form: Evergreen, partially decumbent, herbaceous perennial, 6 - 8 inches tall

Leaves: Semi-erect, basal rosette, stout, funnel shaped with dark purple venation; widest in middle; hood erect, mouth not covered

Flowers: Solitary, rose pink to dark red, five persistent sepals, five long, delicate, draping petals



resembling goat ears; flower production preceding leaf appearance; March - May

Fruit: Capsule, May - July

Habitat: Savannas, bogs, pinelands

Comment: This is the only pitcher plant on the Reserve and Refuge that actually catches and holds rain water. For the variety of *Sarracenia purpurea* found in the gulf coastal plain, some bontanists have proposed a new species designation of *Sarracenia rosea*.

SHRUBS — DICOTYLEDONOUS PLANTS

Aralia spinosa

Common name: Devil's Walking Stick

Form: Deciduous, unbranched shrub to small tree, 25 - 30 feet tall, diameter 6 - 10 inches; understory species; outer surface with grayish bark armed with stout, irregular prickles scattered over the surface; conspicuous leaf and terminal bud scars

Leaves: Alternate, bi- or tri-pinnately compound, dark green, crowding the tips of stout twigs; 3 - 5 feet long, 2 - 3 feet wide; leaflets ovate to



- elliptic, 2 - 4 inches long, serrate margins
- Flowers: Racemes; large, white; either staminate (male) or pistillate (female); stalks purple and hairy; June - September
- Fruit: Drupes; dark purple, oval to ovoid; ripen soon after flowering; June - September
- Habitat: Moist woods, thickets, middens
- Comment: Berries are favored by cedar waxwings.

Baccharis halimifolia

- Common name: Groundsel Tree
- Form: Deciduous shrub, up to 15 feet tall
- Leaves: Alternate, simple, oblong to obovate, up to 3 inches long, coarsely toothed; new leaves bright emerald green; if subtending flowers, elliptic, rounded or pointed at tip
- Flowers: Heads; tubular, light yellow to white, staminate (male) and pistillate (female) on separate plants; August - November
- Fruit: Achene, flattened, subtended by silver to white bristles; August - November
- Habitat: All marshes, disturbed areas





Borrichia frutescens

Common name: Sea Ox-eye

Form: Perennial shrub, $\frac{1}{2}$ - 4 feet tall

Leaves: Opposite, simple, sessile, succulent and oblanceolate with rounded tips and narrow tapering bases, $1\frac{1}{2}$ - 2 inches long, entire margins; gray-green

Flowers: Head; solitary, terminal with both ray and disk flowers bright yellow; May - September

Fruit: Achene; May - September

Habitat: Salt and brackish marshes



Cyrilla racemiflora

Common name: Titi; Leatherwood

Form: Evergreen to deciduous shrub or small tree, up to 30 feet tall

Leaves: Alternate, simple, willowlike, oblong to lanceolate to slightly obovate, 4 inches long, up to 1³/₄ inches wide, entire margins; yellowish green; normally clustered at ends of twigs

Flowers: Racemes; white, crowded on previous year's twig, 3 - 6 inches long, five petals; fragrant and attractive to bees; May - July

Fruit: Drupe-like; ovoid, dry; September - October

Habitat: Swamps, streams, bogs, bay heads, pinelands, flat woods, pond margins

Comment: The clustered racemes are the distinguishing characteristic for field identification because they persist on the plant during fall and winter. This is one of a few species whose leaves turn red or yellow in the fall.

Hypericum tetrapetalum

Common name: Fourpetal St. John's Wort

Form: Perennial, shrub-like, 3 - 5 feet tall, reddish-brown peeling bark



Leaves: Opposite, simple, clasping, heart-shaped, entire margins

Flowers: Yellow flowers with four petals and many stamens; June - October

Fruit: Capsule; June - October

Habitat: Pinelands, savannas

Ilex glabra

Common name: Inkberry

Form: Evergreen shrub, up to 12 feet tall

Leaves: Alternate, simple, obovate to elliptic, up to 2 inches long, entire margins with a few teeth near the apex; leathery, gray-green, often with red dots on lower surface, upper surface shiny; petiole hairy

Flowers: Small, creamy white with five petals; staminate (male) and pistillate (female) on separate plants; in clusters in axils of leaves; May - August

Fruit: Drupe; light green, black at maturity, round, up to 1/4



inch in diameter; **September - November**

Habitat: Sandy woods, swamps, savannas, bogs, thickets

Comment: The berries have been used to make black ink. Leaves have been boiled for tea.

Ilex myrtifolia

Common name: Myrtle-leaved Holly;
Myrtle Dahoon

Form: Erect evergreen
shrub or small tree,
up to 8 feet tall

Leaves: Alternate, simple,
linear to lanceolate,
about 2 inches long, entire mar-
gins; dark green above

Flowers: Small, creamy white, incon-
spicuous; staminate (male)
and pistillate (female) on the same or
separate plants; **May - August**

Fruit: Drupe; orange-red; **October - November**

Habitat: Wet, acid soils near flatwoods, ponds and swamps



Ilex vomitoria

Common name: Yaupon Holly

Form: Evergreen
shrub or small
tree, up to 25
feet tall; spiny or
hairy stems

Leaves: Alternate, simple,
oval or oblong, 1 -
1½ inches long,
rounded teeth on margins; shiny; petioles hairy

Flowers: Small, white with four petals; staminate (male) and



- stipitate (female) on separate plants; April - May
- Fruit: Drupes; bright red, round, shiny; October - November
- Habitat: Swamps, sandy woods, savannas, bogs, clearings, disturbed areas
- Comment: American Indians supposedly made an infusion of the stems and leaves as an emetic and spring tonic.

Iva frutescens

- Common name: Marsh Elder; Big-leaf Sumpweed
- Form: Deciduous shrub, 6 - 10 feet tall
- Leaves: Opposite, simple, lanceolate to elliptic, 2 - 4 inches long, serrate margins; stems and both sides of leaves hairy



- Flowers: Racemes; terminal, green, tubular, staminate (male) and pistillate (female) in same cluster; August - October

- Fruit: Achene; obovate, flattened, purplish brown; August - October

- Habitat: Saltwater and brackish marshes





Myrica cerifera

- Common name: Wax Myrtle; Bayberry
- Forms: Evergreen to semi-evergreen aromatic shrub or small tree, typically 3 - 8 feet tall (maximum 40 feet)
- Leaves: Alternate, simple, 2 - 3 inches long, serrate to entire margins, often with short hairs beneath; dark yellow-green; resinous; aromatic when crushed
- Flowers: Catkins; directly on stems; staminate (males) and pistillate (female) on separate plants; April - June
- Fruit: Berry; gray, waxy; August - September
- Habitat: Thickets, woods, high marsh regions, swamps
- Comment: Early settlers boiled the leaves and fruit to extract a wax used to make bayberry candles.

Phoradendron serotinum

Common name: Christmas Mistletoe



Form: Shrub-like evergreen, hemiparasitic plant growing attached to and penetrating the branches of broadleaf deciduous trees; up to 3 feet tall

Leaves: Opposite, simple, ovate to obovate to oblanceolate, entire margins; yellow-green, thick (succulent), leathery

Flowers: Raceme; small and yellowish; staminate (male) or pistillate (female) on separate plants; **October - January**

Fruit: Berry; round, white with a sticky pulp; **November - February**

Habitat: In broadleaf deciduous trees, especially water oaks

Comment: All parts of this plant are toxic to humans. Birds wipe their beaks on twigs, transferring seeds.

Rhus copallinum

Common name: Winged Sumac

Form: Deciduous shrub or tree, 20 - 25 feet tall

Leaves: Alternate, pinnately compound with 7 - 27 leaflets per leaf; up to 12 inches long; leaflets lance-shaped and shiny, winged along main axis, entire margins; bright red in fall



- Flowers: Panicles; small, greenish-yellow terminal, pyramid-shaped clusters; **July - August**
- Fruit: Drupe; red; **September - October**
- Habitat: Prairies, thickets, open woods, roadsides
- Comment: Unlike *Rhus vernix*, poison sumac, this species does not cause a skin rash.



Serenoa repens

- Common name: Saw Palmetto
- Form: Evergreen shrub, up to 10 feet tall; forming thickets of creeping stems
- Leaves: Simple, fan-shaped crown of palmately divided leaves, up to 3 feet wide; small spines on the petiole
- Flowers: Clusters; up to 6 feet long; individuals tiny, whitish; **May - July**
- Fruit: Drupe; ellipsoid or round, $\frac{3}{4}$ - 1 inch in diameter, black when ripe; **October - November**
- Habitat: Pinelands, salt marshes, savannas

Styrax americana

Common name: Snowbell

Form: Deciduous shrub or small tree, up to 8 feet tall

Leaves: Alternate, simple, elliptic, lanceolate to obovate, 3 inches long; minutely or slightly serrate margins

Flowers: White, five lobed, bell shaped, hanging in clusters of 2 - 4; April - May

Fruit: Capsule; June - July

Habitat: Moist soils on margins of cypress swamps, savannas and sandy streams



GYMNOSPERM TREES

Juniperus virginiana

Common name: Eastern Redcedar

Form: Evergreen conifer, up to 90 feet tall; reddish brown to brown, shredding bark.

Leaves: On mature trees, scalelike, $\frac{1}{16}$ inch long, dark green, overlapping, appressed to stem; on young trees and stems awl-shaped, opposite or ternate; blue-green to green to yellow-green

Cones: On separate trees; females, ovoid, blue-green, berrylike; males, small, narrow, yellow-brown; pol-



lination **January - March**

Fruit: None; seeds in berrylike female cones, round, dark blue, whitish covering; **October - November**

Habitat: Variety of soil types (moist to dry)

Pinus elliotii

Common name: Slash Pine

Form: Large coniferous tree, 100 - 120 feet tall; bark orange to purplish brown, furrowed and crosschecked with papery, scaly plates

Leaves: Needles 6 - 12 inches long in bundles of two or three; stiff, shiny, green

Cones: Female (seed) cones reddish brown, shiny, up to 5 inches long with single prickles on scales; male cones purple, up to 3 inches long, up to $\frac{1}{2}$ inch in diameter; pollen release **January - February**



- Fruit: None; seeds released from female cones;
October - November
- Habitat: Flatwoods, thickets, bayheads
- Comment: The wood of the Slash Pine is used extensively in building because it is extremely hard and resistant to decay.

Pinus palustris

- Common name: Longleaf Pine
- Form: Large coniferous tree, 100 - 120 feet tall; bark orange to brown to gray and coarsely scaly
- Leaves: Needles 8 - 19 inches long in bundles of three; dark green, shiny, stiff; in dense, spreading tufts at the ends of branches
- Cones: Female (seed) cones dull brown at maturity, 5 - 10 inches long; mature in two years; pollen (male) cones, cylindrical, yellow-red; pollen release March - April.



- Fruit: None; seeds released from female cone;
September - October
- Habitat: Commonly found in sandy soil





Taxodium ascendens

Common name: Pond Cypress

Form: Deciduous conifer, up to 60 feet tall

Leaves: Linear or awl-like, small, $\frac{3}{8}$ inch long, held close to the twig; green to yellow-green turning coppery yellow in the fall

Cones: Female (seed) cones nearly spherical, small, $\frac{1}{2}$ - $\frac{3}{4}$ inch, at tips of branches; male (pollen) cones in long hanging panicles, 3 - 5 inches long; pollen release **March - April**

Fruit: None; oval to nearly round female cone with peltate scales, blue-green turning brown at maturity, $\frac{3}{4}$ - 1 inch in diameter; seeds shed **October - December**

Habitat: Stream banks, bays, ponds, swamps

Comment: The difference between pond and bald cypress is that the leaves of pond cypress point upwards.

Taxodium distichum

Common name: Bald Cypress

Form: Deciduous
conifer, 100 - 120
feet tall

Leaves: Alternate, linear,
flat, $\frac{1}{4}$ - $\frac{3}{4}$ inches
long, resembling
feathery pinnately
or bi-pinnately
compound leaves;
green to yellow-
green

Cones: Female (seed)
cones, nearly



spherical, $\frac{3}{4}$ - 1
inch in diameter
near tips of
branches; male
(pollen) cones in
long hanging
panicles 4 - $5\frac{1}{2}$
inches long;
March - April

Fruit: None; oval to round female cones with peltate scales,
green turning brown at maturity, $\frac{3}{4}$ - 1 inch in diame-
ter; seeds shed October - December

Habitat: Stream banks, bays, ponds, swamps

Comment: Cypress trees have two major adaptations that help
them live in wet habitats: buttress (swollen) bases and
“knees.”

ANGIOSPERM TREES

Acer rubrum

Common name: Red Maple; Swamp Maple

Form: Deciduous tree, 60 - 90 feet tall

Leaves: Opposite, simple, cordate to palmate, 3 - 5 deep lobes, 3 - 5 inches long, serrate margins; white, tomentose below; red petioles; bright red foliage in fall

Flowers: Umbelate fascicle; small, red to orange-red, crowded on twigs; February - May, before leaves appear

Fruit: Samara; red turning brownish; March - June

Habitat: Wet or moist areas, swamps, low woods, thickets





Carya illinoensis

Common name: Pecan

Form: Deciduous tree, 100 - 150 feet tall; trunk gray and furrowed

Leaves: Alternate, odd pinnately compound, 10 - 24 inches long

Flowers: Catkins; yellowish green, staminate (male) and pistillate (female) on same tree; **April - May**

Fruit: Nut; brown, edible; **October - November**

Habitat: Deep, fertile, moist soils

Comment: The local community of Pecan is named after this species.

Cinnamomum camphora

INVASIVE

Common name: Camphor Tree

Form: Broadleaved evergreen, 50 - 100 feet tall

Leaves: Alternate, simple, oval to elliptic, up to 5 inches long, entire margins; pink on young growth with a pair or more of strong side veins; very aromatic when crushed



Flowers: Panicles; shorter than leaves, cream-colored; April
Fruit: Berry; black, pea-sized; June - July
Habitat: Sandy soils

Diospyros virginiana

Common name: American Persimmon
Form: Slow growing deciduous tree, up to 50 feet tall



Leaves: Alternate, simple, ovate, up to 6 inches long, larger on young seedlings, entire margins; dark green turning yellow in fall

Flowers: Green and inconspicuous; staminate (male) and pistillate (female) on separate trees; May - June
Fruit: Berry; plumlike, fleshy, orange, edible when ripe; September - November
Habitat: Swampy areas, along stream banks, forests, fields, pinewoods



Ilex opaca

- Common name: American Holly
- Form: Bushy evergreen shrub or small tree, up to 30 feet tall
- Leaves: Alternate, simple, oval or elliptic, 2 - 3 inches long, dentate or entire margins with several prominent spines in older leaves; leathery
- Flowers: White, small with four rounded petals; staminate (male) or pistillate (female) on separate plants; **April - June**
- Fruit: Berry; bright red, persisting from autumn to spring; **September - October**
- Habitat: Fertile, moist bottomlands, dry slopes, margins of swamps

Magnolia grandiflora

- Common name: Southern Magnolia
- Form: Broadleaved evergreen tree, up to 80 feet tall
- Leaves: Alternate, simple, broad, leathery, pinnately veined, 5 - 8 inches long; oval to oblong tapering to a point, entire margins; underside with rusty-colored wooly hairs
- Flowers: Large, white, showy, fragrant with six, nine, or 12 petals, 7 - 10 inches across; **April - June**
- Fruit: Cone-like structure, 3 - 4 inches long, purplish turning rusty brown, oblong, hairy brown with bright red



follicles embedded;
October

Habitat: Moist soils with other hardwoods
Comment: This is the state flower and tree of Mississippi.



Magnolia virginiana

Common name: Sweetbay Magnolia

Form: Small evergreen or semi-evergreen tree, up to 90 feet tall; bark gray, smooth

Leaves: Alternate, simple, elliptic to oblong, occasionally obovate, 5 - 8 inches long, up to 3 inches wide; entire margins; leathery, bright, shiny green above, white hairs giving a silvery sheen below



- Flowers: Solitary, creamy white with nine or 12 petals, 2 - 3 inches across; April - July
- Fruit: Follicles; dark red, smooth, crowded into a cone; July - October
- Habitat: Bayheads, swamps, savannas



Nyssa biflora

- Common name: Swamp Tupelo; Black Gum
- Form: Large deciduous tree, up to 120 feet tall; bark grayish brown to black, exfoliating ridges on mature trees; trunk usually swollen at base
- Leaves: Alternate, simple, elliptical to obovate, narrow; 3 - 6 inches long, entire margins; dark green above, paler and slightly hairy below; turning maroon in fall
- Flowers: Staminate (male) and pistillate (female) on separate trees, staminate in spherical clusters; pistillate on

- elongate stalks arising from leaf axils; nondescript, green; **April - June**
- Fruit: Drupe; ellipsoid, purplish blue; **August - October**
- Habitat: Brackish swamps, bogs, savannas, flatwoods, other areas periodically covered by water

Persea palustris

- Common name: Swamp Redbay; Swamp Bay
- Form: Broadleaf evergreen tree or large shrub, 30 - 40 feet tall; bark reddish brown with irregular furrows and flat topped ridges



Leaves: Alternate, simple, elliptic to lanceolate to broadly elliptic, 3 - 7 inches long, 1 - 2 inches wide, entire margins; rusty-red, curly hairs on the lower surfaces of leaves, petioles and twigs; thick and leathery; spicy odor when crushed

Flowers: White to cream in clusters on long stalks, in leaf axils; **May - June**

- Fruit: Drupe; nearly round, shiny dark blue, thin pulp; maturing **September - October**
- Habitat: Pinewoods, wooded swamps, shorelines
- Comment: Most often the leaves bear conspicuous, fleshy galls caused by tiny fly-like larvae. Galls are unsightly but do not harm the tree. Coastal residents use the Swamp Bay leaves to flavor gumbos, stews and spaghetti.



Quercus nigra

Common name: Water Oak

Form: Medium-sized deciduous tree, up to 80 feet tall; bark smooth and brown in young trees, gray to black with rough ridges as tree ages

Leaves: Alternate, simple, glabrous, obovate with three lobes at the apex, 2 - 4 inches long, 1 - 2 inches wide, entire to pinnately lobed margins, variable

Flowers: Catkins; hairy; staminate (male) stalked; pistillate (female) solitary; **April**

Fruit: Acorns; $\frac{5}{8}$ - $\frac{3}{4}$ inch long, elliptical; maturing second year; **September - November**

Habitat: Margins of ponds, streams, and lakes and on low ground associated with hardwoods, pinelands



Quercus virginiana

Common name: Live Oak

Form: Wide-spreading, broadleaf evergreen tree, up to 50 feet tall; branches spread as much as three times the height; bark red to brown, furrowed, separated into cross-cracks



Leaves: Alternate, simple, elliptic to oblong, 2 - 5 inches long, $\frac{1}{2}$ - $2\frac{1}{2}$ inches wide, entire margins; dark, shiny green above and pale gray below; underside with hairs

Flowers: Catkins; staminate (male) hairy, 3 inches long; pistillate (female) spikes of few flowers, 1 - 3 inches long;
April - March

Fruit: Acorns; $\frac{5}{8}$ - 1 inch long; narrow and oblong; green becoming dark, glossy brown; matures first year;
September - November

Habitat: Moist to dry, sandy soils, often in pure stands

Triadica sebifera (*Sapium sebiferum*)

INVASIVE

Common name: Chinese Tallow Tree; Popcorn Tree

Form: Fast-growing, short-lived deciduous tree, 30 - 40 feet tall; capable of forming dense thickets; milky sap



Leaves:	Alternate, simple, heart-shaped with tips tapering to a sharp point, $1\frac{1}{2}$ - 3 inches long, $1\frac{1}{4}$ - $2\frac{1}{2}$ inches wide, entire margins; various colors in autumn
Flowers:	Panicle-like; tiny, yellow; in clusters or slender spikes at the ends of branches; May - June
Fruit:	Capsule; green ripening to brown; maturing in winter; opening to expose three white seeds that resemble popcorn, hence the name; very oily; August - September
Habitat:	Disturbed areas and forests
Comment:	The “popcorn” of this tree is often used in ornamental displays. However, this practice is not suggested because the seeds can be easily spread. Once these trees become established, they are almost impossible to remove from the habitat.

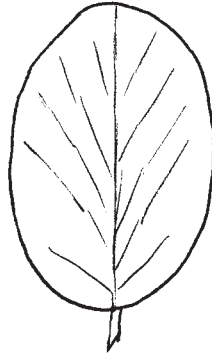
LEAF SHAPES



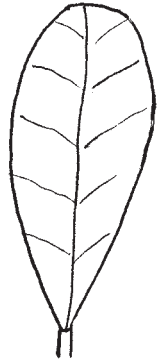
Oblong



Elliptic



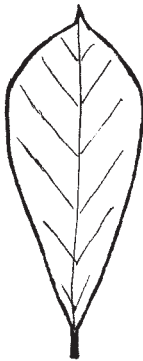
Ovate



Spatulate



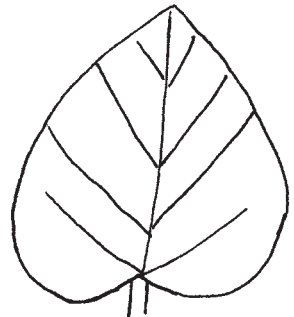
Lanceolate



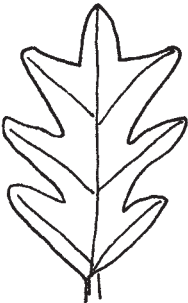
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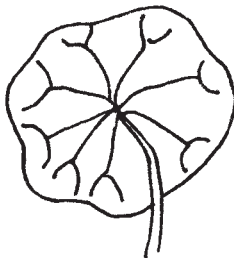
Linear



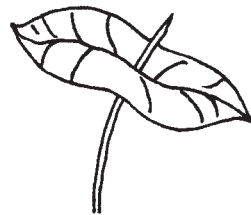
Cordate



Feather-lobed



Peltate

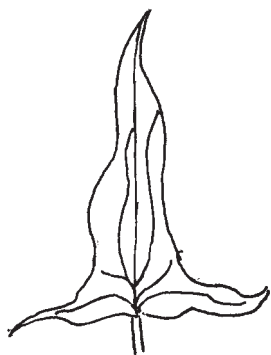


Perfoliate

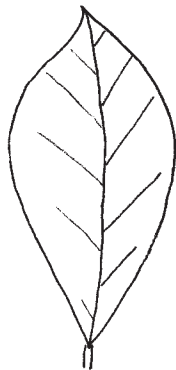


Scale

LEAF SHAPES



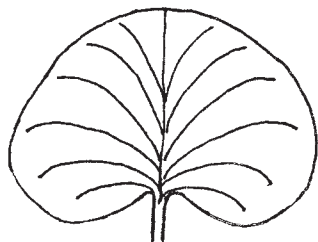
Hastate



Obovate



Sheath



Reniform

Leaf Margins



Wavy



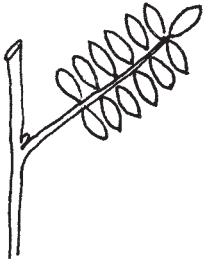
Toothed



Entire



Divided



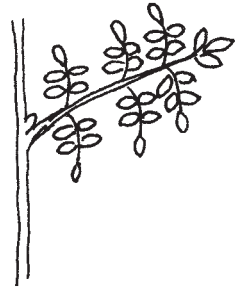
Pinnate



Palmate



Trifoliate



Bipinnate

Leaf Arrangement



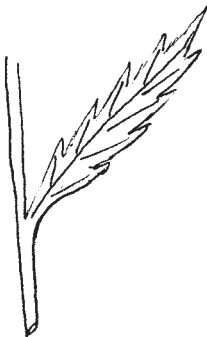
Alternate



Opposite



Whorl

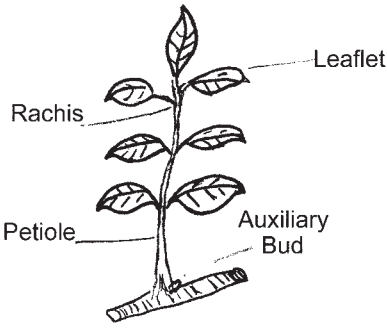


Sessile

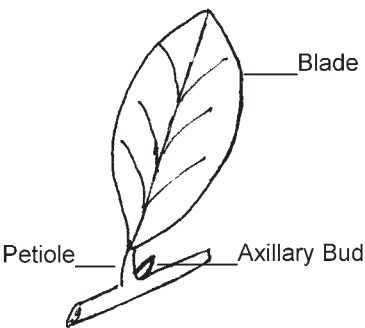


Basal

Leaf Structures

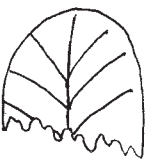


Compound Leaf



Simple Leaf

Leaf Apexes



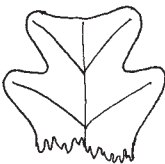
Round



Acute



Acuminate

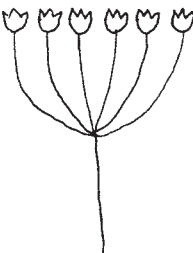


Blunt

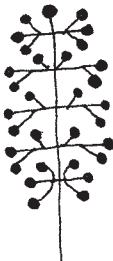
Flower Arrangement



Raceme



Umbel



Panicle

SPECIES CHECK LIST INDEX

Common Name	Scientific Name	Page	Date
American Holly	<i>Ilex opaca</i>	89	_____
American Persimmon	<i>Diospyros virginiana</i>	88	_____
Bald Cypress.	<i>Taxodium distichum</i>	84	_____
Barbara's Buttons.	<i>Marshallia tenuifolia</i>	53	_____
Black Needlerush	<i>Juncus roemerianus</i>	22	_____
Blue-eyed Grass	<i>Sisyrinchium angustifolium</i>	38	_____
Bulltongue Arrowhead.	<i>Sagittaria lancifolia</i>	37	_____
Bushy Broom Grass	<i>Andropogon glomeratus</i>	21	_____
Buttonweed	<i>Diodia virginiana</i>	47	_____
Camphor Tree	<i>Cinnamomum camphora</i>	87	_____
Chapman's Butterwort.	<i>Pinguicula planifolia</i>	65	_____
Chinese Tallow Tree.	<i>Triadica sebifera</i>	95	_____
Christmas Mistletoe.	<i>Phoradendron serotinum</i>	78	_____
Clustered Sedge	<i>Carex glaucescens</i>	23	_____
Coast Cockspur Grass	<i>Echinochloa walteri</i>	16	_____
Coastal Morning-glory.	<i>Ipomoea trichocarpa</i>	29	_____
Cogon Grass	<i>Imperata cylindrica</i>	17	_____
Comb-leaf Mermaid-weed	<i>Proserpinaca pectinata</i>	58	_____
Common Goldenrod.	<i>Solidago altissima</i>	62	_____
Crossvine	<i>Bignonia capreolata</i>	27	_____
Daisy Fleabane.	<i>Erigeron strigosus</i>	48	_____
Devil's Walking Stick.	<i>Aralia spinosa</i>	70	_____
Dog Fennel	<i>Eupatorium capillifolium</i>	49	_____
Drum Heads	<i>Polygala cruciata</i>	55	_____
Dwarf Milkwort	<i>Polygala nana</i>	57	_____
Dwarf Sundew	<i>Drosera brevifolia</i>	64	_____
Eastern Redcedar	<i>Juniperus virginiana</i>	80	_____
Eryngo	<i>Eryngium intergrifolium</i>	48	_____

Fourpetal St. John's Wort . . .	<i>Hypericum tetrapetalum</i>	74	_____
Foxtail Grass	<i>Setaria geniculata</i>	19	_____
Glasswort	<i>Salicornia virginica</i>	60	_____
Grass Pink Orchid	<i>Calopogon pulchellus</i>	33	_____
Groundsel Tree	<i>Baccharis halimifolia</i>	71	_____
Hairy Umbrella Sedge	<i>Fuirena squarrosa</i>	24	_____
Hemp Sesbania	<i>Sesbania herbacea</i>	61	_____
Inkberry	<i>Ilex glabra</i>	74	_____
Japanese Climbing Fern	<i>Lygodium japonicum</i>	11	_____
Japanese Honeysuckle	<i>Lonicera japonica</i>	29	_____
Largeleaf Marsh Pennywort . .	<i>Hydrocotyle bonariensis</i>	52	_____
Laurel Briar	<i>Smilax laurifolia</i>	26	_____
Live Oak	<i>Quercus virginiana</i>	94	_____
Longleaf Milkweed	<i>Asclepias longifolia</i>	41	_____
Longleaf Pine	<i>Pinus palustris</i>	82	_____
Marsh Elder	<i>Iva frutescens</i>	76	_____
Marsh Pink	<i>Sabatia stellaris</i>	60	_____
Meadow Beauty	<i>Rhexia mariana</i>	59	_____
Mist Flower	<i>Conoclinium coelestinum</i>	50	_____
Muscadine	<i>Vitis rotundifolia</i>	31	_____
Myrtle-leaved Holly	<i>Ilex myrtifolia</i>	75	_____
Narrow-leaf Water Primrose . .	<i>Ludwigia octovalvis</i>	52	_____
Netted Chain Fern	<i>Woodwardia areolata</i>	12	_____
Orange Milkwort	<i>Polygala lutea</i>	56	_____
Pale Pitcher Plant	<i>Sarracenia alata</i>	67	_____
Parrot's Beak Pitcher Plant . .	<i>Sarracenia psittacina</i>	69	_____
Pecan	<i>Carya illinoensis</i>	87	_____
Pickernelweed	<i>Pontederia cordata</i>	37	_____
Pine Lily	<i>Lilium catesbaei</i>	35	_____
Poison Ivy	<i>Toxicodendron radicans</i>	30	_____
Pond Cypress	<i>Taxodium ascendens</i>	83	_____

Purple Pitcher Plant.	<i>Sarracenia purpurea</i>	69	_____
Rayless Goldenrod	<i>Bigelovia nudata</i>	44	_____
Red Maple	<i>Acer rubrum</i>	85	_____
Red Milkweed	<i>Asclepias lanceolata</i>	41	_____
Redroot	<i>Lachnanthes carolina</i>	35	_____
Rose Purslane.	<i>Portulaca pilosa</i>	58	_____
Rosy Camphorweed	<i>Pluchea rosea</i>	54	_____
Saltgrass	<i>Distichlis spicata</i>	15	_____
Saltmarsh Bulrush	<i>Scirpus robustus</i>	25	_____
Saltmarsh False Foxglove	<i>Agalinis maritima</i>	40	_____
Saltmarsh Morning-glory	<i>Ipomoea sagittata</i>	28	_____
Saltmeadow Cordgrass.	<i>Spartina patens</i>	20	_____
Savanna Honeycomb	<i>Balduina uniflora</i>	42	_____
Saw Palmetto	<i>Serenoa repens</i>	79	_____
Sawgrass	<i>Cladium jamaicense</i>	24	_____
Sea Ox-eye	<i>Borrichia frutescens</i>	72	_____
Seaside Goldenrod.	<i>Solidago sempervirens</i>	63	_____
Seven Sisters Lily	<i>Crinum americanum</i>	34	_____
Showy Rattlebox	<i>Crotalaria spectabilis</i>	46	_____
Sicklepod	<i>Cassia obtusifolia</i>	44	_____
Slash Pine.	<i>Pinus elliottii</i>	81	_____
Smallfruit	<i>Bidens mitis</i>	43	_____
Smooth Cordgrass	<i>Spartina alterniflora</i>	19	_____
Snowbell`	<i>Styrax americana</i>	80	_____
Southern Magnolia	<i>Magnolia grandiflora</i>	89	_____
Spadeleaf	<i>Centella erecta</i>	45	_____
Spanish Moss	<i>Tillandsia usneoides</i>	38	_____
Spurred Butterfly Pea.	<i>Centrosema virginianum</i>	28	_____
Sunbonnet	<i>Chaptalia tomentosa</i>	45	_____
Swamp Red Bay	<i>Persea palustris</i>	92	_____
Swamp Rose Mallow	<i>Hibiscus moscheutos</i>	51	_____

Swamp Thistle	<i>Cirsium muticum</i>	46	_____
Swamp Tupelo	<i>Nyssa biflora</i>	91	_____
Sweet Bay Magnolia	<i>Magnolia virginiana</i>	90	_____
Tenangle Pipewort	<i>Eriocaulon decangulare</i>	34	_____
Threadleaf Sundew	<i>Drosera filiformis</i>	65	_____
Titi	<i>Cyrilla racemiflora</i>	73	_____
Toothache Grass	<i>Ctenium aromaticum</i>	14	_____
Torpedo Grass	<i>Panicum repens</i>	18	_____
Turkey Tangle Frog Fruit . . .	<i>Phyla nodiflora</i>	54	_____
Variableleaf Sunflower	<i>Helianthus heterophyllus</i>	50	_____
Virginia Chain Fern	<i>Woodwardia virginica</i>	12	_____
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	30	_____
Water Oak	<i>Quercus nigra</i>	93	_____
Wax Myrtle	<i>Myrica cerifera</i>	77	_____
White Bushy Aster	<i>Aster dumosus</i>	42	_____
White Water Lily	<i>Nymphaea odorata</i>	53	_____
Whitetop Pitcher Plant	<i>Sarracenia leucophylla</i>	68	_____
Whitetop Sedge	<i>Rhynchospora latifolia</i>	25	_____
Winged Sumac	<i>Rhus copallinum</i>	78	_____
Wiregrass	<i>Aristida beyrichiana</i>	13	_____
Yaupon Holly	<i>Ilex vomitoria</i>	75	_____
Yellow Butterwort	<i>Pinguicula lutea</i>	66	_____
Yellow Colicroot	<i>Aletris lutea</i>	33	_____
Yellow Milkwort	<i>Polygala cymosa</i>	56	_____
Yellow-eyed Grass	<i>Xyris sp.</i>	39	_____

Achene - a dry, closed indehiscent fruit containing a single seed

Acuminate - tapering to a short or long point, usually with side of point pinched in

Alternate leaf arrangement - one leaf per node

Angiosperm - a flowering plant

Annual - plant growing from seed to fruit in one year and then dying

Anterior - front or upper

Anther - the pollen producing part of the stamen

Apical - at the tip

Aromatic - having a fragrant, sweet-smelling or spicy aroma

Attenuated - gradually narrowing to the base

Auriculate - shaped like an earlobe

Awl - a pointed tool used to mark surfaces or for punching small holes

Awn - a bristle or slender, stiff appendage, usually at the end of a stem

Axil - the angle between a leaf or stem and its axis

Axillary - on the side

Basal rosette (basal) - a cluster of leaves all arising at the base of the plant

Berry - a simple fleshy indehiscent fruit with one or more seeds

Biennial - a plant requiring two years to produce flowers and seed

Biodiversity - the variety of life in all its forms, levels and combinations, including species diversity, genetic diversity and ecological diversity

Bipinnately compound - twice pinnate (see pinnate)

Brackish water - water intermediate in salinity between seawater and fresh water

Bract - modified leaf at the base of a flower or inflorescence

Capsule - a dry dehiscent fruit that developed from two or more carpels, sometimes leathery

Carnivorous - acquires some of its nutrients from invertebrates or other small animals such as worms or insects

Catkin - a spikelike flower cluster bearing either male or female flowers as in oaks and willows

Ciliate - with short, slender or fine hairs

Clasping - a leaf with base that entirely or partly wraps around or surrounds a stem

Composite - any member of the Asteraceae (sunflower family)

Compound leaf - leaf with the blade subdivided into two or more leaflets or pinnae

Cone-bearing plant - gymnosperm, such as the pine tree, that produces seed not enclosed by an ovary

Conifer - cone-bearing gymnosperm

Coniferous - cone-bearing plant

Cordate - heart-shaped

Corolla - all the petals of a flower

Corymb - short, broad, flat-topped cluster of flowers, outer flowers open first

Cotyledon - seed leaf of an angiosperm embryo

Culm - flowering stem of grasses and sedges

Deciduous - falling off, not persistent or evergreen

Decumbent - prostrate at or near the base with other parts erect or ascending

Dehiscent - opening and releasing contents

Dentate - toothed with teeth directed outward

Dicotyledon (dicot) - flowering plant characterized by seeds with two cotyledons, net-veined leaves, floral parts in fours, fives or multiples of four and five

Disk or disc flower - small tubular flower in the central part of a floral head; characteristic of members of the sunflower family

Distal - furthest away

Drupe - stone fruit; fleshy fruit with one hard, covered seed as cherries, plums, peaches and olives

Ecosystem - the biotic (living) community and the abiotic (non-living) environment functioning as a system

Ecotone - a transitional area between two different communities, having characteristics of both yet with a unique character of its own

Elliptic (elliptical) - being widest at the center

Emergent - aquatic plant with its lower part submerged and upper part extended above the water

Endemic - a situation in which a species or other taxonomic group is restricted to a particular geographic region

Entire - leaf margin without lobes, divisions or teeth

Epiphyte - a plant growing on another plant and obtaining no nutrients from the other plant

Estuary - an area where freshwater and sea water meet

Evergreen - bearing green leaves throughout the year;

holding live leaves over one or more winters

Exfoliating - to come off or separate from

Fascicle - a small bundle or tuft of leaves

Filiform - slender and thread-like

Flowering plant - angiosperms; plants that produce seeds enclosed by an ovary (fruit)

Follicle - a dry fruit that splits along a suture at maturity and contains more than one seed.

Frond - the leaf of a fern

Glabrous - smooth

Glandular - having glands; having secreting organs

Glaucous - surface with a very fine, white powdery substance that will rub off, as on many grapes and blueberries

Grain - a small dry seedlike fruit produced by grasses

Gymnosperm - a seed plant, as the pine, in which the seeds are not enclosed in an ovary

Habit - the way the plant grows

Hammock (hummock) - a small natural hill; a piece of land thickly wooded and usually covered with vines and bushes

Hardwood - the wood of broad-leaved dicotyledonous trees

Hemiparasitic - an organism that lives on and derives part of its nourishment from a different organism, and part through its own photosynthesis

Herb - having no persistent woody stem above ground or a plant used for seasoning food

Herbaceous - having characteristics of an herb

Hydrology - the science of water, its properties, phenomena and distribution over the earth's surface

Indehiscent - not opening

Inflorescence - a cluster of flowers

Insectivorous - acquires some of its nutrients by trapping and digesting insects

Invasive - a species native to one area but living and repro-

ducing in another area in such a way that it negatively impacts the new environment

Keel - a ridge

Keeled - with a ridge

Lanceolate - lance shaped; widest at the base and several times longer than broad

Leaflet - one of the leaflike parts of a compound leaf

Ligule - strap-shaped structure; a membranous or hairy appendage on the axial surface of a leaf in grasses at the junction of the sheath and blade; leaf node

Linear - narrow with parallel sides

Lobed - having rounded segments of an organ; as in petal, sepal, leaf

Maritime - located on or close to the sea

Marsh - wetland dominated by emergent, herbaceous vegetation

Monocotyledon (monocot) - a flowering plant with one cotyledon in seeds, floral parts in threes or multiples of three, and parallel-veined leaves

Mucilage - a substance that is produced in the cell walls of plants and that is hard when dry, and swelling and slimy when moist; composition varies

Native plant - one that originated in the area in which it grows

Naturalized - a non-native species that is reproducing in its adopted habitat

Needle - a stiff, narrow leaf

Node - the stem region where a leaf is attached or borne

Nondeciduous - evergreen; bearing leaves throughout the year

Nutlet - a small nut or nutlike fruit

Ob lanceolate - narrowly oblong

Obovate - broadly oblong

Obtuse - nearly rounded, or blunt

Opposite leaf arrangement - two leaves attached at the same node

Ovate - egg-shaped and attached at the broad end

Palmate - looking like out-

spread fingers of a hand; having three or more lobes or divisions

Panicle - a compound raceme

Parasite - an organism that lives and feeds on or in a host organism for at least part of its life cycle; may or may not kill the host

Perennial - a plant that lives three or more years

Petiolate - having a petiole

Petiole - the stem portion of a leaf

Pinnae - leaflets of a compound leaf

Pinnate - having a long axis, with branches, lobes, veins, or leaflets

Pinnatifid - leaf margins that are cut to the midrib so that they appear compound but are actually simple

Pistil - central seed-bearing organ of a flowering plant (consists of stigma, style, ovary); female part of a plant

Pistillate - having a pistil or pistils, but not stamens

Pollination - transfer of pollen from an anther to a stigma

Posterior - lower or rear

Prostrate - lying flat on the ground

Pubescent/pubescence - downy with short hairs

Raceme - an unbranched inflorescence with stalked flowers borne on a single elongated axis

Ray flower - the regular flower around the edge of the head of plants in the sunflower family; each ray flower resembles a single petal

Reniform - shaped like a kidney

Resinous - with the appearance of resin; dotted with glands

Rhizome - horizontal underground stem

Rosette - arrangement of leaves radiating from a crown or center, usually close to the ground

Sagittate - like an arrowhead

Samara - dry, indehiscent, winged fruit (as in red maple)

Savanna - a flat area dominated by grasses with widely spaced trees

Scape - a leafless stem rising from the ground and bearing flowers

Schizocarp - a dry dehiscent fruit that splits into two parts

Sepals - a sterile part of a flower that forms the typically green outer series of structures that surround the petals

Serrate - having sharp pointed teeth

Sessile - without a stalk or stem

Simple leaf - a leaf with a blade in a single part

Sori - clusters of sporangia (spore-bearing structures) of a fern (singular - sorus)

Spathe - a large leafy bract that encloses one side of a flower or inflorescence

Spatulate - having a broad rounded apex and narrow base

Spike - cluster of sessile flowers on an elongated axis as in grasses

Spikelet - a small or secondary spike; one of the ultimate parts of a grass flower

Sporangium (sporangia, plural) - a structure where

spores are produced; a spore case or sac

Spores - small reproductive bodies produced by certain species of bacteria, algae, fungi, and nonflowering plants

Stamen - the pollen-producing organ of a flower; the male part of a flower

Staminate - having stamens but lacking pistils

Submerged - growing entirely under water

Subtending - standing below and close to

Succulent - fleshy or spongy and filled with water

Tendrils - a clasping or twining structure derived from a modified stem, leaf or leaf part that is used for attachment and climbing

Ternate - arranged in threes

Three-ranked - leaves alternating on three sides of a stem

Two-ranked - leaves alternating on opposite sides of a stem

Umbel - a flower cluster in which the stalks arise from the same point, as in the ribs of an umbrella

Utricle - a small, thin-walled, one-seeded fruit

Whorl - all coming from the same point on the axis in a circular pattern

Whorled leaves - three or more leaves attached to the same node

Venation - the arrangement of veins in a leaf

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Grand Bay NERR - Base Map

