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
Selected Plants of
Grand Bay National Estuarine Research Reserve and
Grand Bay National Wildlife Refuge

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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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!

We would like to thank our partner agencies who were directly involved in the development of this guidebook: the Mississippi Department of Marine Resources’ Grand Bay National Estuarine Research Reserve and Coastal Preserve Programs; The University of Southern Mississippi’s J.L. Scott Marine Education Center and Aquarium; the Grand Bay National Wildlife Refuge; and the Mississippi State University Coastal Research and Extension Center. Many members of each of these agencies contributed photographs, digital images and technical expertise.

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 pines 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 Darter 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 YOU’s 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 birdwatchers. 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 evergreen Live Oak. The wooded areas located close enough to the saltwater 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 over-wintering 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, pinnatified, 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**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common name</td>
<td>Cogon Grass</td>
</tr>
<tr>
<td>Form</td>
<td>Perennial, 2 - 4 feet tall</td>
</tr>
<tr>
<td>Leaves</td>
<td>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</td>
</tr>
<tr>
<td>Flowers</td>
<td>Silvery, cylindrical, branching, 3 - 11 inches long, 1(\frac{1}{2}) inches wide; late winter - May</td>
</tr>
<tr>
<td>Fruit</td>
<td>Grain; late winter - May</td>
</tr>
<tr>
<td>Habitat</td>
<td>Roadsides, forests, pine savannas</td>
</tr>
<tr>
<td>Comment</td>
<td>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.</td>
</tr>
</tbody>
</table>
**Panicum repens**

**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 - 19½ inches long, ⅓ - 1⅓ 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 \( \frac{1}{2} \) 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.
**SEDDGES — MOCOTYLEDONOUS PLANTS**

**Carex glaucescens**

Common name: Clustersed Sedge  
Form: Perennial, 2½ - 3½ feet tall  
Leaves: Alternate, 3-ranked, blades frosted or whitish, powdery coating imparts a gray-green color; blades ¼ - ½ 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 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, 1/2 inch wide  
Flowers: Terminal, inconspicuous, in 1 - 5 large-bristled spikelets, 1 - 1 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.
**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

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**Ipomoea sagittata**

Common name: Saltmarsh Morning-glory; Arrowleaf Morning-glory

Form: Trailing or twining perennial vine

Leaves: Simple, entire, sagittate (arrow-shaped), 2 - 4 inches long

Flowers: Vivid rose to lavender, funnel-shaped, 3 - 4 inches 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

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**Lonicera japonica**

Common name: Japanese Honeysuckle

Form: Woody, fast-climbing or trailing vine, up to 30 feet long

*INVASIVE*
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 inflorescence of small, hard, white flower heads, 2 - 3 petals; June - October
- **Fruit:** Capsule; June - October
- **Habitat:** Roadside ditches, pine savannas, flatwoods

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**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 markings; leafless stalk; March - November
- **Fruit:** Capsule; March - November
- **Habitat:** Edges of fresh water and low saline wetlands, 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, 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
**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 $\frac{1}{4}$ inch diameter; May - August

**Habitat:** Roadsides, savannas, open woods, moist soils

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**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 \( \frac{1}{2} \) 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.
**Agalinis maritima**

Common name: Saltmarsh False Foxglove

Form: Erect annual, 4 - 16 inches tall

Leaves: Opposite, narrow, 1 - 1 ¼ inches long, ⅛ - 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, 2⅓ - 8 inches long, 1/2 - 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, 3⅓ - 5⅓ inches long, ⅜ - ⅜ 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 dudosus**
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, 3/4 - 3 1/4 inches long, 1/8 - 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
**Bigelowia nuda**ta (Chondrophora nuda**ta**)

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, 1/4 - 3 inches long, 1 - 2 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 ob lanceolate, 2 - 7\(\frac{1}{4}\) inches long, $\frac{1}{2} - 1\frac{1}{4}$ 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**

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

Page 46
Flowers: Pealike, yellow, in elongated clusters; July - September

Fruit: Legume; August - October

Habitat: Fields, road-sides, 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

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**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, bitting 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\(\frac{1}{4}\) - 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, $3^{1/4} - 9^{3/4}$ inches long, $1^{1/2} - 6$ 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 oblong-lanceolate, $\frac{3}{8} - 2$ 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

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**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 1¼ inches long, ¾ 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 1¼ inches long, ¾ 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 oblanco-olate, 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

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**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 - 1⅜ inches long, entire margins; undersides waxy

**Flowers:** Clusters; pealike, 2 - 6, axillary, 1 - 1½ 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, \( \frac{1}{2} - \frac{3}{2} \) 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 1/4 inches in diameter, flat on ground  
Leaves: Basal rosette with glandular hairs, spatulate, obtuse, sessile, about 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, 1/2 - 2 3/4 inches long, 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 2 1/2 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.

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**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; June - July
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 botanists 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.

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**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 1\(\frac{1}{4}\) 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 margins; dark green above

Flowers: Small, creamy white, inconspicuous; 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
pistillate (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.

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**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, 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-
Pinus elliottii

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 prickle on scales; male cones purple, up to 3 inches long, up to 1/2 inch in diameter; pollen release January - February

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

Habitat: Variety of soil types (moist to dry)

Pollenation January - March
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, 1/4 - 3/4 inches long, resembling feathery pinnately or bi-pinnately compound leaves; green to yellow-green

Cones: Female (seed) cones, nearly spherical, 3/4 - 1 inch in diameter near tips of branches; male (pollen) cones in long hanging panicles 4 - 5 1/2 inches long; March - April

Fruit: None; oval to round female cones with peltate scales, green turning brown at maturity, 1/4 - 1 inch in diameter; 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**  

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

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*SELECTED PLANTS OF GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE AND GRAND BAY NATIONAL WILDLIFE REFUGE*
Diospyros virginiana

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

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

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; 5/8 - 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*)  
**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

Hastate

Obovate

Sheath

Reniform

Leaf Margins

Wavy

Toothed

Entire

Divided
COMPOUND LEAF TYPES

Pinnate  Palmate  Trifoliate  Bipinnate

Leaf Arrangement

Alternate  Opposite  Whorl

Sessile  Basal
LEAF STRUCTURES

Leaf Structures

Compound Leaf
- Rachis
- Petiole
- Auxiliary Bud

Simple Leaf
- Petiole
- Axillary Bud

Leaf Apexes
- Round
- Acute
- Acuminate
- Blunt

Flower Arrangement
- Raceme
- Umbel
- Panicle
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Page</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Holly</td>
<td>Ilex opaca</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>American Persimmon</td>
<td>Diospyros virginiana</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>Bald Cypress</td>
<td>Taxodium distichium</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Barbara’s Buttons</td>
<td>Marshallia tenuifolia</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>Black Needlerush</td>
<td>Juncus roemerianus</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Blue-eyed Grass</td>
<td>Sisyrinchium angustifolium</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Bulltongue Arrowhead</td>
<td>Sagittaria lancifolia</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Bushy Broom Grass</td>
<td>Andropogon glomeratus</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Buttonweed</td>
<td>Diodia virginiana</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Camphor Tree</td>
<td>Cinnamomum camphora</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Chapman’s Butterwort</td>
<td>Pinguicula planifolia</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Chinese Tallow Tree</td>
<td>Triadica sebifera</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Christmas Mistletoe</td>
<td>Phoradendron serotinum</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Clustered Sedge</td>
<td>Carex glaucescens</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Coast Cockspur Grass</td>
<td>Echinochloa walteri</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Coastal Morning-glory</td>
<td>Ipomoea trichocarpa</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Cogon Grass</td>
<td>Imperata cylindrica</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Comb-leaf Mermaid-weed</td>
<td>Proserpinaca pectinata</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Common Goldenrod</td>
<td>Solidago altissima</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Crossvine</td>
<td>Bignonia capreolata</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Daisy Fleabane</td>
<td>Erigeron strigosus</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Devil’s Walking Stick</td>
<td>Aralia spinosa</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Dog Fennel</td>
<td>Eupatorium capillifolium</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>Drum Heads</td>
<td>Polygala cruciata</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Dwarf Milkwort</td>
<td>Polygala nana</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Dwarf Sundew</td>
<td>Drosera brevifolia</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Eastern Redcedar</td>
<td>Juniperus virginiana</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Eryngo</td>
<td>Eryngium intergrifolium</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Scientific Name</td>
<td>Page</td>
<td></td>
</tr>
<tr>
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<td>Foxtail Grass</td>
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<td>Grass Pink Orchid</td>
<td>Calopogon pulchellus</td>
<td>33</td>
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</tr>
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<td>Groundsel Tree</td>
<td>Baccharis halimifolia</td>
<td>71</td>
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</tr>
<tr>
<td>Hairy Umbrella Sedge</td>
<td>Fuirena squarrosa</td>
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<tr>
<td>Hemp Sesbania</td>
<td>Sesbania herbacea</td>
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<td>Inkberry</td>
<td>Ilex glabra</td>
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<td>Japanese Climbing Fern</td>
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<td>29</td>
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<td>Hydrocotyle bonariensis</td>
<td>52</td>
<td></td>
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<td>Laurel Briar</td>
<td>Smilax laurifolia</td>
<td>26</td>
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<td>Live Oak</td>
<td>Quercus virginiana</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>Longleaf Milkweed</td>
<td>Asclepias longifolia</td>
<td>41</td>
<td></td>
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<td>Longleaf Pine</td>
<td>Pinus palustris</td>
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<td>Marsh Elder</td>
<td>Iva frutescens</td>
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<td>Marsh Pink</td>
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<td>Rhexia mariana</td>
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<td>Vitis rotundifolia</td>
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</tr>
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<td>Myrtle-leaved Holly</td>
<td>Ilex myrtifolia</td>
<td>75</td>
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<td>Narrow-leaf Water Primrose</td>
<td>Ludwigia octovalvis</td>
<td>52</td>
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<tr>
<td>Netted Chain Fern</td>
<td>Woodwardia areolata</td>
<td>12</td>
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<tr>
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<td></td>
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<tr>
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<td>Sarracenia alata</td>
<td>67</td>
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<tr>
<td>Parrot’s Beak Pitcher Plant</td>
<td>Sarracenia psittacina</td>
<td>69</td>
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</tr>
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<td>Pecan</td>
<td>Carya illinoensis</td>
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<td></td>
</tr>
<tr>
<td>Pickerelweed</td>
<td>Pontederia cordata</td>
<td>37</td>
<td></td>
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<td>Pine Lily</td>
<td>Lilium catesbaei</td>
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<td>Toxicodendron radicans</td>
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<td>83</td>
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<td>Scientific Name</td>
<td>Page</td>
<td></td>
</tr>
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<td>------</td>
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<tr>
<td>Rayless Goldenrod</td>
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<td>44</td>
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<td>Red Maple</td>
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<td>Redroot</td>
<td>Lachnanthes carolina</td>
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<td>Portulaca pilosa</td>
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<tr>
<td>Rosy Camphorweed</td>
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<td>54</td>
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<td>Balduina uniflora</td>
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<td></td>
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<tr>
<td>Saw Palmetto</td>
<td>Serenoa repens</td>
<td>79</td>
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<td>24</td>
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<td>Borrichia frutescens</td>
<td>72</td>
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<tr>
<td>Seaside Goldenrod</td>
<td>Solidago sempervirens</td>
<td>63</td>
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</tr>
<tr>
<td>Seven Sisters Lily</td>
<td>Crinum americanum</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Showy Rattlebox</td>
<td>Crotalaria spectabilis</td>
<td>46</td>
<td></td>
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<td>Cassia obtusifolia</td>
<td>44</td>
<td></td>
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<td>Slash Pine</td>
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<td>81</td>
<td></td>
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<td>Smallfruit</td>
<td>Bidens mitis</td>
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<td>Spadeleaf</td>
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<td>Sunbonnet</td>
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<td>Swamp Red Bay</td>
<td>Persea palustris</td>
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<td>Swamp Rose Mallow</td>
<td>Hibiscus moscheutos</td>
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SELECTED PLANTS OF GRAND BAY NATIONAL ESTUARINE RESEARCH RESERVE
AND GRAND BAY NATIONAL WILDLIFE REFUGE
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Scientific Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swamp Thistle</td>
<td>Cirsium muticum</td>
<td>46</td>
</tr>
<tr>
<td>Swamp Tupelo</td>
<td>Nyssa biflora</td>
<td>91</td>
</tr>
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<td>Sweet Bay Magnolia</td>
<td>Magnolia virginiana</td>
<td>90</td>
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<tr>
<td>Tenangle Pipewort</td>
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<td>34</td>
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<td>Threadleaf Sundew</td>
<td>Drosera filiformis</td>
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<td>Titi</td>
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<td>Toothache Grass</td>
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<td>Torpedo Grass</td>
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<td>Variableleaf Sunflower</td>
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<td>Quercus nigra</td>
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<td>Wax Myrtle</td>
<td>Myrica cerifera</td>
<td>77</td>
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<tr>
<td>White Bushy Aster</td>
<td>Aster dumosus</td>
<td>42</td>
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<tr>
<td>White Water Lily</td>
<td>Nymphaea odorata</td>
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</tr>
<tr>
<td>Whitetop Pitcher Plant</td>
<td>Sarracenia leucophylla</td>
<td>68</td>
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<tr>
<td>Whitetop Sedge</td>
<td>Rhynchospora latifolia</td>
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<td>Winged Sumac</td>
<td>Rhus copallinum</td>
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<td>Wiregrass</td>
<td>Aristida beyrichiana</td>
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<td>Aletris lutea</td>
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<td>Yellow Milkwort</td>
<td>Polygala cymosa</td>
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</tr>
<tr>
<td>Yellow-eyeded Grass</td>
<td>Xyris sp.</td>
<td>39</td>
</tr>
</tbody>
</table>
**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
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capsule</td>
<td>A dry dehiscent fruit that developed from two or more carpels, sometimes leathery</td>
</tr>
<tr>
<td>Carnivorous</td>
<td>Acquires some of its nutrients from invertebrates or other small animals such as worms or insects</td>
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<tr>
<td>Catkin</td>
<td>A spikelike flower cluster bearing either male or female flowers as in oaks and willows</td>
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<tr>
<td>Ciliate</td>
<td>With short, slender or fine hairs</td>
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<tr>
<td>Clasping</td>
<td>A leaf with base that entirely or partly wraps around or surrounds a stem</td>
</tr>
<tr>
<td>Composite</td>
<td>Any member of the Asteraceae (sunflower family)</td>
</tr>
<tr>
<td>Compound leaf</td>
<td>Leaf with the blade subdivided into two or more leaflets or pinnae</td>
</tr>
<tr>
<td>Cone-bearing plant</td>
<td>Gymnosperm, such as the pine tree, that produces seed not enclosed by an ovary</td>
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<tr>
<td>Conifer</td>
<td>Cone-bearing gymnosperm</td>
</tr>
<tr>
<td>Coniferous</td>
<td>Cone-bearing plant</td>
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<tr>
<td>Cordate</td>
<td>Heart-shaped</td>
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<tr>
<td>Corolla</td>
<td>All the petals of a flower</td>
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<tr>
<td>Corymb</td>
<td>Short, broad, flat-topped cluster of flowers, outer flowers open first</td>
</tr>
<tr>
<td>Cotyledon</td>
<td>Seed leaf of an angiosperm embryo</td>
</tr>
<tr>
<td>Culm</td>
<td>Flowering stem of grasses and sedges</td>
</tr>
<tr>
<td>Deciduous</td>
<td>Falling off, not persistent or evergreen</td>
</tr>
<tr>
<td>Decumbent</td>
<td>Prostrate at or near the base with other parts erect or ascending</td>
</tr>
<tr>
<td>Dehiscent</td>
<td>Opening and releasing contents</td>
</tr>
<tr>
<td>Dentate</td>
<td>Toothed with teeth directed outward</td>
</tr>
<tr>
<td>Dicotyledon (dicot)</td>
<td>Flowering plant characterized by seeds with two cotyledons, net-veined leaves, floral parts in fours, fives or multiples of four and five</td>
</tr>
<tr>
<td>Disk or disc flower</td>
<td>Small tubular flower in the central part of a floral head; characteristic of members of the sunflower family</td>
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<tr>
<td>Distal</td>
<td>Furthest away</td>
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</table>
**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 reproducing 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

Oblanceolate - 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

**Tendril** - 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
BIBLIOGRAPHY


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