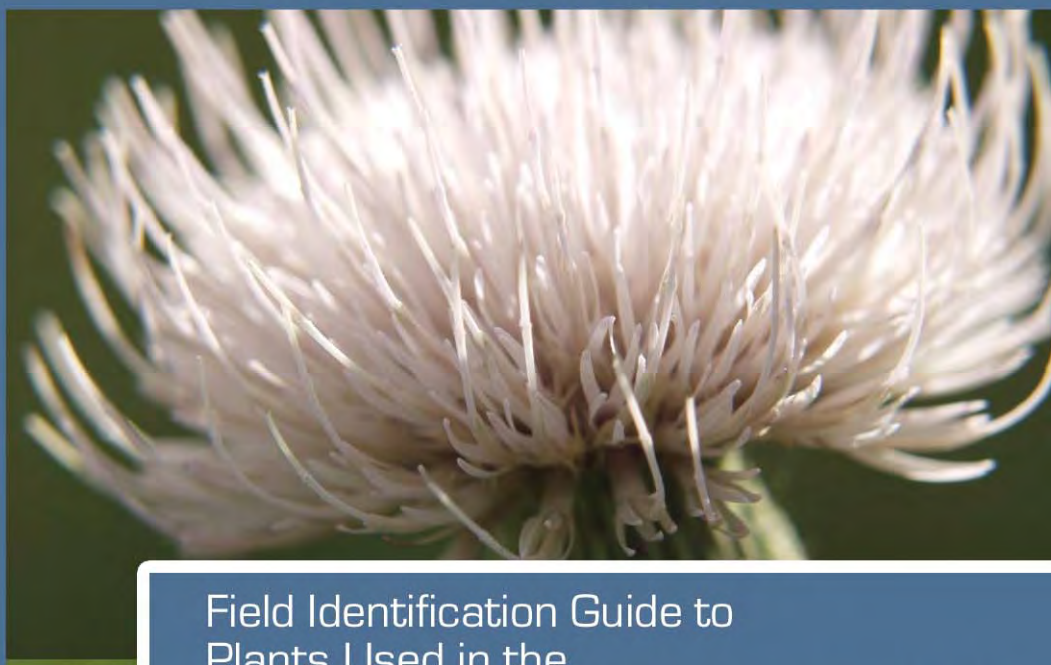
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

PLANTS



Field Identification Guide to Plants Used in the Wetland Assessment Procedure (WAP)

April 2008, Third Edition

The Field Identification Guide to Plants Used in the Wetland Assessment Procedure (WAP)

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Introduction

In 1996, the Florida Legislature directed the Southwest Florida Water Management District (District) to begin the process of establishing Minimum Flows and Levels (MFLs) throughout the District, beginning in Hillsborough, Pasco, and Pinellas counties. MFLs are defined as the flow in watercourses below which significant harm to water resources and ecology of the area would occur, and the level in surface-water bodies and aquifers in which significant harm to the water resources of the area would occur. In October 1998, the District's Governing Board approved a Minimum Flows and Levels Rule (Chapter 40D-8, F.A.C.), which included minimum levels for 41 isolated cypress wetlands,15 lakes, and 7 Floridan aquifer wells for seawater intrusion management. The methodology for establishing minimum levels in isolated cypress wetlands was based on the correlation of hydrologic data with a series of biologic health scores determined through evaluations of 36 isolated cypress wetlands (SWFWMD, 1999). Since that time, the District has continued to collect similar data for additional isolated cypress wetlands (for a future re-evaluation of the original method), as well as for other types of wetlands (for the development of minimum level methods for other wetland types).

In parallel with the adoption of the Chapter 40D-8, the District's Governing Board approved the Northern Tampa Bay Recovery and Prevention Plan. The plan is the District's strategy to achieve or protect, as applicable, the Minimum Flows and Levels established for rivers, lakes, wetlands, and aquifers. This plan is included in the District Water Management Plan, in Chapter 40D-80, F.A.C., and in the documentation of specific projects within the plan. As this plan is implemented, various types of data will be used to evaluate the success of the plan. Alternative plans may be proposed based on the results of these evaluations.

Shortly after the adoption of Chapters 40D-8 and 40D-80, the District issued a water use permit to Tampa Bay Water for eleven of its regional wellfields (commonly referred to as the Consolidated Permit). The permit included several data collection requirements for various aspects of the water resources, including ground- and surface-water level data, rainfall, water quality data, and biologic data. Most of the data collection and interpretation requirements related to lakes and wetlands were outlined in a document entitled the Environmental Management Plan (EMP, Tampa Bay Water, 2000). This plan, developed by Tampa Bay Water and approved by the District, includes specific information on monitoring wetlands, analyzing data, and reporting. As part of the EMP, the Wetland Assessment Procedure (WAP) was developed, which specifically addresses the procedure to be used to regularly collect biologic data in wetlands. Tampa Bay Water has contracted several consultants to perform WAP evaluations on over 360 wetland systems throughout the northern Tampa Bay area. District staff recognized that the WAP data would be the main source of biologic data for use in future wetland MFL development and assessments of recovery, and began performing WAP evaluations on nearly 150 wetland systems to augment those performed by Tampa Bay Water (57 of the wetlands assessed by the District overlap with those assessed by Tampa Bay Water's consultants).

The objectives of the WAP is to collect information on vegetation, hydrology, soils, and other pertinent variables in monitored wetlands to accurately characterize the ongoing biological condition and health of each wetland. It is important to understand that

although the WAP seeks to document and monitor many aspects of wetland health, many of these aspects are not the procedure's focus. Many wetlands are also subject to negative health impacts caused by surrounding land management and drainage practices, encroaching development, cattle operations, exotic plant species introduction, disease, and the variables, but the WAP attempts to focus on the collection of data that will be used to assess biological changes caused by the hydrologic effects of ground-water withdrawals.

This document was developed to assist in the identification of WAP plants found in the three designated zones on a WAP transect. The WAP Transect is a straight line from the historic wetland edge to the wetland interior. The area to be assessed from the WAP Transect is referred to as the Assessment Area. Typically, the width of the Assessment Area is approximately ten meters (including ten meters beyond the wetland interior). It is along the Transect from which vegetative assessments in the transition zone, outer deep zone and deep zone sections are made. These three zones are based upon elevations established below historic normal pool. The plants identified and described in this document have been classified to coincide with the zones of the WAP Transect in healthy wetlands. Each species has been designated a wetland zone classification as follows:

Upland (U) - Plant species that are not expected to be seen in wetlands. It is possible that a few of these species may be found along wetland edges, but are not expected throughout the transition zone.

Adaptive (AD) - Plant species designated as FAC or Upland by the Florida Department of Environmental Protection (DEP), but are commonly seen in the transition zone in limited numbers. Adaptive plants are considered transition zone plants when they are found in the outer deep or deep zones. It is not abnormal to find AD species in low numbers and distribution in the transition zone.

Transition (T) - Plant species commonly found in the transition zone, and designated either FACW or OBL by DEP.

Outer Deep (OD) - Plant species commonly found in the outer deep zone, and designated either FACW or OBL by DEP.

Deep (D) - Plant species commonly found in deep zone, and designated either FACW or OBL by DEP.

For further descriptive procedural information on the WAP, please review the 2005 Instruction Manual.

Reference

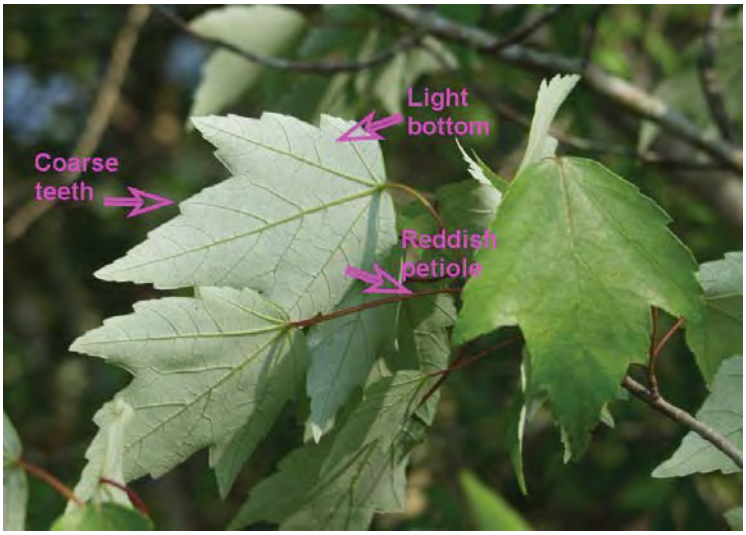
Southwest Florida Water Management District and Tampa Bay Water. 2005. Wetland Assessment Procedure (WAP) Instruction Manual for Isolated Wetlands. Southwest Florida Water Management District, Brooksville, FL. March 2005.

Index to WAP Plants

* Species in WAP list, but not included in this guide

Acer rubrum **Red maple** **WAP Zone: OD**



Tree. Leaves opposite with reddish petioles, usually 3-lobed (if 5 lobes, then bottom ones are small), margin with coarse teeth. Tree has smooth, light gray bark. Fruits in January – February, pair of winged samaras. Depending on time of year, there is almost always something red associated with this tree.
Similar Species – *Liquidambar styraciflua* has 5 lobes with small teeth, alternate leaves.

Amaranthus australis **Southern amaranth** **WAP Zone: T**


Very tall herb. Leaves alternate, large (to about 1 foot long), long petioles.
Tiny flowers in numerous long spikes. Flowers rudimentary and subtended by bracts.
Usually found in wetland edge and ditch situations, often where disturbed.

Ambrosia artemisiifolia **Common ragweed** **WAP Zone: U**

Tall herb. Erect, stems with rough hairs. Leaves large, opposite near base, alternate above, highly dissected to bipinnately compound, widest at base. Flowers inconspicuous in small heads in racemes at the ends of branches. Male flowers usually at ends of branches and drooping. Female flowers usually lower on the plant. Pollen is highly allergenic.

Amorpha fruticosa **False indigobush** **WAP Zone: T**

Shrub. Few-stemmed, up to 9 ft tall. Young branches pubescent. Leaves alternate, pinnately compound with a terminal leaflet. Leaflets entire, blunt-tipped, mucronate (midvein extends as a short abrupt point). Many leaflets. Flowers in terminal racemes, dark purple, corolla appears tubular but is actually a single petal, obvious yellow stamens are exerted from the corolla.

Ampelopsis arborea **Peppervine** **WAP Zone: AD**

Vine climbing with tendrils or sprawling. Leaves alternate but opposite tendrils, red petioles, doubly compound, widest at base. Leaflets with coarse teeth. Flowers small, greenish-white, in cymes. Berry blue-black. Typically found in floodplain forests and ruderal areas.
Similar Species - *Campsis radicans* has singly compound leaves, green petioles.

Amphicarpum muhlenbergianum **Blue maidencane** **WAP Zone: OD**

Sod-forming grass. Lance-shaped leaves bluish in color, central vein not obvious, many parallel veins, outer edge of leaf white, leaves feel stiff, sheaths hairy. Dead leaves tend to curl.
Shallow wetland and transitional areas, typically open.
Similar Species – *Panicum hemitomon* has longer bright green leaves.
Dichanthelium spp. grows in distinct clumps.

Andropogon glomeratus **Bushy bluestem** **WAP Zone: T**

Grass, tall (to 5 ft). Grows in dense tufts. Leaves mostly longer than 35 cm, usually flat, not folded, medium green, often blotched with red spots. Ligule thin, papery, usually more than 1 mm long. Sheath long. Inflorescence dense, "hairy" with awns and hairs. Looks bushy and somewhat flat-topped, silvery turning medium brownish-orange. Wide variety of open, moist, disturbed areas.
Similar Species – *Andropogon virginicus* has folded leaves with bluish cast, old inflorescences turn pale orange.

Andropogon glomeratus var. glaucopsis **Purple bluestem** **WAP Zone: OD**

Similar to *A. glomeratus*, but somewhat smaller. Leaves blue-green with lavender chalky bases. Inflorescence, not as bushy as *A. glomeratus*, but bushier than *A. virginicus*. Marshes, moist disturbed areas.
Similar Species – *Andropogon virginicus* var. *glaucus* has pale blue chalky leaves shorter than 35 cm.

Andropogon virginicus **Broomsedge bluestem** **WAP Zone: AD**

Grass to 6 ft tall (generally 3-4 ft). Tufted. Branches 1-3 at nodes. Ligules thin, papery, less than 1 mm, often with fringe of hairs. Leaf sheaths with long hairs on margins. Blades shorter than *A. glomeratus*, folded, more bluish in color, more hairy and rough on upper surface near the base. Inflorescence finer (fewer branches) than *A. glomeratus*. Old inflorescences turn pale orange in winter.

Andropogon virginicus var. glaucus **Chalky bluestem** **WAP Zone: U**

Grass. Similar to *A. virginicus* but much shorter and blue-white, chalky character. Typically found in dry uplands.
Similar Species – *Andropogon glomeratus* var. *glaucopsis* has longer leaves, purple-colored bases.

***Axonopus* spp.** **Carpetgrass** **WAP Zone: AD**

Sod-forming grass. Spreading by above-ground runners (stolons). Stems flattened. Leaf sheaths glabrous, ligule membranous, blades typically flat with 2 veins parallel to midrib for *A. furcatus* and folded with no parallel veins for *A. compressus.* Both species have long hairs along leaf edge. Blades tend to be fairly wide until reaching a somewhat blunt tip. Typically in moist disturbed areas.
Similar Species – *Paspalum setaceum* has pointed leaf tips, no parallel main veins.
Paspalum notatum has thinner, longer leaves with sharp tips.

***Baccharis* spp.** **Groundsel tree** **WAP Zone: AD**





Shrub. Alternate leaves dark green in color. Leaves with shallow lobes or coarse teeth. *B. glomeruliflora* lacks punctate glands on leaves; flowers not stalked. *B. halimifolia* has punctate glands on leaves, flowers stalked (stalks sometimes very short). *B. augustifolia* will not be in WAP wetlands (coastal).
Similar Species – *Myrica cerifera* has orangish buds with amber-colored dots on leaves.

Bacopa caroliniana **Lemon bacopa** **WAP Zone: OD**

Small herb, low growing, mat-forming. Succulent. Leaves opposite clasping (no petiole), smell like lemon when crushed. Young stems pubescent (hairy). Flowers bright blue, bilateral symmetry. Marshes, cypress domes, etc.

Berchemia scandens **Rattan vine** **WAP Zone: T**

Vine. Climbs by twining. Alternate, simple, small leaves. Leaf veins ladder-like, parallel out to leaf edge. Edge of leaves are crenate with indentations between the veins.
Bottomlands, low forests.

Callicarpa americana **American beautyberry** **WAP Zone: U**

Shrub. Tends to have long stems with few branches. Stems pubescent. Leaves opposite, crenate-serrate, with stiff hairs. Flowers in clusters in leaf axils, light pink; fruit bright purple-pink. Hammocks, overgrown flatwoods.
Similar Species – *Cephalanthus occidentalis* has no teeth, no hairs.

Campsis radicans **Trumpet creeper** **WAP Zone: T**



Vine, climbs with roots. Leaves opposite, once pinnately compound with a terminal leaflet, toothed. No tendrils. Flower tubular, trumpet-shaped, bilateral, red-orange. Fruit a pod.
Similar Species – *Ampelopsis arborea* has doubly compound leaves, widest at base, with red petioles.

Carex longii **Long's sedge** **WAP Zone: T**



Sedge. Clump-forming. Stems 3-sided (triangular), angled, not branched. Leaves mostly from base. Leaves grass-like, fine. Multiple inflorescences, compact, light green, oblong, spikes each with a long, thin bract (leaf-like) below. Moist to wet areas, typically disturbed.
Similar Species – *Fuirena scirpoidea* does not grow in clumps, spikes brown and usually 1 or 2 in number.

Celtis laevigata **Sugarberry** **WAP Zone: T**

Tree. Deciduous. Leaves alternate, bases lopsided, lanceolate with a drawn-out tip (shaped like a drawing of a candle flame). Small teeth point toward leaf tip (sometimes no teeth); leaf has three strong veins from base. Bark often has corky growths. Bottomlands and wetland fringes.
Similar Species – *Ulmus americana* and *Carpinus caroliniana* have ladderlike parallel main veins, distinct teeth.

Centella asiatica **Coinwort** **WAP Zone: T**

Low herb spreading by runners. Leaves shaped like a rounded arrowhead, palmately veined, margins slightly dentate (coarse teeth) or sinuate (wavy). Flowers small, in clusters near base of plant, greenish –white to pinkish but generally inconspicuous. Despite the scientific name, this is a native species.
Similar Species – *Dichondra caroliniensis* has smaller leaves with no teeth;
Viola grows in clumps and has leaves with long petioles.

Cephalanthus occidentalis **Common buttonbush** **WAP Zone: D**

Shrub typically to 10 ft tall. Arching branches. Bark with raised lenticels. Leaves opposite to whorled (3). Veins ladder-like, sunken below surface, do not extend to leaf edge, glabrous (no hairs), no teeth.Flowers in a dense, round head, white. Fruits form hard balls ("buttons"). Can grow in deep water with long duration of inundation.
Similar Species – *Diospyros virginiana* has alternate leaves.

Cinnamomum camphora **Camphortree** **WAP Zone: U**

Tree. Twigs green. Leaves alternate, evergreen, shiny, stiff, entire, no hairs. Camphor smell when crushed. Small white flowers. Teardrop shaped, stiff leaf with drawn-out tip. No hairs. Mid-rib of leaf yellow. Tree appears orange in spring. Naturalizes in disturbed areas, urban fringes.
Similar Species – *Quercus* leaves have blunter tips. *Persea* has hairy twigs.

Cirsium nuttallii **Nuttall's thistle** **WAP Zone: T**






Tall (typically to 5 ft) herb typically unbranched from a basal rosette. Spiny. Leaves alternate, spiny and toothed. Petioles extend down stem as wings. Flowers in heads, light pink.
Bracts (phyllaries) below flowers tight with single spine at tip.
Similar Species – *C. horridulum* has more spines, especially on the phyllaries below the flowers; *Erechtites* has no spines.

Commelina diffusa **Common dayflower** **WAP Zone: T**


Herb, generally sprawling and succulent. Leaves bright green, with basal sheaths, alternate, entire (not toothed), veins parallel, shiny surface. Flowers have 3 blue petals, bilateral symmetry, 3rd petal only slightly smaller than the other two, borne in a folded, leaf-like structure (spathe). This is a native plant.
Similar Species – *Murdannia* has narrower leaves, no spathes; *Polygonum*s have longer darker leaves, sheaths on stem above leaves (ochrea); *C. communis* and *C. erecta* with lower petal reduced, white.

Conyza canadensis var. pusilla **Canadian horseweed** **WAP Zone: AD**

Erect herb. Typically a single stem from a basal rosette. Leaves alternate, toothed or entire. Stem has many branches within the upper, flower-bearing part. Flowers in compact heads that seemingly don't open, white. The bracts below the flowers are narrow and tight. Seeds are tiny with tufts of white hairs.
"Weedy" – a fast growing plant typically found in ruderal areas.

Cornus foemina **Swamp dogwood** **WAP Zone: OD**

Small multi-stemmed tree. Leaves opposite, 1 – 4 cm wide, bases equal, veins pinnate and bend up to parallel edge. Broken leaf has "stretchy" veins that hold the broken parts together. Flowers white, 4-parted, in spreading clusters. Fruit a blue drupe ("berry-like" fleshy fruit with one seed).
Typical in shallow swamps. May be on hummocks.
Similar Species – *Cephalanthus occidentalis* leaves are wider (3 – 10 cm).

Cynodon dactylon **Bermudagrass** **WAP Zone: U**

Grass. Perennial. Sod forming by above and below ground runners. Very fine in appearance, light green, short leaves, very branchy. Sheaths loose. Ligule ciliate. Inflorescence of 3 – 5 spikes attached at one point (digitate). Spikelets in 2 rows on one side of rachis (stem of spike). Disturbed areas. Highly invasive.
Similar Species – *Sporobolus virginicus* has narrow panicles, grows in tidal areas;
most *Digitaria* have longer leaves and spikes; *D. serotina* is very hairy.

Dichondra caroliniensis **Carolina ponysfoot** **WAP Zone: AD**

Herb, low, creeping, spreads by very thin stolons. Leaves alternate but look like they come out of the ground.
Leaves reniform or shaped like a horse hoof, base deeply cordate (heart-shaped).
Small, creamy white flowers. Forest, lawns, moist areas.
Similar Species – *Centella asiatica* has larger leaves with coarse teeth;
Viola grows in clumps and has long petioles.

~~***Digitaria floridana***~~ **crabgrass** **WAP Zone: U**

Digitaria ciliaris

Digitaria ciliaris occupies disturbed wetland transitional edges. The species listed on the WAP plant list is presumed to be *D. ciliaris*, not *D. floridana* based on information provided by Dr. Bruce Hansen, University of South Florida Institute for Systematic Botany.

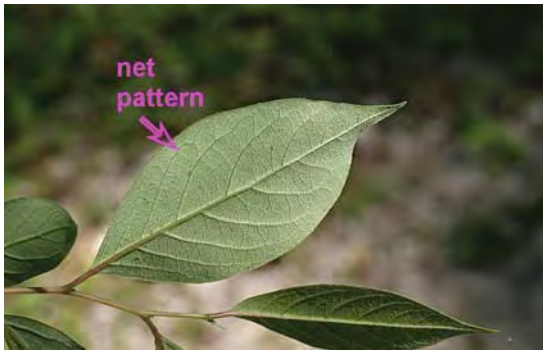
Sod-forming grass. Semi-upright and branching/arching erect with above-ground runners. Leaves: slender from wirey stems; ligule a thin membrane; sheaths tight on stem. Inflorescence narrow racemes with pointed spikelets. Multiple racemes arising close together on the stem but generally not all from the same point. Rachis axes slightly winged, spikelets pointed. The genus *Digitaria* has many species, which are very similar (except for *D. serotina*, which is smaller and very hairy).

Notes:

Diodia virginiana **Virginia buttonweed** **WAP Zone: OD**

Herb. Generally prostrate though sometimes supported by other vegetation. Leaves opposite, sessile, connected by a membrane (modified stipules) with a few bristles. Flowers small but obvious, white with 4 petals, hairy. Wetland edges, savannas, wet to mesic flatwoods.
Similar Species – *Commelina* and *Polygonum* have alternate leaves, basal sheaths.
D. teres has erect stems.

Diospyros virginiana **Common persimmon** **WAP Zone: AD**



Tree, usually small. Leaves alternate, entire (not toothed), strong central vein. Leaves often hairy when young, shiny and glabrous (not hairy) when older, especially in full sun. No smell. Leaves often have black spots, veins form net pattern on bottom. Older bark dark, with rectangular blocks.
Similar Species – *Cephalanthus* has opposite leaves, *Nyssa* has leaves widest above the middle.

Drymaria cordata **West Indian chickweed** **WAP Zone: AD**

Herb. Low growing with stiff stems. Opposite, dark green roundish leaves, with main veins palmate from base. Flowers are small, white, sticky.

Eclipta prostrata
Eclipta alba

False daisy **WAP Zone: T**

Erect herb. Stems and leaves pubescent. Leaves opposite, thinly lanceolate, obscurely serrate, tip pointed. Leaf base narrows gradually into a very short petiole. Flowers in axillary and terminal heads on stalks. Both ray and disk flowers white. Subtending involucral bracts longer than the petals.
Typically found in wet, disturbed areas.
Similar Species – *Diodia virginiana* is prostrate, has shorter leaves with no teeth.

Eleocharis baldwinii **Baldwin's spikerush** **WAP Zone: T**

Tufted herb. Stems unbranched. Leaf sheaths without blades. Single terminal flower spike with no leaf-like bracts.
Similar Species – *E. vivipara* has seeds that germinate while still attached to the parent.

Erechtites hieraciifolius **American burnweed; fireweed** **WAP Zone: AD**

Herb, usually about 3 ft (said to get up to 10 ft but not typical). Stem leafy from a basal rosette that disappears as the plant matures. Leaves light green, toothed, usually elliptic, occasionally larger leaves lobed; alternate. Heads cylindric (never "open"), all disk flowers, cream color. Single row of involucral bracts. Fruit an achene with long white hairs (pappus) that make the plant more visible in fruit than in flower. Disturbed areas (wet or dry). A weed's weed.
Similar Species – *Cirsium* has sharp spines. *Lactuca* has milky sap.

Erythrina herbacea **Coralbean** **WAP Zone: U**

Leggy shrub, leaves alternate, compound with three leaflets with earlike basal lobes. Stems spiny, often reddish when young. Flowers in terminal spikes, bilateral, red, showy. Fruit a pod with red seeds (beans).

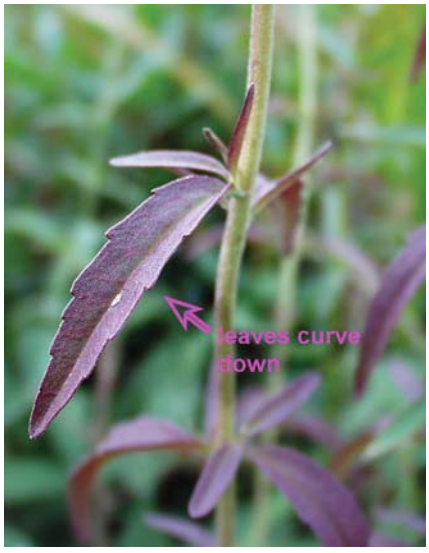
Eupatorium capillifolium **Dogfennel** **WAP Zone: AD**

Tall (up to 6 ft), multi-stemmed herb. Finely divided leaves.
Stems of young growth hairy. Flowers white, surround racemes.
Similar Species – *E. leptophyllum* has reddish young stems with few hairs , flowers on one side of raceme.

Eupatorium leptophyllum **Falsefennel** **WAP Zone: OD**

Medium (to 4 ft) herb. Young stems have no or few hairs. Leaves finely divided.
White flowers stick up on one side of raceme.
Similar Species – *E. capillifolium* has young stems with many white hairs*;* *E. compositifolium* is sticky.
Ptilimnium leaves have short stalks with more secondary branching, especially at base.

Eupatorium mohrii **Mohr's thoroughwort** **WAP Zone: AD**
Eupatorium recurvans



Herb. Typically with several erect stems to about 3 ft. Leaves opposite to whorled, sometimes alternate, slightly v-shaped in cross section, tend to curve down, toothed, small branchlets in leaf axils.
Flowers in small white heads at top of plant.
Similar Species – *Scoparia dulcis* has pale green erect leaves with flowers in leaf axils.

Eupatorium serotinum **Late-flowering thoroughwort** **WAP Zone: AD**

Herb. Multi-stemmed, very tall, to about 4 ft (occasionally much taller). Stems often hollow, pubescent. Leaves opposite, have petioles, long triangular, pubescent at least on lower surface veins. Flowers white, in small heads. Typically in open moist areas.

Euthamia caroliniana **Slender flattop goldenrod** **WAP Zone: AD**
Euthamia minor



Herb to about 3 ft tall, clonal by rhizomes. Stems erect, leafy, most branches near top. Linear alternate leaves. Flowers in flat-topped inflorescences, in small heads, both ray and disk flowers yellow. Typically found in open areas, old fields, flatwoods, and marsh edges. May become very abundant in dry marshes.

Fraxinus caroliniana **Pop ash** **WAP Zone: D**

Small tree, often with multiple trunks. Leaves opposite, pinnately compound, 5-7 leaflets, usually entire but sometimes with some teeth, leaflets typically roundish. Fruit a samara with wing wider than the seed and at least some widest in the middle. Swamps and floodplains.

Similar Species – *Carya glabra* and *C. aquatica* have alternate compound leaves; *Nyssa* has simple leaves.

Galactia elliottii **Elliott's milkpea** **WAP Zone: U**

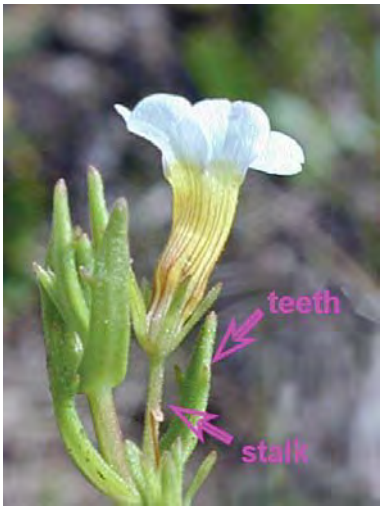
Trailing vine (does not climb trees). Leaves alternate, pinnately compound, typically 5 to 7 leaflets with blunt tips. Flowers with bilateral symmetry, white.

Similar Species – *Apios americana* climbs trees, has pointed leaflets, reddish flowers.

Gordonia lasianthus **Loblolly bay** **WAP Zone: OD**

Large tree. Leaves alternate, evergreen, sparsely toothed, green on bottom, not aromatic.
Flower white, large. Bark rich brown, deeply furrowed, with flat plates.
Similar Species – *Magnolia virginiana* leaves have no teeth, are white on bottom.
Persea has darker hairy leaves with no teeth.

Gratiola ramosa **Branched hedgehyssop** **WAP Zone: T**



Herb. Small, clonal, upright. Leaves opposite, sessile, wide at base; stiffly upward pointing with a few teeth.
Flowers tubular, obvious petals are white, united tube is yellow, bilateral.
Found in wetland transition zones and low flatwoods.
Similar Species – *G. pilosa* and *G. hispida* hairy, with flowers not on stalks.
Lindernia dubia has leaves that are narrow at base.

Hydrocotyle umbellata **Manyflower marshpennywort** **WAP Zone: OD**




Low herb spreading by stems. Leaves with long petioles. Leaves peltate (petiole attached in center of blade), round, deeply crenate. Flowers in simple (unbranched) umbels.
Typically in moist soils and may be floating in mats.
Similar Species – Other *Hydrocotyles* have multiple or branched umbels;
H. ranunculoides not peltate, notched almost to base of petiole.

Hypericum fasciculatum **Peelbark St. John's-wort** **WAP Zone: OD**



Shrub, typically about 4 ft tall (reported to reach 6.6 ft but not typical). Typically with branched stems.
Leaves very narrow, needle-like, edges rolled and on short branches forming tufts (fascicles).
Flowers yellow, five petals, many stamens, pinwheel shape. Typically found in large groups in shallow, open marshes and in open transitional edges of cypress swamps.

Hypericum mutilum **Dwarf St. John's-wort** **WAP Zone: T**



Small herb, stems erect, usually less than 1 ft tall (reportedly gets to 2 ft but not typical). Not woody. Leaves opposite, sessile (no petiole), rounded triangular shape, entire margin. Flowers small, yellow, five petals, many stamens, not pinwheel shaped. Typically in fairly open, shallow wetland areas.

Hypericum myrtifolium **Myrtleleaf St. John's-wort** **WAP Zone: T**



Small shrub to about 3 ft tall. Typically single-stemmed at base, loosely branched near top. Leaves opposite, sessile, ovate-triangular. Flowers yellow, five petals, not in a pinwheel. Sepals large and leafy, five, may remain on plant after petals fall and form a saucer. Closed petals sit in saucer before the flower opens. Flowers can be showy with many yellow stamens, and large. Typically in flatwoods, savannas, seep slopes, and transitional wetland edges.
Similar Species – *H. tetrapetalum* has 4 petals and 4 sepals (2 large and 2 small).

Hypericum tetrapetalum **Fourpetal St. John's-wort** **WAP Zone: AD**

Small shrub to 3 ft tall. Openly branched, not bushy. Leaves opposite, broadly ovate, clasp the stem, sessile. Flowers yellow, four petals, form a right-angle cross. Two pairs of sepals, outer pair large, completely encloses petals before opening, looks like praying hands. Single flowers at ends of branches.
Typical in low flatwoods, and wetland transition zones, savannas.
Similar Species – *H. myrtifolium* has 5 equal-sized sepals.
H. hypericoides has leaves that are narrow at the base and flower petals form an "X."

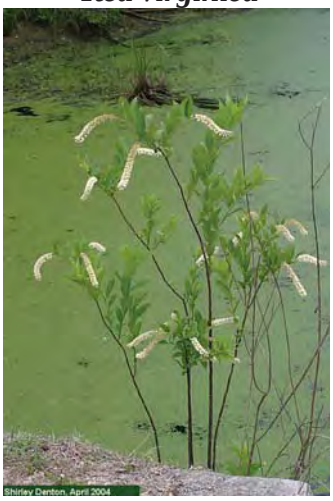
Ilex cassine **Dahoon holly** **WAP Zone: OD**

Medium sized tree. Leaves evergreen, leathery, alternate, margins generally entire except for a few short pointed teeth. Leaf bottom is smooth and green. Bark pale and smooth, branches long and twisted. Flowers white, unisexual. Fruit a red drupe. Found in many wet forested situations including outer zones of cypress systems and on hummocks in the interior.Also found in bayheads and low unburned flatwoods.
Similar Species – *Nyssa* has rough bark, straight trunk with swollen base, and no teeth on leaves.

Ilex glabra **Gallberry** **WAP Zone: AD**

Shrub, usually to about 3 ft though may get to be very tall and leggy in shade. Clonal. Leaves alternate, thick, dark green, evergreen; have a few blunt teeth near the tip. Flowers white. Fruits a black drupe (not edible, note the common name!) Typically found in flatwoods especially on the edges of flatwoods ponds, may be in transitional edges of wetlands. Occasionally on hummocks.
Similar Species – *Baccharis* has leaves with coarse teeth and is not clonal.

Itea virginica **Virginia-willow, Sweet spire** **WAP Zone: OD**



Shrub up to about 8 ft tall with slender stems. Leaves alternate, deciduous, slender, finely serrate, prominent veins on underside. Flowers white, in slender, bottle-brush shaped racemes at ends of branches. Blooms in late spring. The fruit is a persistant capsule. Found in many types of wetlands but especially those with some shade. May be found on hummocks in the deep zone and at ground level toward outer edge.
Similar Species – *Cornus foemina* has opposite leaves without teeth.

Leersia hexandra **Southern cutgrass** **WAP Zone: OD**

Sod-forming grass. Leaves stiffly ascending, less than 9 mm wide, scabrous (rough), pale green often with dark spots. Does not flower much. Few flowers, rice-like. Spikelets flattened, keeled, no awns.
Prefers open marsh. Grows very rapidly when dry wetlands rehydrate.

Lindernia grandiflora **Savannah false pimpernel** **WAP Zone: T**

Small herb. Leaves opposite, sessile, simple. Stems weak or creeping. Flowers light lavender spotted with violet, bilateral symmetry, 3 fairly large, united petals and two smaller ones, joined tube is violet.
Moist areas, often in transition zones of isolated wetlands.
Similar Species – *Bacopa caroliniana* has hairy stems, lemony smell.
Hypericum mutilum has yellow flowers, does not creep.

Liquidambar styraciflua **Sweetgum** **WAP Zone: T**

Large tree with straight trunk. Twigs sometimes with corky wings. Leaves alternate, 5-lobed (star-shaped), fine teeth on edge. Older leaves may be purple-black. Pale bark, with deep furrows separating narrow, round-tipped, scaley ridges, broken up into small blocks (looks like paint drying). Fruit a spiny ball of capsules. Most common in moist bottomlands and uplands near wetland edges.
Similar Species – *Acer rubrum* has smooth bark, opposite leaves with 3 lobes.

Ludwigia peruviana **Peruvian primrosewillow** **WAP Zone: OD**

Large shrub. Leaves alternate, fuzzy, not toothed. Main veins ladder-like, and bend upward along edge toward leaf tip. Flowers large, yellow, usually 4 petals (occasionally 5). This plant is an invasive introduced species (pest). Found open sunny areas in wetlands with high nutrient loads.

Lycopus rubellus **Taperleaf waterhorehound** **WAP Zone: OD**

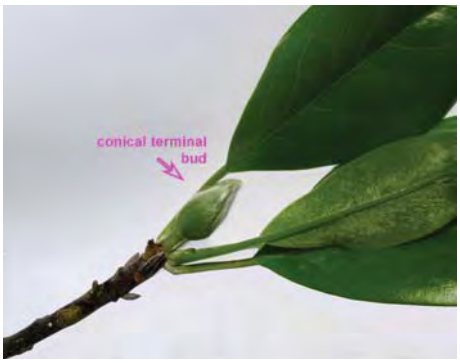
Herb, usually 2 ft or less. Stem square. Leaves opposite, slender, with coarse teeth. White flowers with bilateral symmetry in clusters at leaf axils. Forested wetlands, typically in outer zones or on hummocks.
Similar Species – *Hyptis alata* has shorter, wider leaves (diamond-shaped) with flower clusters on long stalks.

Notes:

Lyonia lucida **Fetterbush** **WAP Zone: T**

Shrub, usually about 4 ft tall but can get much taller in shade or if protected from fire. Leaves evergreen, alternate, thick, margin thickened by presence of vein along the edge of the leaf, other lateral veins not very obvious. Flowers hang downward from nodes (spring-early summer), pink to white, urn-shaped, with united petals; fruit a capsule. Flatwoods, wetland edges. Often occurs on hummocks in the interior of swamps.

Magnolia virginiana **Sweetbay** **WAP Zone: OD**



Tree. Leaves alternate, bright to dark green on surface, white on bottom. Pale whitish smooth bark. Often has root sprouts. Twigs almost black, cone-shaped terminal bud. Flowers creamy-white, large, many (9-12) petals, many yellow stamens and pistles. Fruit a cone-like structure. Swamps, bottomlands. May be on hummocks in deep zone.

Similar Species – *Persea* has dark brown rough bark.
Gordonia has rough bark and serrated leaves that are green on bottom.

Melaleuca quinquenervia **Punktree** **WAP Zone: AD**

Tree, often in dense stands. Leaves alternate with parallel main veins. Bark white and peels. Flowers white in "bottle brush" along branch tips. Branches continue growing and fruits develop in clusters that are on older growth than the most current branch tips; fruits round, woody, with cup-like structure.
Invasive, non-native species from Australia. Low flatwoods and shallow wetlands.

Melothria pendula **Creeping cucumber** **WAP Zone: T**

Vine. Herbaceous; climbs by tendrils or crawls on ground. Leaves alternate, small (2 – 8 cm), round, heart-shaped base, 3-lobed. Flowers yellow. Fruit a mini "cucumber."
Similar Species – *Vitis* spp. are woody vines with larger leaves (5 – 12 cm).

***Mikania* spp.** **Hempvine** **WAP Zone: T**

Vine. Climbs by twining or sprawls on herbs and shrubs. Leaves opposite, heart-shaped with pointed tip. Base of leaves hastate (arrow-shaped, lobes spread at right angles). Main veins originate from base of leaf; coarse teeth. Flowers white, in few-flowered heads arranged into panicles.
Similar Species – *Paederia foetida* has rounded leaf bases, strong, stinky smell.

Myrica cerifera **Wax myrtle** **WAP Zone: AD**

Large shrub. Leaves alternate, narrow, typically a few teeth especially near tip. From a distance, new foliage has orangish cast. Amber-colored dots on leaves. Flowers in small, woody, cone-like clusters (catkins) in leaf axils and directly from stems. Mature into somewhat woody, waxy fruits. May be in unburned flatwoods, low disturbed areas, wetland transition zones. May be on hummocks in deep zones.
Similar Species – *Baccharis* has shorter dark green leaves with coarse teeth.

Nyssa sylvatica var. biflora **Swamp tupelo** **WAP Zone: D**

Tree, often with swollen base when growing in area with seasonal water pool. Leaves variable, longer than wide, may be widest at or above middle, often with dark spots on them. Old leaves turn bright red. Winter buds round at tip and with few scales. Bark tightly furrowed. Flowers inconspicuous. Fruit a blue-black drupe, often in pairs.Cypress swamps, bayheads, bottomlands.

Similar Species – *Fraxinus caroliniana* may have swollen bases, but leaves are compound.
Diospyros virginiana leaves are wider with net patterned veins on bottom.
Quercus laurifolia has leaves generally widest near middle but not reliably so; leaves usually turn brown in late winter; buds with many scales, pointed, often clustered at stem tip; bark of young trees smooth, becoming furrowed with age; fruit an acorn.

Oldenlandia uniflora **Clustered mille graine** **WAP Zone: T**
Hedyotis uniflora **innocence**

Very small annual weakly ascending or sprawling herb. Leaves opposite, pubescent, triangular, sessile. Flowers very small, creamy, 4-parted in clusters at leaf axils.
Open outer edges of wetlands, savannas, hydric flatwoods.

Oplismenus hirtellus **Woodsgrass** **WAP Zone: T**
Oplismenus setarius



Grass, grows flat along ground. Leaf blades are short (3 inches) and broad; surface is usually wavy.
Flower stalks rise up (not flat along ground). Typically found in shade.

Osmunda cinnamomea **cinnamon fern** **WAP Zone: T**


Large fern, grows in clumps. Veins not reticulate, light. Separate fertile fronds, cinnamon colored.
Petiole straw-colored with woolly, reddish-brown hairs when young.
Similar Species – *Woodwardia virginica* does not grow in clumps,
has petioles almost black at base, chain-like veins along midrib.

Paederia foetida **Skunkvine** **WAP Zone: AD**

Vine. Grows by twining. Leaves opposite, long petioles, somewhat heart-shaped base, pubescent, variable. Very strong, stinky smell. Flowers have fused petals, white to cream exterior with a hairy red throat. Invasive non-native from Asia. Found in moist disturbed areas, does not tolerate extended inundation.
Similar Species – *Mikania* has hastate (squarish) leaf bases.

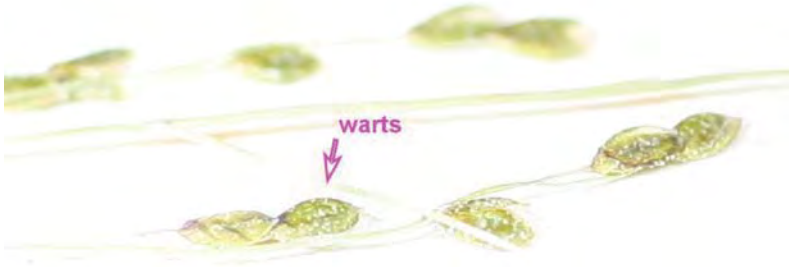
Panicum anceps **Beaked panicum** **WAP Zone: AD**

Grass. Fairly large. Clumps connected by scaly rhizomes. Leaf sheaths are tight. Inflorescence is loose panicle. Spikelets have only short pedicels and lay flat against panicle branches.
Similar Species - *Panicum rigidulum* lacks scaly rhizomes and has denser inflorescence.

Panicum rigidulum **Redtop panicum** **WAP Zone: OD**

Grass. Fairly large; grows in clumps. Not rhizomatous. By contrast, *Panicum anceps* and *Panicum virgatum* have scaly rhizomes and less "heavy" panicles. Leaves hairless, sheaths loose on stem. Often plant has some dark purple coloration. Fruiting inflorescence a loose panicle. Spikelets lay flat against panicle branches. Main branches tend to appear heavy since secondary branches and pedicels are very short.

Panicum verrucosum **Warty panicgrass** **WAP Zone: T**



Grass to about 3 ft. Wiry-stemmed, lightgreen, widely spaced leaves. Stems may fall over and root at nodes. Sheaths loose, ciliate margins. Ligule fimbriate. Leaves flat, up to 8 inches long, margins glabrous. Infloresence an open, diffuse panicle with very fine branches and relatively few spikelets. Spikelets with warts on glumes and lemma. Often forms thick stands in open wetlands that have dried out but still have saturated soil.

Similar Species – *Panicum hemitomon* and *Sacciolepis striata* have narrow congested panicles.

Paspalum conjugatum **Sour paspalum; hilograss** **WAP Zone: AD**

Grass, mat forming to erect, flowering stem up to 2.5 ft tall but usually less than one foot tall. Stem flattened. Nodes pubescent. Sheaths loose, may be ciliate on upper margin. Ligule membranes (1 mm long). Blades short, flat, soft, have a few hairs on surface just above ligule, lime green with sharply pointed tips. Inflorescence 2(3) thin racemes that are antenna-like. Found in shade.
Similar Species – *Axonopus* spp. have blunt leaf tips.

Paspalum laeve **Field paspalum** **WAP Zone: T**

Grass; grows in tufts, flowering stem up to 3.7 ft tall, usually less. Leaves dull green sometimes with purple-red color, stiff, slightly coarse to touch, scattered hairs on the margins and upper surface, base rounded. Ligule membranous and up to 3.8 mm long. Inflorescence with 1 – 6 racemes originating at separate places along stem, ascending rachis narrowly winged.
Similar Species – *Paspalum setaceum* leaves are shiny with evenly spaced hairs on the margins.

Paspalum notatum **Bahiagrass** **WAP Zone: U**

Grass. Sod-forming from underground runners. Leaves dark green, long and slender relative to other common paspalums. Fruit in 2-branched raceme. Moderately invasive, often planted as a pasture grass and on roadsides, introduced from South America.
Similar Species – *Axonopus* spp. have short flat leaves with blunt tips.

Paspalum setaceum **Thin paspalum** **WAP Zone: AD**

Grass, usually grows in a flat, circular tuft. Flowering stem may reach 2.8 ft, usually much shorter. Leaves typically 0.5 inch – 08. inch wide tapering to a pointed tip, evenly spaced hairs on margins; shiny, often with some red along leaf margins. Sheaths loose, sometimes with hairs on margins. Ligule membranes, tiny. Inflorescence with 1 – 6 racemes often partically hidden in leaf sheaths.
Similar Species – *Paspalum leave* leaves are rough to the touch with more hairs on upper surface.

Persea palustris **Swamp bay** **WAP Zone: OD**

Small to medium tree. Evergreen. Bark brown, rough. Leaves alternate, thick. Leaf bottom has fuzzy hairs that stand up (feels fuzzy). *P. borbonia* has flat hairs. Top of leaf is glabrous and green with yellow midrib and pointed tip. Leaves often have insect galls. Found in outer zones of wetlands and low flatwoods where fire has been excluded. Fruit a drupe. Flower inconspicuous. Found in bayheads, shallow zones of swamps, unburned flatwoods edges.
Similar Species – *Quercus virginiana* has rounded leaf tips. *Magnolia virginiana* has whitish smooth bark.

Phyla nodiflora **Turkey tangle frogfruit** **WAP Zone: AD**
Lippia nodiflora

Herb. Prostrate stems (usually purple in color) rooting at nodes. Leaves opposite, margins coarsely toothed on upper half. Often diamond-shaped with red edge. Angular stem. Flowers white, in small heads with bracts. Much purple on the head (individual flowers white).

Phytolacca americana **American pokeweed** **WAP Zone: U**

Large, coarse herb to 3 m tall. Stems typically red (unless in dense shade). Leaves large (7 – 30 cm), alternate, veins ladder-like, somewhat arcuate (curved). Flowers in axillary racemes, white, 5-petalled. Fruits a blue-black berry. Young leaves are considered to be edible, but foliage becomes poisonous as it matures.

Pinus clausa **Sand pine** **WAP Zone: U**

Medium tree. Evergreen. Fine short needles (4 – 8 cm), 2 per fascicle, often twisted; cones are small and stay on tree (usually closed) for years (most open naturally after fine). Naturally found in dry uplands; known to colonize dry, sandy transitional wetland edges.

Pinus elliottii **Slash pine** **WAP Zone: AD**

Large tree. Evergreen. Needles 2 or 3 per fascicle; long (10 – 28 cm). Young shoots (candles) beige and small. Cones somewhat egg-shaped, prickly, open and full from tree when mature. Young trees branch near the ground; lack grass stage. Found in low flatwoods and outer edge of wetlands. May be on hummocks in deep zones.
Similar Species – *Pinus palustris* needles always 3 per fascicle, needles tufted at tips of branches.

Pinus palustris **Longleaf pine** **WAP Zone: U**

Large tree. Evergreen. Needles always 3 per fascicle; long (15 – 30 cm). Young shoots (candles) large (fat) and white at least near tip; cones large and long, prickly; open and fall from tree when mature. Young trees have grass stage and then shoot up rapidly without branching until above height of ground fires. Found in flatwoods and sandhill.
Similar Species – *Pinus elliottii* needles at least some have 2 needles per fascicle, needles not clustered at tips of branches.

Pluchea rosea **Rosy camphorweed** **WAP Zone: OD**

Herb typically to 2 ft. Alternate leaves, clasping leaf base, serrate, often pink on edge, covered with sparse to dense sticky hairs, strong camphor smell. Flowers pink.

Similar Species - *Pluchea foetida* also has aromatic, pubescent foliage.. Leaves are alternate, sessile (no petole), clasping, *rough pubescent*. Flowers in rounded cymes, *white*.

Notes:

Polygonum hydropiperoides **Swamp smartweed** **WAP Zone: OD**

Sprawling herb. Leaves alternate, long and narrow. Leaf stipules are modified into a tube that surrounds the stem ("ocreae"). Petioles short. Leaves narrow. Flowers in long axillary racemes, pink to greenish-white.
Similar Species – *P. punctatum* has white flowers (never pink) covered with raised dots.

Psidium cattleianum **Strawberry guava** **WAP Zone: AD**

Large shrub. Opposite leaves, thick with obvious main vein. Petiole short with scurfy pubescence.
Invasive exotic introduced from Brazil.
Similar Species - *Lyonia lucida* has alternate leaves and a thickened leaf edge.

Ptilimnium capillaceum **Mock bishopsweed** **WAP Zone: T**



Herb typically to 2 ft. Common on moist ground in spring. Leaves finely dissected with many secondary branches, especially at base. Flowers in a delicate umbel, white. Carrot-like (don't eat it!).
Similar Species – young *Eupatorium leptophyllum* has fewer secondary branches on leaves.

Quercus laurifolia **Laurel oak** **WAP Zone: T**

Tree, often large with straight trunk, branches typically well above the ground. Leaves alternate, at least some widest in middle forming a narrow diamond, bottom green, flat with few hairs. Buds pointed, many scales. Bark smooth when young becoming furrowed in old age with broad flat ridges. Acorns take 2 years to mature. Swamp edges, low flatwoods with fire exclusion, floodplains, bottomlands.
Similar Species – *Q. virginiana* has trunk and large branches that often lean, dark brown rough bark with raised ridges, darker green leaves that are gray-green pubescent on bottom.
Nyssa sylvatica var. *biflora*: Bud rounded at tip, few scales; leaves wider toward tip (usually wider than *Q. laufifolia* in general), often turn bright red before dropping, deeply furrowed bark;

Quercus nigra **Water oak** **WAP Zone: T**

Tree. Leaves alternate, variable, wider toward the tip, often spoon-shaped; lower surface green. Buds pointed. Fruit an acorn that takes 2 years to mature. Acorn cap a small "tam." Bark smooth, gray on young trees becoming somewhat rougher as tree ages.

Quercus virginiana **Live oak** **WAP Zone: U**

Tree. Often branches close to ground, trunk and branches often lean. Leaves dark green, thick, usually with round tips, often somewhat rolled under on edges, veins often appear sunken below leaf surface; bottom green-gray and pubescent in drier habitats. Buds rounded. Acorns mature in one season.
Similar Species - *Q. geminata* has leaf bottom with dense pubescence hairs that usually project upward from surface, leaves curl more. *Q. laurifolia* has straight trunk, smoother bark, uncurled leaves with few hairs.

Rubus argutus
Rubus betulifolium

Sawtooth blackberry

WAP Zone: AD

Sprawling, arching shrub. Stems prickly ridged. Leaves alternate, trifoliate (3 leaflets) or palmate (5 leaflets), veins sunken pinnate, edges serrate, often has pricks on veins on underside of leaf. Flower white, 5 petals, many stamens, many stigmas. Fruit a berry "blackberry." Usually in disturbed situations. One of a limited number of species that thrives on dry muck soils.

Saccharum giganteum
Erianthus giganteus

Sugarcane plumegrass

WAP Zone: OD

Tall (greater than 6 ft) grass. Grows in dense tufts. Stem pubescent below panicle, nodes bearded, otherwise glabrous (hairless). Leaves long and wide. Leaves and sheathes variably pubescent. Few leaves on flowering stems. Inflorescence a panicle with ascending "wooly" branches. Marshes, ditches, wetland edges, moist disturbed areas.
Similar Species – *Phragmites australis* does not grow in tufts, many leaves on flowering stems.

Salix caroliniana **Carolina willow** **WAP Zone: OD**





Small multi-trunked tree with deeply furrowed bark. Leaves alternate, linear, finely toothed, old leaves much longer than wide, lighter on lower surface. Blooms and fruits in January and February. Two sexes. Fruit is seed with tuft of white hairs. Typically in marshes and shrub swamps.

Sambucus nigra **subsp.** ***canadensis***
Sambucus canadensis

Elderberry **WAP Zone: AD**




Large shrub. Stems with warty lenticels. Opposite, pinnately compound leaves, leaflets serrated. Deciduous. Flowers white with 5 petals in showy clusters, fruits dark purple. Typically in disturbed, moist situations.

Sapium sebiferum **Chinese tallowtree** **WAP Zone: AD**

Tree. Leaves alternate, long petioles, tend to droop, not toothed. Very strong central vein, short broad leaves with wide rounded bases, tips abruptly pinched and drawn out toward a point. Old leaves turn bright yellow-orange-red in fall or when stressed by high water. Flowers in spikes, not showy but in "candles."
Non-native, highly invasive. Wetland edges, disturbed uplands.
Similar Species – *Cinnamomum camphorum* has longer narrower leaves, strong camphor smell.

Schinus terebinthifolius **Brazilian pepper** **WAP Zone: AD**

Large bushy shrub to small multi-trunked tree with long arching branches covered with leaves. Leaves alternate, pinnately compound, finely toothed. Petioles and rachis (leaf stem) may be reddish. Fruits smooth, red in fall and winter. Highly invasive; introduced from South America. Some people have allergies to this plant (in same family as poison ivy, but not of concern to most people).
Similar Species – *Rhus copallina* has erect thin trunks with leaves concentrated at tips of branches, wings along rachis of compound leaves.

Scoparia dulcis **Sweetbroom** **WAP Zone: AD**

Small upright herb. Square stem, opposite leaves, narrow, serrated on upper half, lightish, sometimes slightly yellow-green cast. Flowers white, 4 petals, many stamens, single central pistal. Fruits are round, on stalks in leaf axils. Capsules present most of the growing season.

Setaria parviflora **Yellow bristlegrass** **WAP Zone: AD**
Setaria geniculata

Grass. Slender perennial, knotty rhizomes. Grows in loose spreading clumps. Stems usually narrower below than above. Wirey. Leaves narrow, ascending. Inflorescence bottle-brush like. 4-8 bristles below each spikelet form the bottle-brush. Ruderal, low flatwoods, ditches, wetland transition zones.

Smilax bona-nox **Saw greenbrier** **WAP Zone: AD**

Vine that climbs with tendrils, numerous prickles on stem. Leaves often shiny but blotched (variegated), distinctive ears (big lobes) at leaf base, veins visible with main veins arising from base of blade, at least some leaves have prickles on leaf margin and underside of leaf on veins.
Similar Species – other *Smilax* don't have prickles on leaf margin or varigation.

Solanum viarum **Tropical soda apple** **WAP Zone: U**

Herb. Prickly stems. Leaves ovate, large, alternate, with coarse teeth, prickly both top and bottom, pubescent. Flower white, hangs downward. Fruit a yellow berry (looks like a miniature green or yellow tomato). NOT EDIBLE. Non-native, invasive. Disturbed areas, pastures.

Stenotaphrum secundatum **St. Augustinegrass** **WAP Zone: AD**

Grass. Sod-forming with above-ground runners. Dark green leaves typically short with blunt tip. Leaves are open but V-shaped in cross section. Origin uncertain, generally considered to be native, but status is unclear.

Stillingia aquatica **Corkwood** **WAP Zone: D**



Small few-stemmed (often 1-stemmed) shrub up to 1.5 m tall, often having leaves only near the top. Leaves alternate, long relative to width with fine teeth. Sparse on lower stems, denser near top of plant. Stem often reddish. Flowers in spike at branch tip, lowest mature first, greenish. Fruit round and distinctly 3-lobed. In open areas, typically in standing water.
Similar Species - *S. sylvatica* is shorter (0.25 to 1.2 m tall), less woody and usually multistemmed, and found in upland habitats.

Symphyotrichum elliottii **Elliott's aster** **WAP Zone: T**
Aster elliottii

Herb to 8 ft tall (usually 4-6 ft). Stem leafy. Leaves fairly large with long petiole, obovate (widest toward tip of leaf), scabrous (rough) on top, smooth below, shallowly toothed. Leaf base wraps around stem but not auriculate (no ears). Flowers in heads; ray flowers lavender to pink, disk (center) flowers yellow turning red to purple when older. Subtending phyllaries (bracts below the flowers and forming the "cup" below the flower) are narrow, long, and loose.

Taxodium **spp.** **Cypress** **WAP Zone: D**

Trees. Leaves deciduous (branchlets deciduous), needle-like. Fruit a round, closed cone. *T. ascendens* often has needles appressed to twigs. *T. distichum* leaves are spreading, tree is more branchy. *T. ascendens* is typical in cypress domes, *T. distichum* is more typical in large swamps and riverine systems, typically areas more sheltered from fire.

Toxicodendron radicans **Eastern poison ivy** **WAP Zone: AD**

Vine that climbs by roots but may grow upward from the ground. Alternate, compound leaves with three leaflets and reddish petioles; very variable but usually with coarse teeth. Fruit a white drupe present in fall and winter.
Similar Species – *Parthenocissus quinquifolia* has five leaflets and climbs by tendrils with "feet" (adhesive swollen pads on ends of tendrils).

Ulmus americana **American elm** **WAP Zone: T**

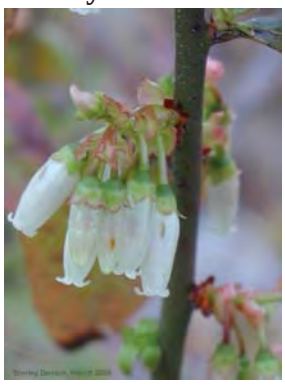
Tree. Leaves alternate, two-ranked. Bases typically unequal (look slanted); veins ladder-like, end in teeth; sometimes rough. Bark in flat plates. Fruit (winter) a samara with fringe of hairs on edge of wing.
Similar Species - *Carpinus caroliniana* has equal leaf bases, smooth bark over wood with "ripples" that look like muscles.

Urena lobata **Caesarweed** **WAP Zone: U**



Annual to 3 m tall. Leaves alternate, round but slightly 3-lobed, hairy. Flower pink, stamens combined to form a tube (small hibiscus-like flower). Fruit a bur. Introduced and moderately invasive.

Vaccinium corymbosum **Highbush blueberry** **WAP Zone: T**

Large shrub. Green or red twigs. Leaves deciduous, alternate, typically more than 3 cm long. Flowers urn-shaped, white. Fruit a blue berry. Edible. Often in seepage areas of low flatwoods, wetland transition zones. May be on hummocks in deeper zones.
Similar Species – *V. arboretum* has smaller leaves (1.5 to 4 cm), blunter leaf tips, and reddish, scaley, flaking bark.

Vaccinium myrsinites/darrowii **Shiny blueberry** **WAP Zone: U**

Small shrubs usually less than 3 ft tall. Green twigs. Alternate small (typically less than 1.5 cm long) leaves. Evergreen. *V. myrsinites* leaves are shiny, may be red in spring and winter; have tiny glands (black dots) on lower surface. *V. darrowii* leaves typically less shiny than *V. myrsinites*. Young *V. darrowii* leaves are glaucous and more bluish to pinkish in color, lacking glands on lower surface.
Flowers urn-shaped. Fruits are edible berries.

Vitis rotundifolia **Muscadine grape** **WAP Zone: AD**
Vitis munsoniana

Vine climbing by tendrils. Leaves opposite tendrils; glabrous (not hairy), heart-shaped, coarsely toothed.
Similar Species - Other *Vitis* have hairs on lower leaf surface, branched tendrils;
pith not continuous at nodes, shaggy bark.
