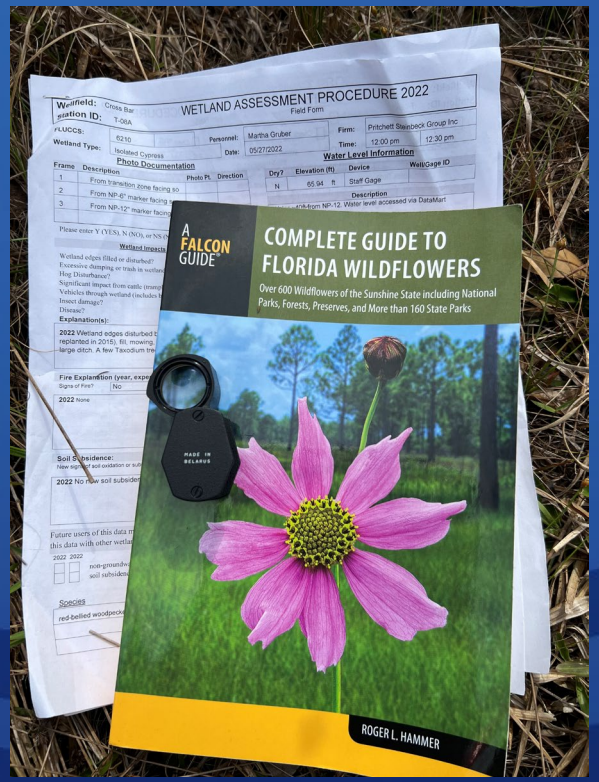
2024 WAP Training
Plant ID 101

Prepared by:
Francisco Faria
Staff Environmental Scientist



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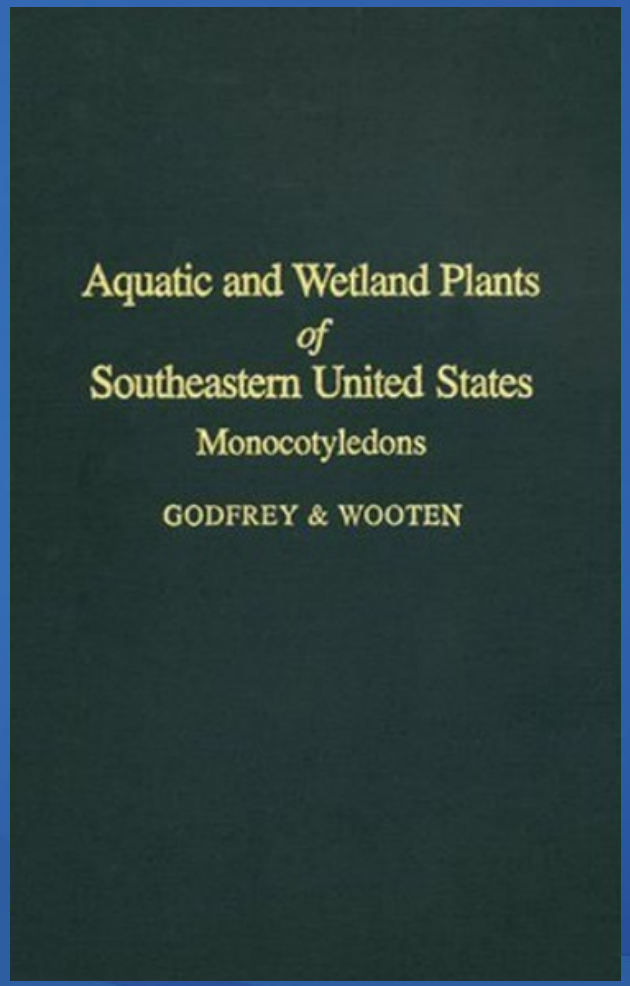
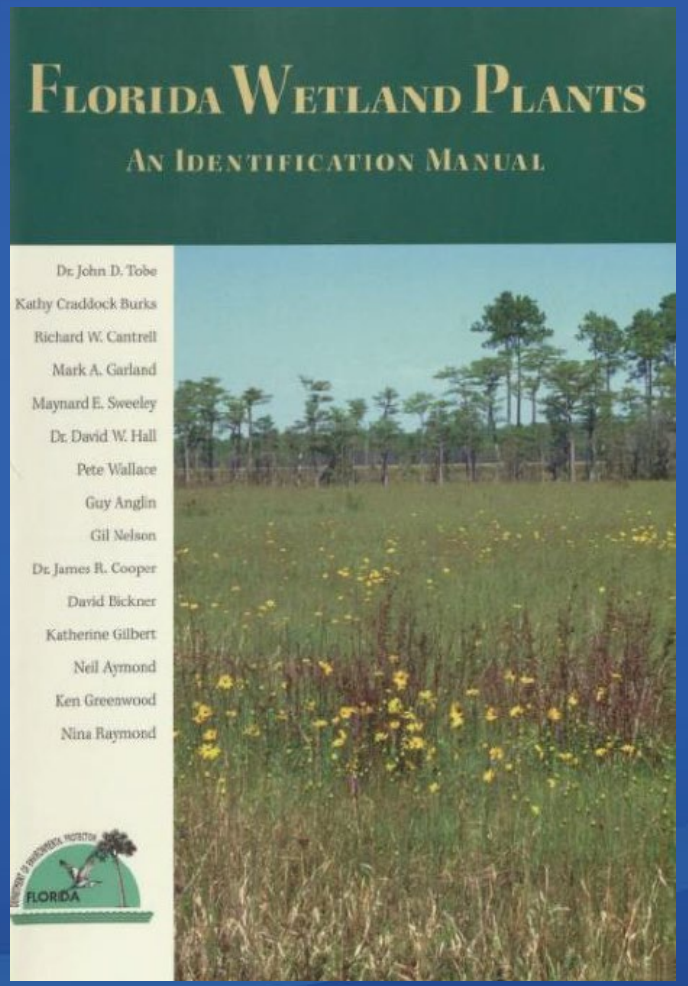
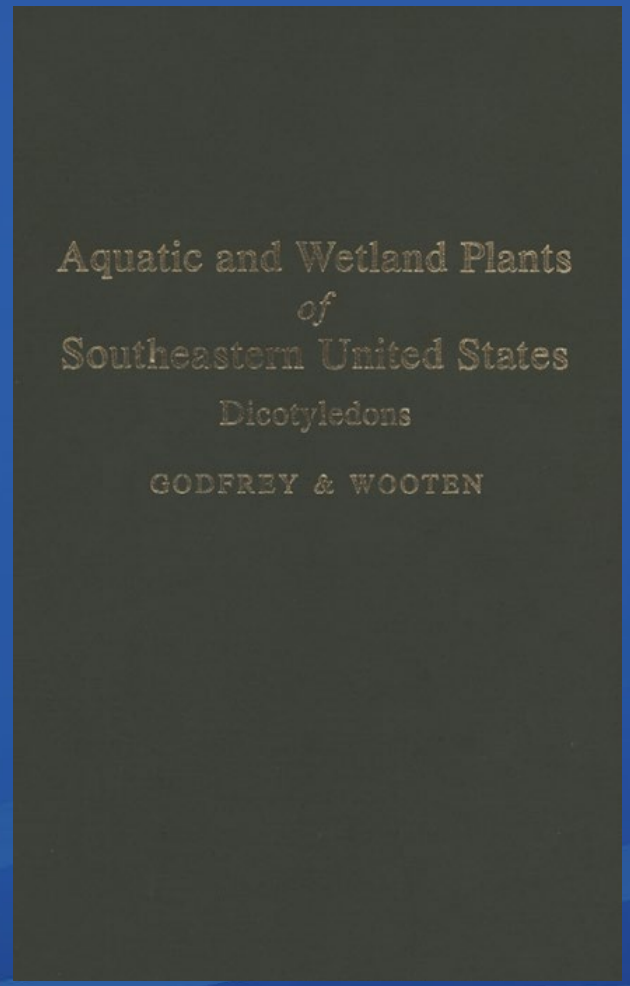
- *Panicum verrucosum → Kellochloa verrucosa*
- *Pluchea rosea → Pluchea Baccharis*
- *Polygonum hydropiperoides → Persicaria hydropiperoides*
- *Rubus argutus → Rubus pensilvanicus*
- *Sapium sebiferum → Triadica sebifera*
- *Ampelopsis arborea → Nekemias arborea*
- *Conyza canadensis var. pussilla → Erigeron canadens L.*
- *Myrica cerifera → Morella cerifera*
- *Panicum anceps → Coleataenia anceps*
- *Panicum rigidulum → Coleataenia rigidula*
- *Oldenlandia uniflora → Edrastima uniflora*

Recommended Resources

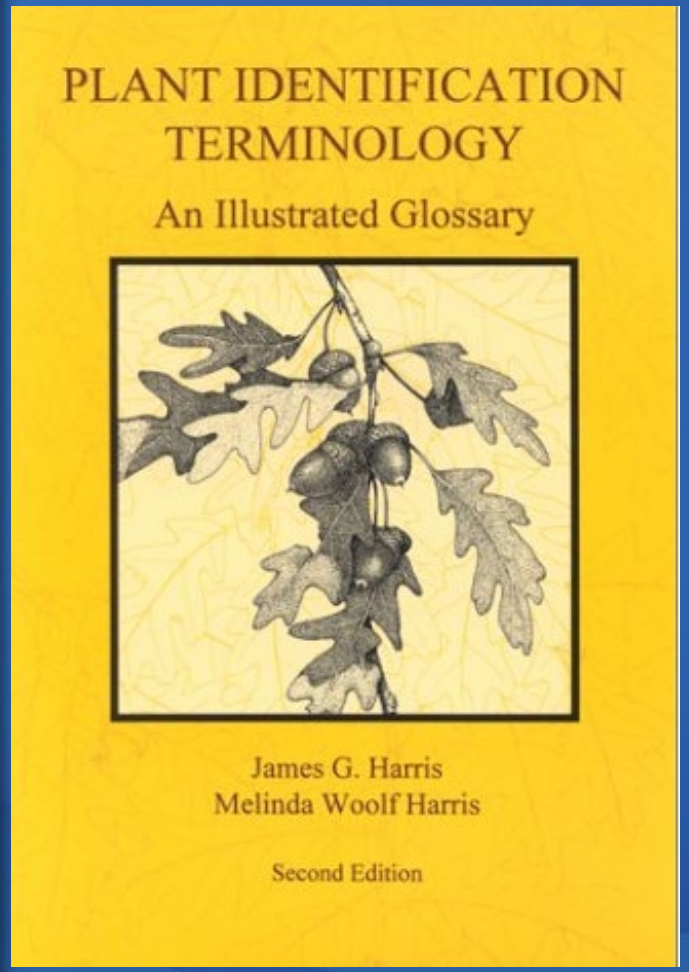


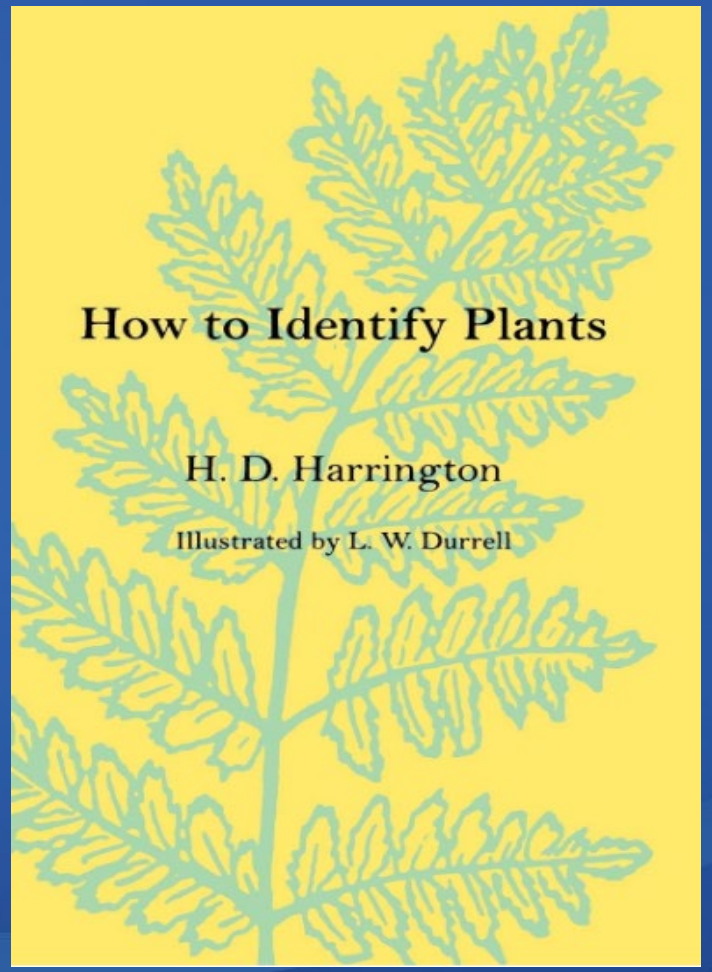


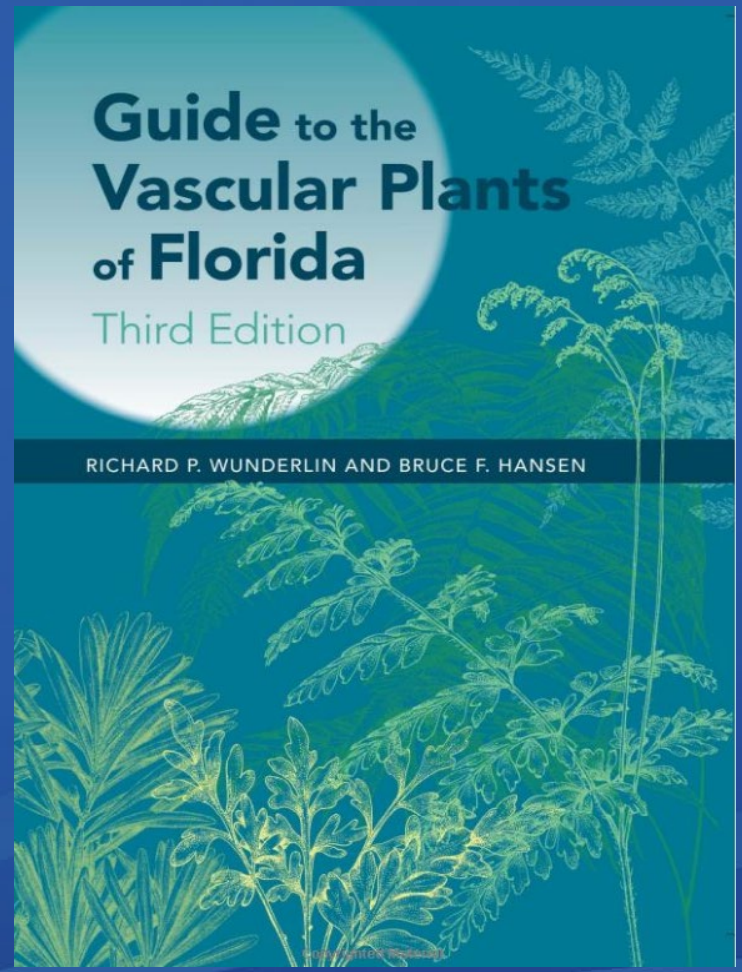


https://archive.org/details/floridawetlandplants

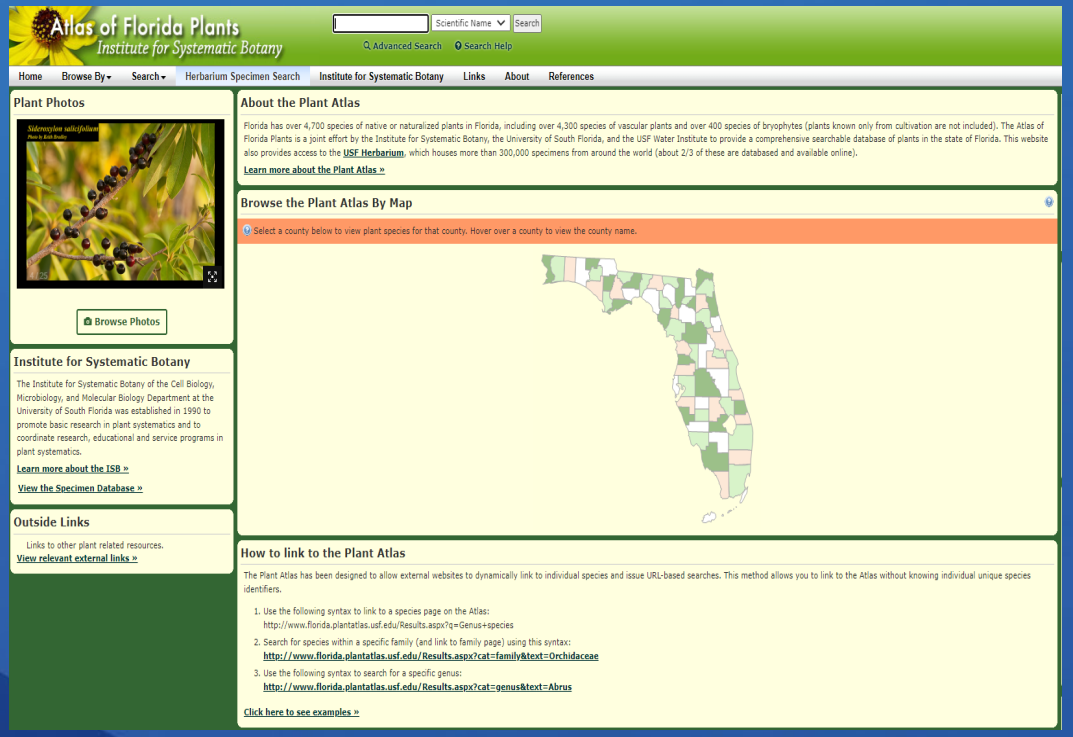
Additional Resources







Online Resources



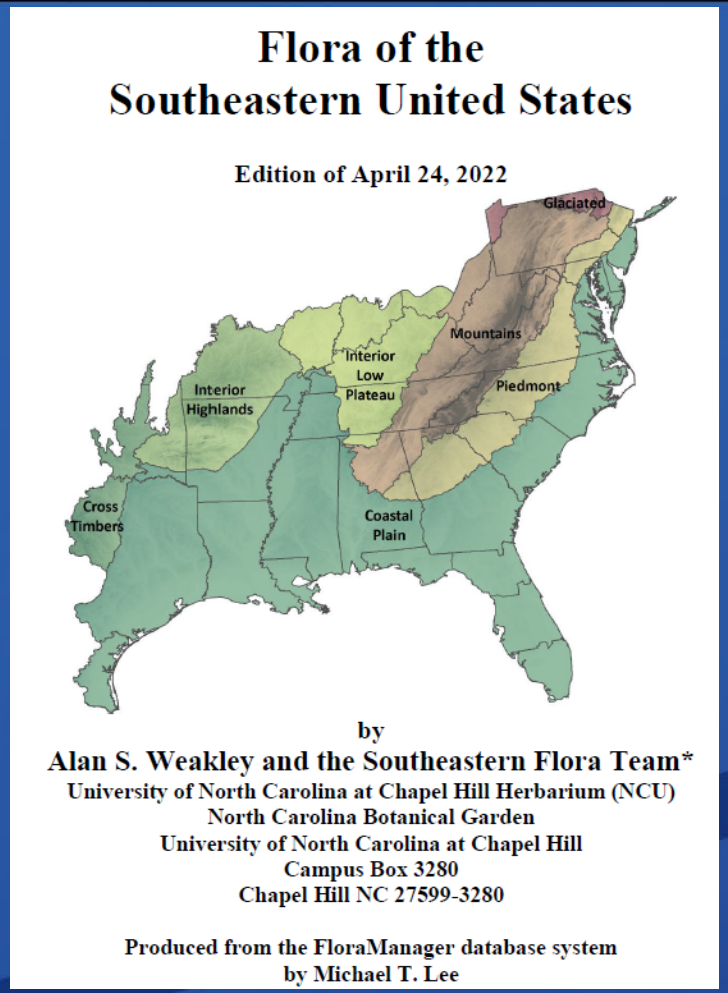
https://florida.plantatlas.usf.edu/

https://www.inaturalist.org/

iNaturalist

CALIFORNIA ACADEMY OF SCIENCES

NATIONAL GEOGRAPHIC



https://ncbg.unc.edu/research/unc-herbarium/flora-request/

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	Monocot	vs	Dicot
Seed	 1 cotyledon		 2 cotyledons
Root	 Fibrous roots		 Tap roots
Flower	 Have petals in multiples of 3		 Have 4 or 5 petals
Leaf	 Narrow, parallel veins		 Oval or palmate, net-like veins
Vascular Bundles	 Scattered		 Ringed
Pollen Grains	 Have 1 pore or furrow		 Have 3 pores or furrows

ScienceFacts.net

Monocot vs. Dicot Breakdown

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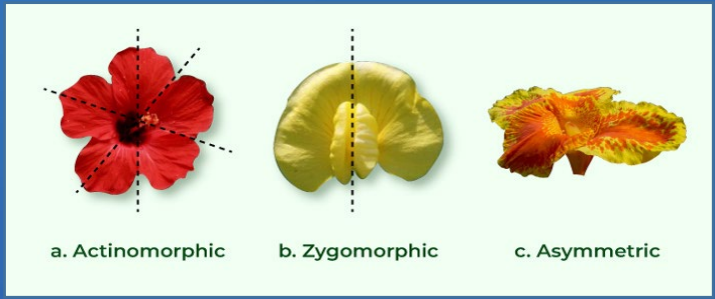
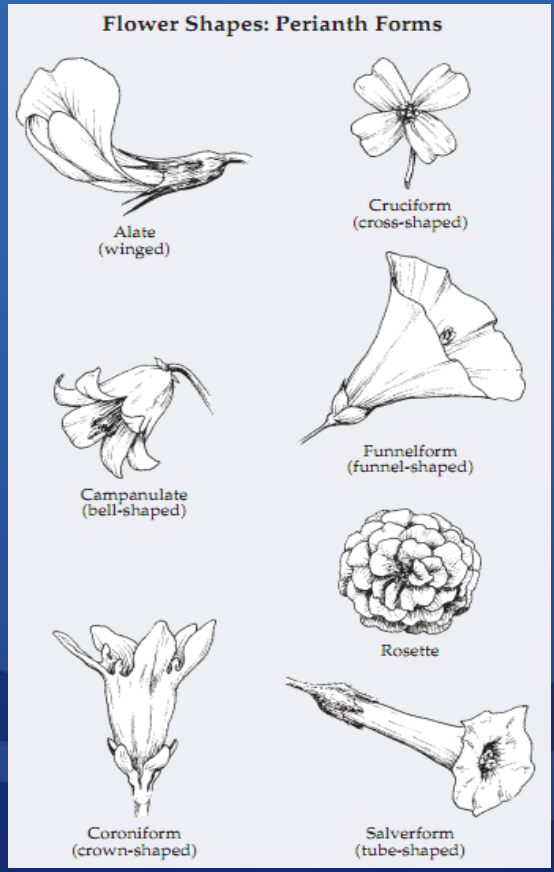
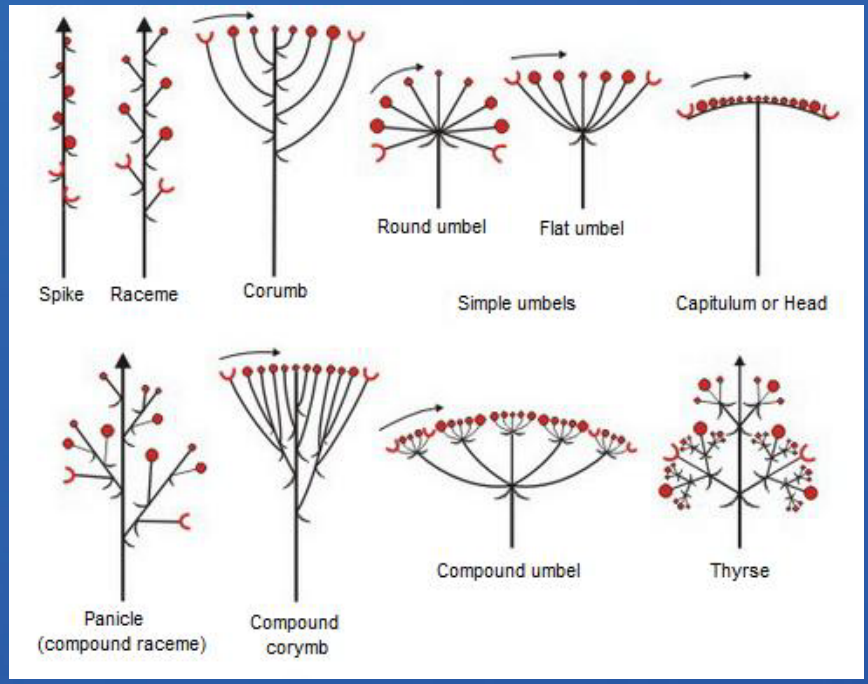
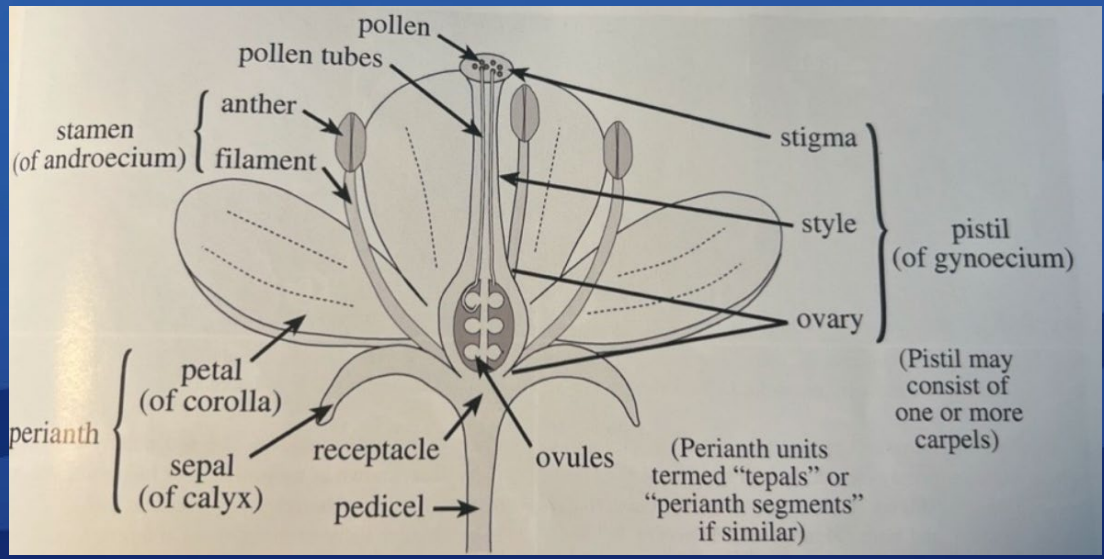
Flower Terminology/Growth Descriptions

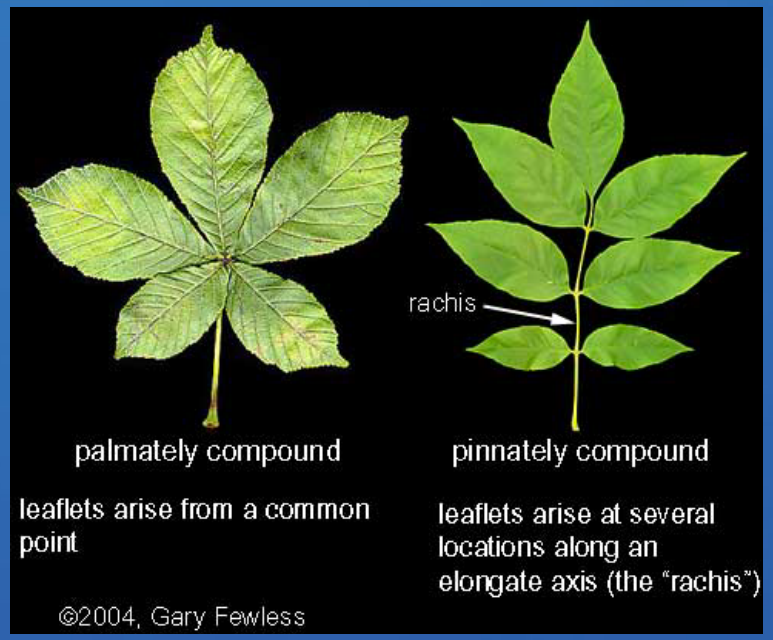


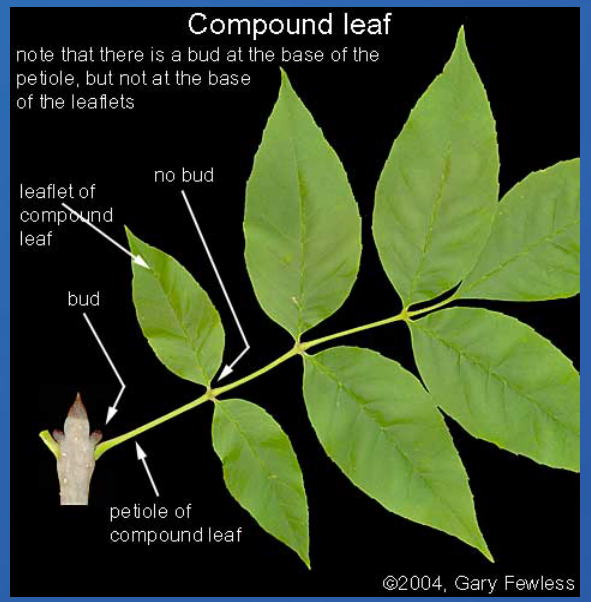


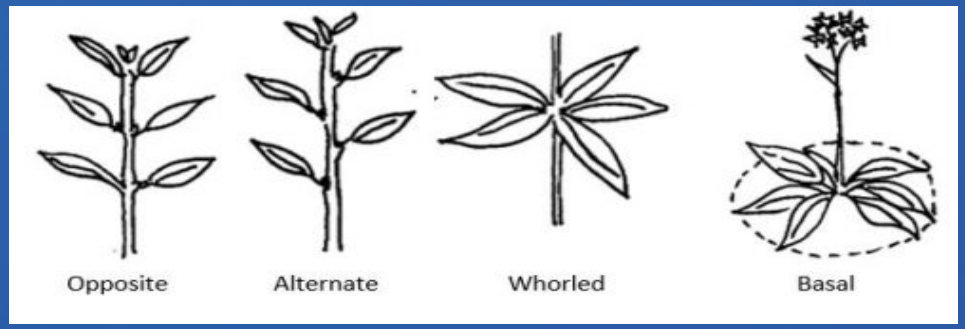


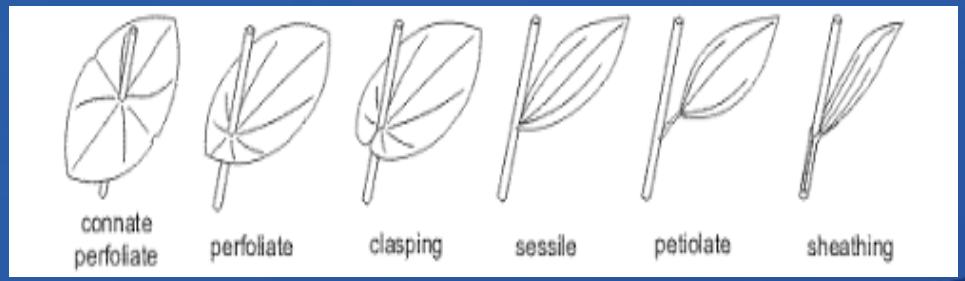


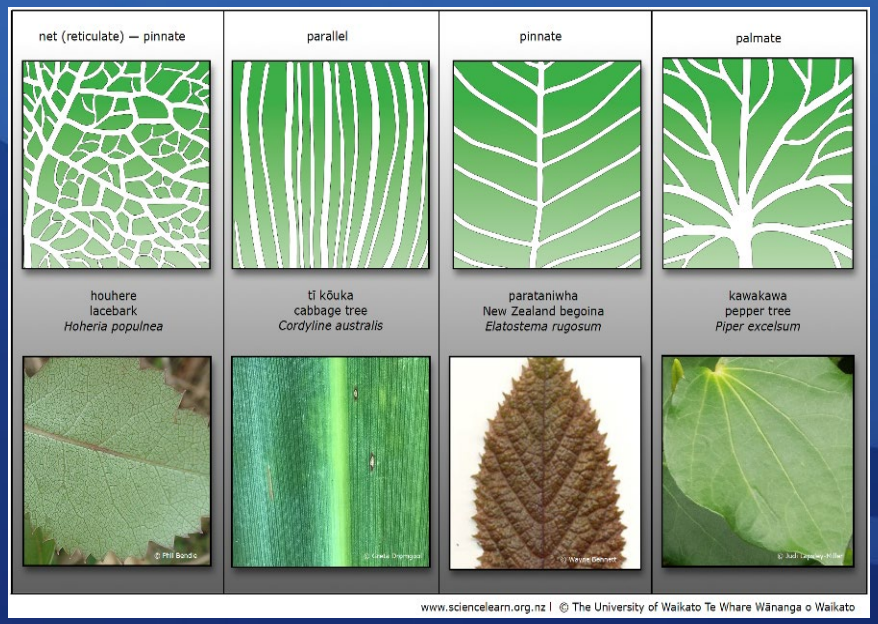
Leaf Description

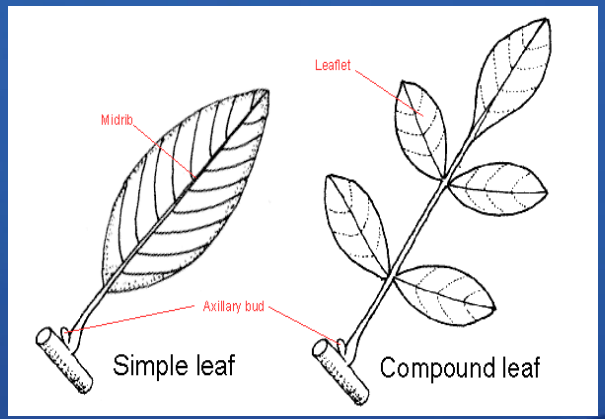


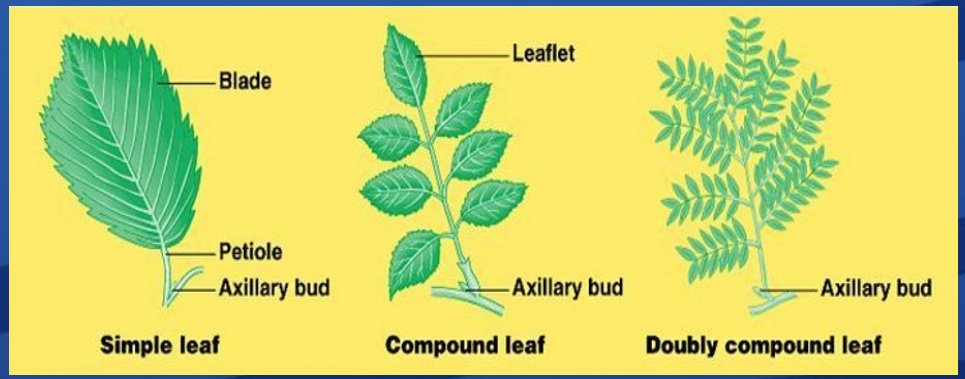




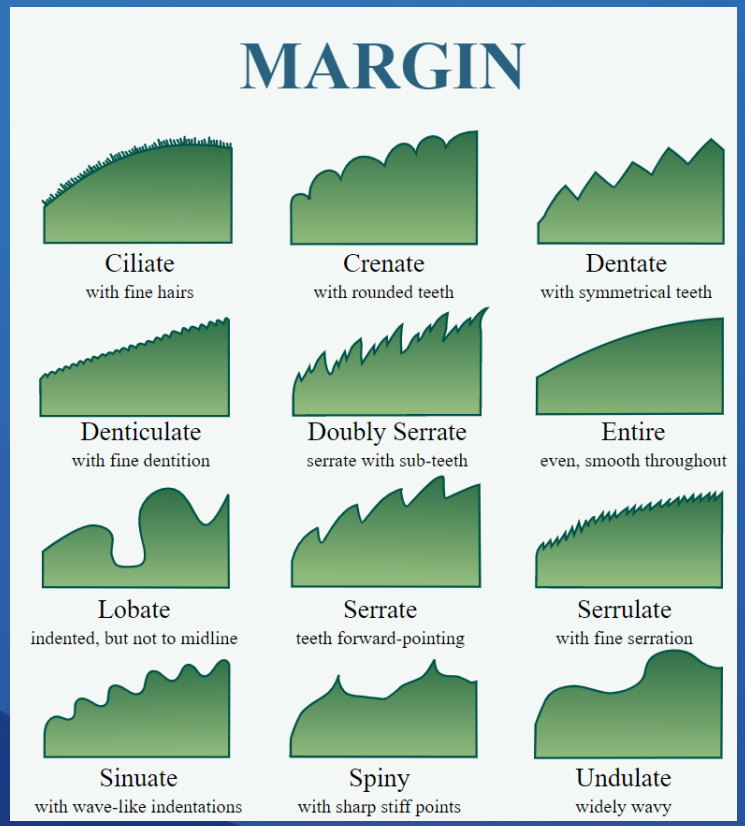


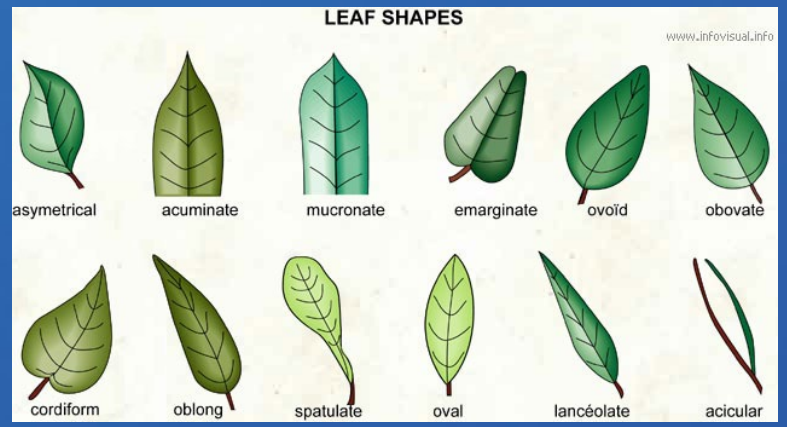


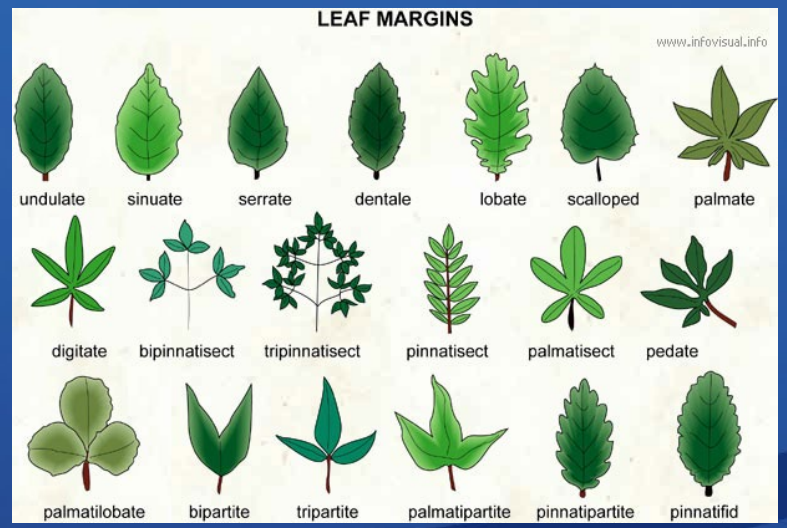


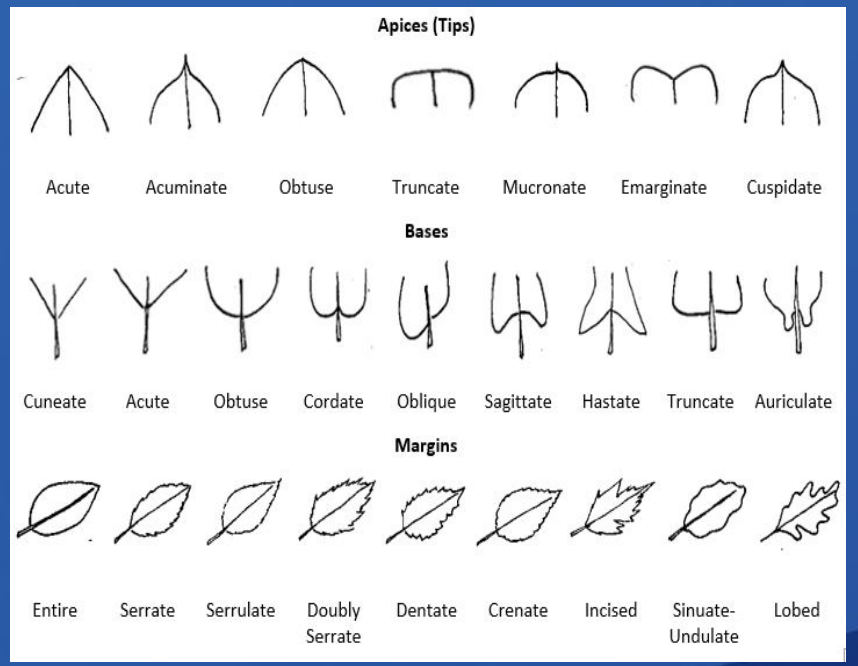


Leaf Description Continued









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- Important to identify EVERYTHING along transect
- **EXTRA** important to properly identify WAP species as accurately as possible
- Mistakes impact scoring
- Mistakes over a span of years inaccurately portray system being assessed **DATA CREDIBILITY**

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.

WAP Plants	U = 16
	AD = 36
	T = 32
	OD = 22
111	D = 5

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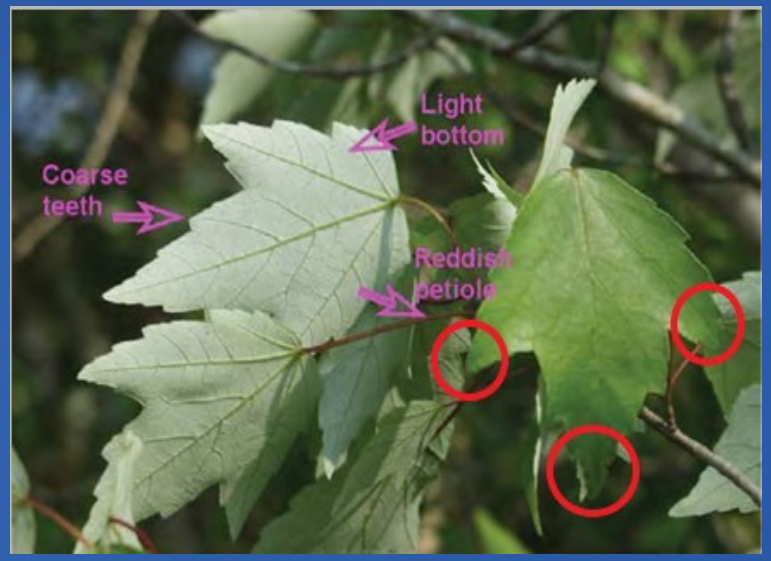
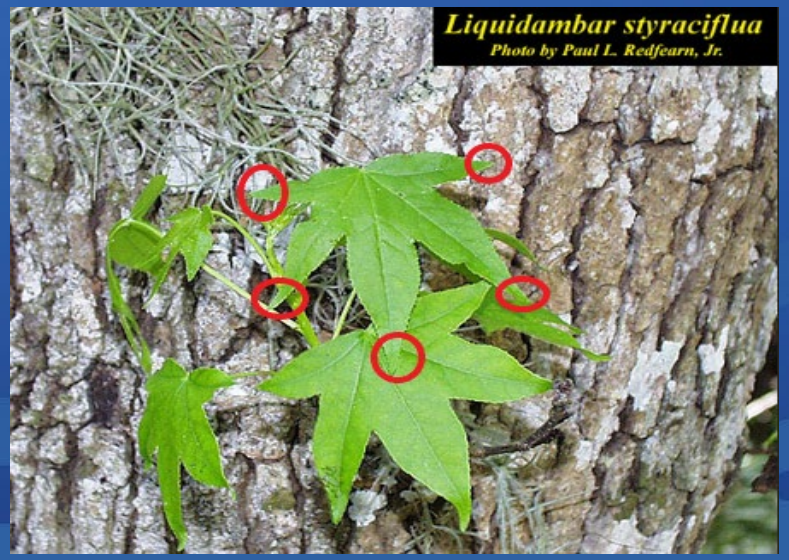
Acer rubrum (OD) vs. *Liquidambar styraciflua* (T)





Acer rubrum

- 3 leaf lobes
- Leaves opposite
- Winged seeds (samaras)

helicopters

Liquidambar styraciflua

- 5 leaf lobes
- Leaves alternate
- Seeds are spiny & "woody"

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Ampelopsis arborea (AD) vs. *Campsis radicans* (T)

Ampelopsis arborea

- Doubly compound leaves, widest at base
  - Red petioles
- Leaves alternate but opposite on tendrils
  - Flowers small, greenish-white

Campsis radicans

- Singly compound leaves
- Green petioles
- Leaves opposite, NO tendrils
- Trumpet-shaped, red-orange flower

Amphicarpum muehlenbergianum (OD) vs. *Panicum hemitomon*

Amphicarpum muehlenbergianum

- White hyaline margin along leaf edge
- Leaves bluish-green. Blades up to 4”
- Old leaves curl
- Stems up to 3’ long (decumbent)

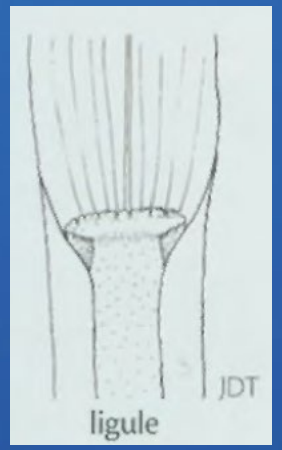
Panicum hemitomon

- White hyaline margin NOT present
- Bright green leaves. Blades up to 12”
- Old leaves straight
- Stems up to 6’ long

Andropogon glomeratus (T) vs. *Andropogon virginicus* (AD)

Andropogon glomeratus

- Leaves will fold but not far up the stalk
- Leaves are medium in size, green, & often blotched with red spots
- Greater inflorescence branching
- Longer ligules



Andropogon virginicus

- Leaves tend to stay folded further up stalk
- Blades shorter than *A.glomeratus*, more bluish in color, more hairy
- Less inflorescence branching (not as bushy)
- Shorter ligules

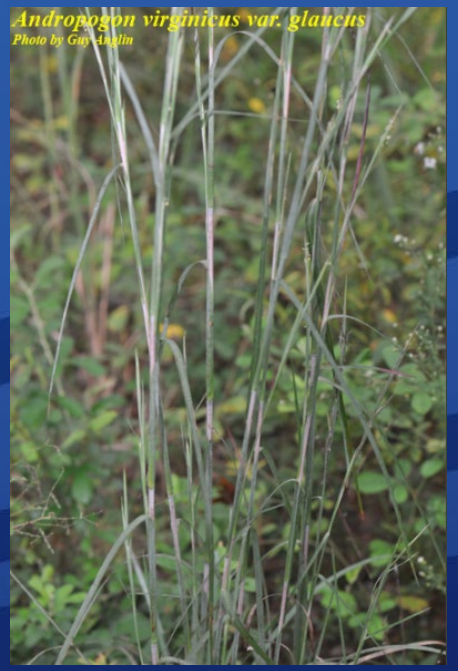
***Andropogon glomeratus var. glaucopsis* (OD) vs. *Andropogon virginicus var. glaucus* (U)**

Andropogon glomeratus var. glaucopsis

- Longer leaves
- Bushier than *A.virginicus*
- Purple color at base and whitish chalkiness

Andropogon virginicus var. glaucus

- Blue-white chalky character typically in dry uplands
- Leaves shorter than 35 cm
- NOT purple-colored at base



***Baccharis spp.* (AD) vs. *Ilex glabra* (AD)**

Baccharis spp.

- Leaves with shallow lobes or coarse teeth
- Fruit heads appear feathery or cottony

Ilex glabra

- Leaves have a few blunt teeth near the tip
- Fruits a black drupe (NOT edible)

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Bacopa caroliniana* (OD) vs. *Bacopa monnieri

Bacopa caroliniana

- Lemon scent when crushed
- Leaves clasping
- Stems hairy
- Flowers purple

Bacopa monnieri

- NO lemon scent
- Leaves NOT clasping
- Stems NOT hairy
- Pinkish-white flowers

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Callicarpa americana (U) vs. *Cephalanthus occidentalis* (D)

Callicarpa americana

- Leaves opposite with stiff hairs, crenate-serrate
- Fruit is 4-stoned, small globose (round) berry-like drupe
- Flowers pale lavender-pink. Produced on new growth in leaf axils (no stalk) densely clustered.

Cephalanthus occidentalis

- Leaves opposite to whorled (3), glabrous (no hairs), NO teeth
- Fruit a dense ball (“buttons”)
- White flowers in a dense round head

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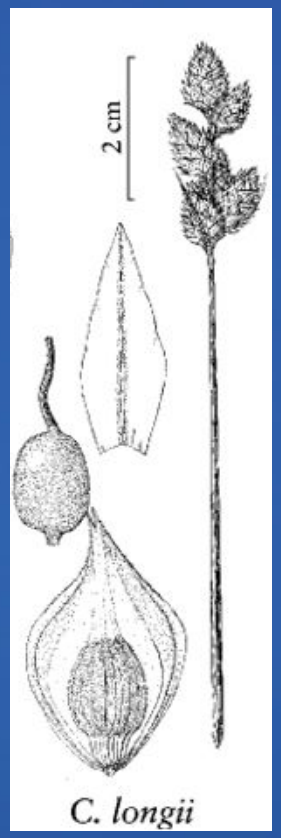
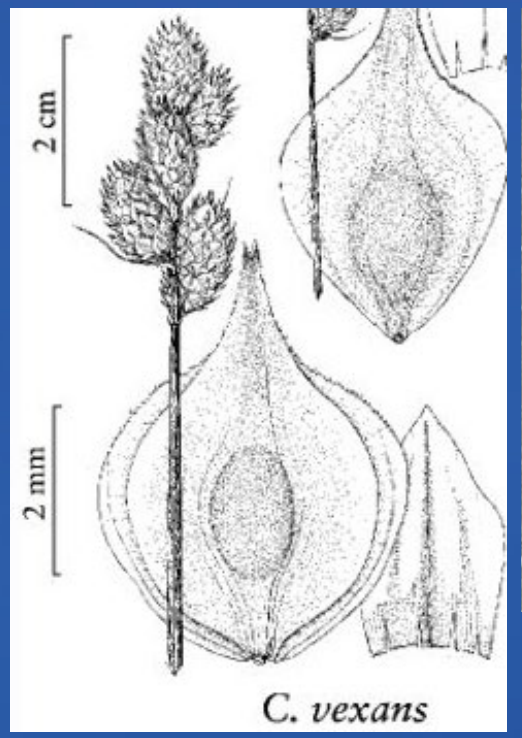
Carex longii (T) vs. *Carex vexans*

Carex longii

- Spike scales notably more appressed = narrower inflorescence
- Perigynium smaller with "wings" less prominent





Carex vexans

- Spike scales less appressed and therefore more spread = notably wider inflorescence
- Larger perigynium with more prominent "wings"

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Centella asiatica (T) vs. *Dichondra carolinensis* (AD)

Centella asiatica

- Leaves larger, shaped like a rounded arrowhead
- Margins slightly dentate (coarse teeth)

Dichondra carolinensis

- Low/creeping
- Leaves reniform or shaped like a horse hoof
- Base deeply cordate (heart shaped)

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Cinnamomum camphora (U) vs. *Persea palustris* (OD)

Cinnamomum camphora

- Leaf underside glaucous
- Three veins on leaf base
- Crushed leaves camphor smell

Persea palustris

- Leaf underside pubescent
- One vein on leaf base
- Crushed leaves bay smell
- Insect galls common on older leaves

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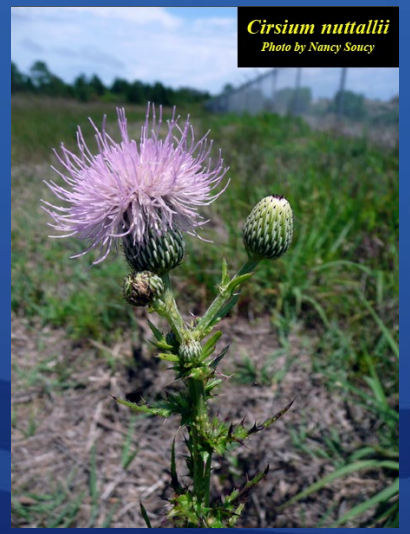
Cirsium nuttallii (T) vs. *Cirsium horridulum*

Cirsium nuttallii

- Typically unbranched from a basal rosette
- Lower stem conspicuously winged



Cirsium horridulum

- MORE spines, especially on the phyllaries below flowers
- Outer whorl of spiny bracts that hide the true involucre

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Commelina diffusa* (T) vs. *Commelina erecta

Commelina diffusa

- Low growing typically creeping habit
- ALL petals blue
- Leaves tend to be wider

Commelina erecta

- Erect perennial habit
- Petals (2 blue & 1 white)
- Narrow lanceolate leaves

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Diodia virginiana (OD) vs. *Gratiola ramosa* (T)

Diodia virginiana

- Teeth absent from leaves
- Flowers white, NOT tubular

Gratiola ramosa

- Leaves stiffly upward pointing with a few teeth
- Flower white and tubular

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Diospyros virginiana (AD) vs. *Nyssa sylvatica var. biflora* (D)

Diospyros virginiana

- Leaves often hairy when young, shiny and glabrous (not hairy) when older
- Leaves widest at middle
- Net patterned veins on leaf underside

Nyssa sylvatica var. biflora

- Often swollen at trunk base
- Leaves variable, longer than wide, may be widest at or above middle
- Lack net pattern veins on leaf bottom

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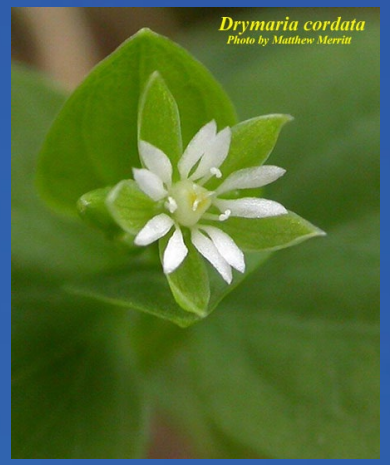
Drymaria cordata (AD) vs. *Lindernia grandiflora* (T)



Drymaria cordata

- Stems stiff
- Flowers small, white, sticky (will stick to shoes/pets/socks)

Lindernia grandiflora

- Stems weak
- Flowers light lavender spotted with violet, bilateral symmetry

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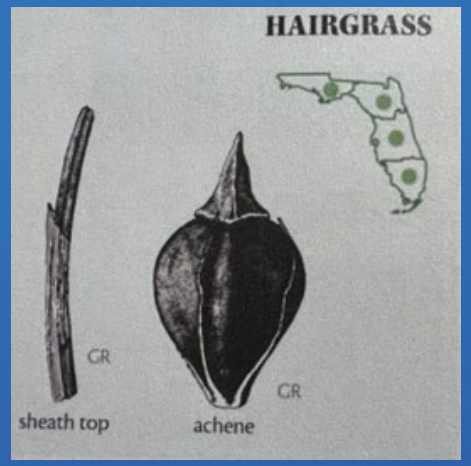
Eleocharis baldwinii* (T) vs. *Eleocharis vivipara

*****Both species can exhibit vivipary*****

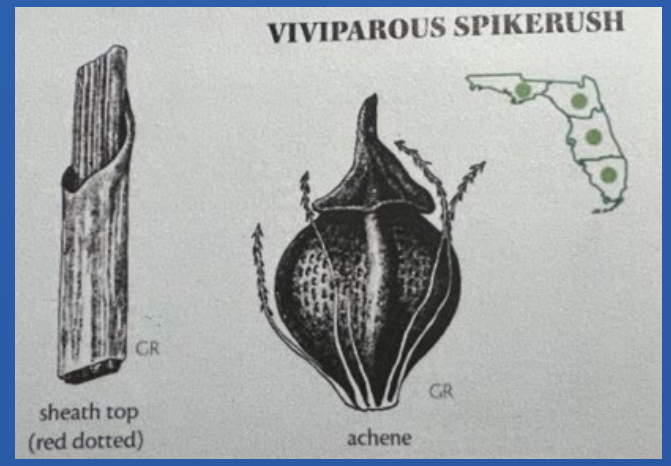


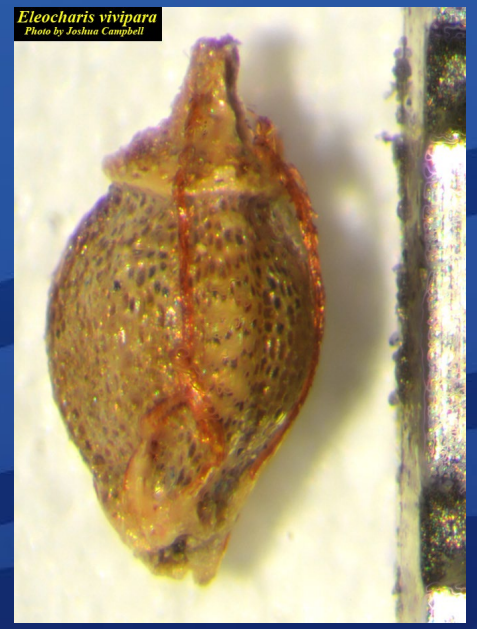
Eleocharis baldwinii

- NO red spot on sheaths
- Achene bristles less pronounced

Eleocharis vivipara

- Red spot on sheaths
- Achene bristles pronounced





Eupatorium capillifolium

- Adults can reach 3m tall
- All leaves bright green and glabrous
- Narrower leaf segments (cauline) 0.5mm or less
- Plants NOT viscid to touch

Eupatorium compositifolium

- Adults reach 1.5m tall
- Leaves dull grayish-green
- Leaf segments (cauline) > 1mm wide
- Plants viscid to touch when fresh

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Eupatorium capillifolium* (AD) vs. *Eupatorium compositifolium

Fraxinus caroliniana* (D) vs. *Fraxinus pennsylvanica

Fraxinus caroliniana

- 5-7 leaflets
- Medium sized, often multi-trunk
- Fruit: a winged, single samara

Fraxinus pennsylvanica

- 5-9 leaflets
- Large sized, often single-trunk
- Fruit: samara, narrower compared against *F. caroliniana*

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Gordonia lasianthus (OD) vs. *Magnolia virginiana* (OD)

Gordonia lasianthus

- Older bark furrowed and light gray
- Leaf margins crenate to serrate

Magnolia virginiana

- Bark smooth and light gray
- Leaves have NO teeth, are white on underside
- Produces conelike cluster of follicles, each with red seeds

Hydrocotyle umbellata* (OD) vs. *Hydrocotyle ranunculoides

Hydrocotyle umbellata

- Petiole attached in center of blade, round, deeply crenate

Hydrocotyle ranunculoides

- Not peltate, notched almost to petiole base

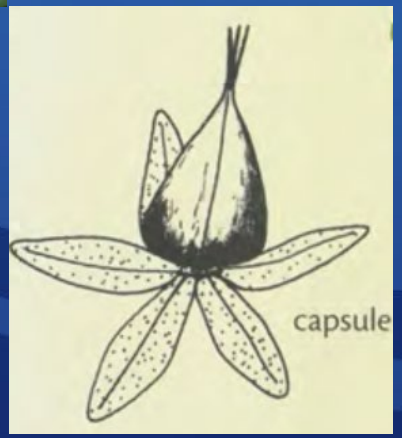
Hypericum myrtifolium (T) vs. *Hypericum tetrapetalum* (AD)

Hypericum myrtifolium

- Leaves ovate-triangular
- Sepals large and leafy, 5 equal-sized, may remain on plant after petals fall

Hypericum tetrapetalum

- Leaves broadly ovate, clasp the stem, sessile
- 4 petals and 4 sepals (2 large and 2 small)



Itea virginica (OD) vs. *Cyrilla racemiflora*

Itea virginica

- Leaf margins finely toothed, with lower surface being sparsely pubescent
- Bark thin & brownish

Cyrilla racemiflora

- Simple veins across leaf, conspicuous on both sides; ends in a flattened stem.
- Bark brownish gray (peal back bark surface to reveal pinkish inner bark!)

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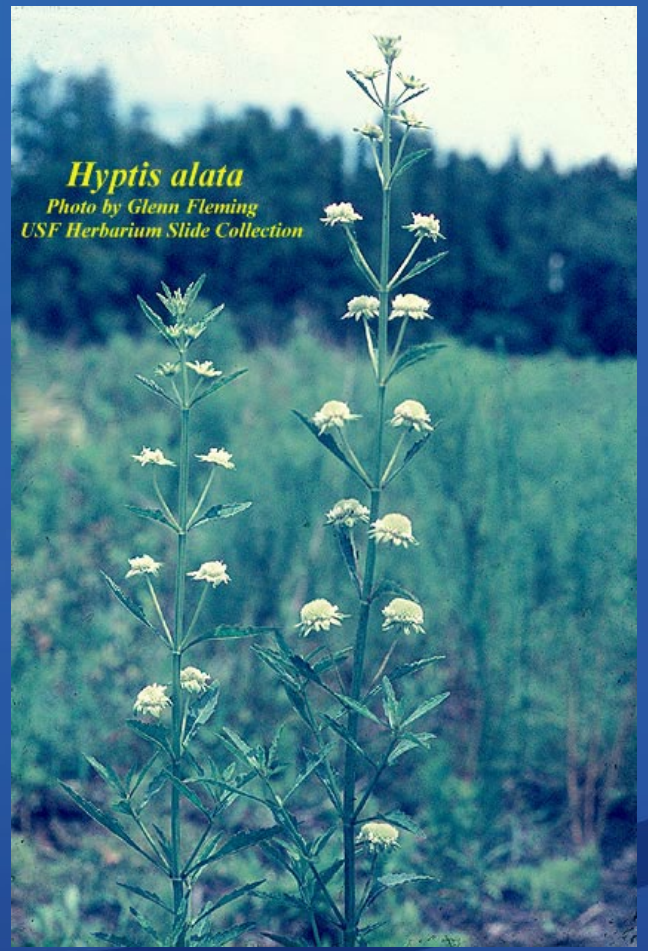
Lycopus rubellus (OD) vs. *Hyptis alata*

Lycopus rubellus

- Flowers with bilateral symmetry in clusters at leaf axils.
- Leaves 5-12cm long (lance-ovate shaped)



Hyptis alata

- Flower clusters on long stalks
- Leaves shorter & wider (diamond-shaped)

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***Melothria pendula* (T) vs. *Vitis rotundifolia* (AD)**

Melothria pendula

- Leaves alternate, small (2 – 8 cm), round, heartshaped base, 3-lobed.
- Fruit = mini "cucumber"

Vitis rotundifolia

- Leaves opposite tendrils; glabrous (not hairy), heart-shaped, coarsely toothed.
- Fruit = muscadine grape (edible)

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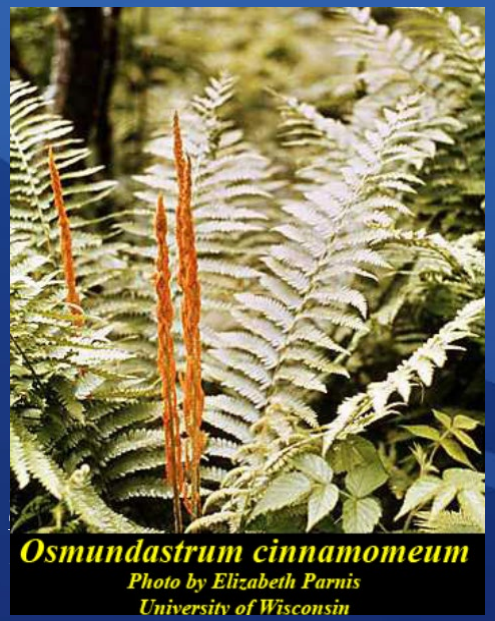
Osmunda cinnamomea (T) vs. *Woodwardia virginica*

Osmunda cinnamomea

- Fronds grow in clumps
- Petiole dark brown base, mostly darker rachis
- Veins not reticulate



Woodwardia virginica

- Does NOT grow in clumps
- Chainlike areoles lining the mid-veins of pinnules and midrib

Panicum anceps (AD) vs. *Panicum rigidulum* (OD)

Panicum anceps

- Scaly rhizomes
- Less "heavy" panicles mostly appressed to main axis

Panicum rigidulum

- NOT rhizomatous
- "Heavier" panicles generally less appressed
- Often plant has some dark purple coloration

***Paspalum laeve* (T) vs. *Paspalum setaceum* (AD)**

Paspalum leave

- Leaves rough to touch, more hairs on upper surface
- Flowering stem up to 3.7’ tall
- Grows in tufts

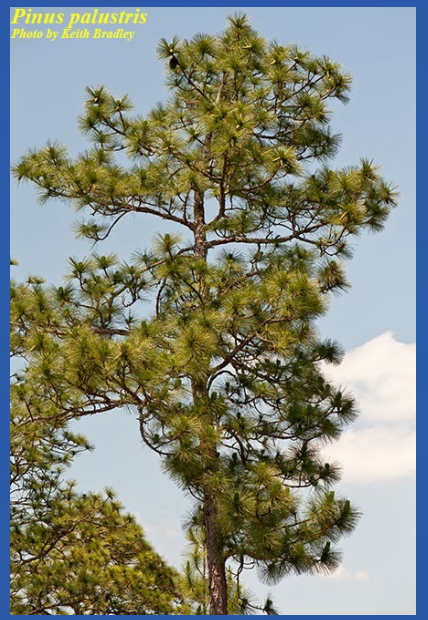
Paspalum setaceum

- Leaves shiny with evenly spaced hairs on margins
- Flowering stem up to 2.8’ tall
- Grows in FLAT circular tuft

Pinus elliottii (AD) vs. *Pinus palustris* (U)

Pinus elliottii

- Needles 2 or 3 per fascicle
- Young shoots (candles) beige and small
- Cones somewhat egg-shaped, prickly, and open.
- Lack grass stage
- Needles NOT clustered at tips of branches
- Smaller sheath on fascicle



Pinus palustris

- Needles always 3 per fascicle.
- Young shoots (candles) large (fat) and white.
- Cones large and long, prickly
- Young trees have grass stage
- Needles tufted at end of branch
- Larger sheath on fascicle

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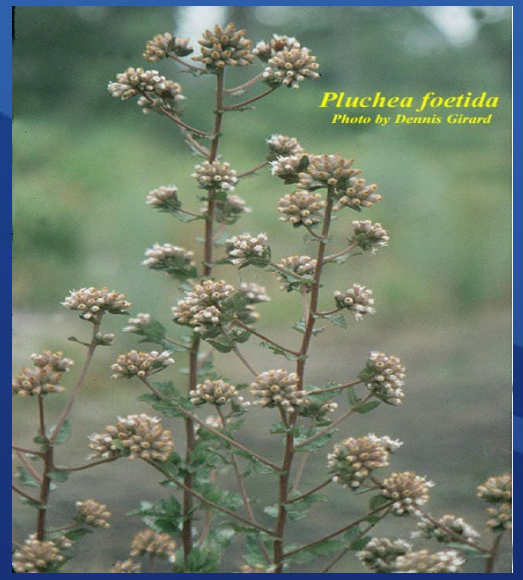
Pluchea rosea (OD) vs. *Pluchea foetida*

Pluchea rosea

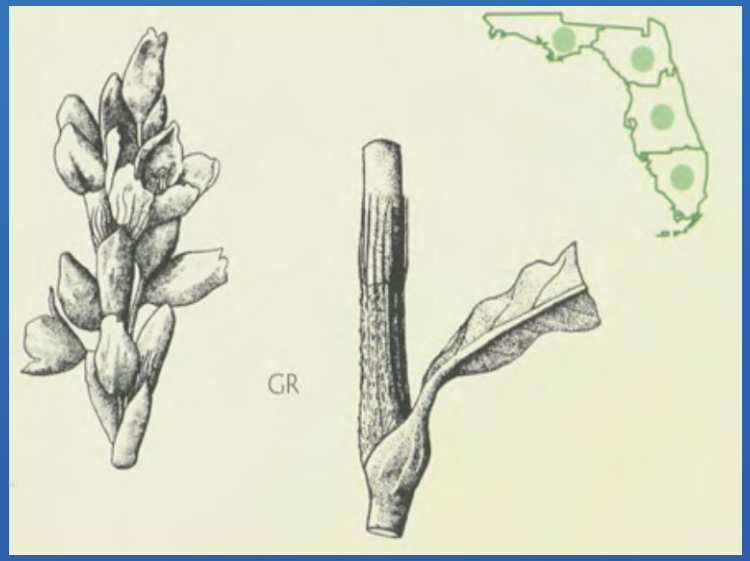
- Alternate leaves, clasping leaf base, margins serrate, often pink on edge
- Pink flowers



Pluchea foetida

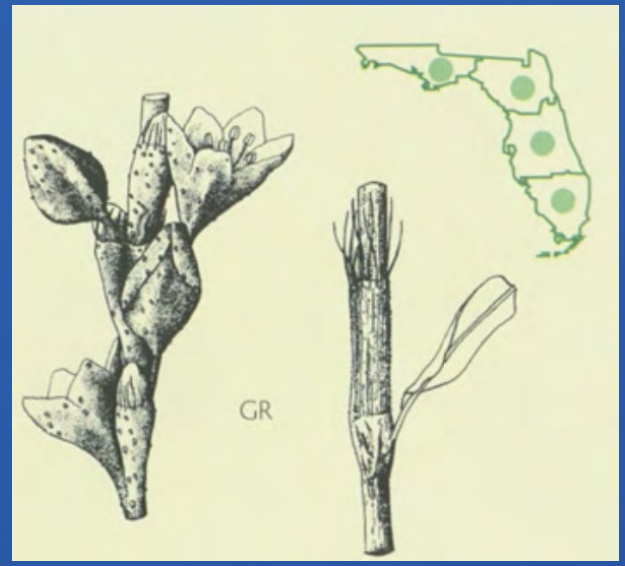
- Leaves shorter & rounder, alternate, sessile (no petiole), clasping, rough pubescent.
- Flowers in rounded cymes, white in color

Polygonum hydropiperoides* (OD) vs. *Polygonum punctatum



Polygonum hydropiperoides

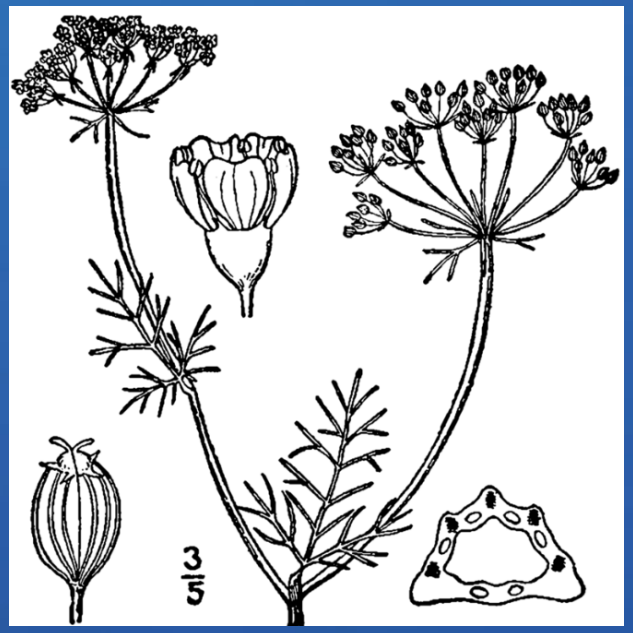
- Flowers in long axillary racemes, pink to greenish-white
- Lack raised dots **(HAND LENS!!)**



Polygonum punctatum

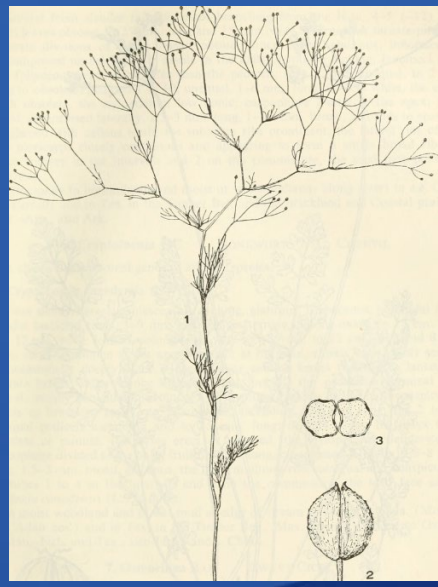
- White flowers (never pink) covered with raised dots (punctate glands)

Ptilimnium capillaceum (T) vs. *Spermolepis divaricata*



Ptilimnium capillaceum

- Purplish anthers & can have minute sepals
- Fruit broadly ovoid (egg-shaped) 1.5 – 3mm long, ribs conspicuous
- Leaf divisions filiform and usually divided into 3 segments at node on axis



Spermolepis divaricate

- Commonly with a single main stem
- Sepals always lacking
- Fruit oval (broadly elliptic) 1 – 1.5mm long, weakly ribbed

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Quercus laurifolia (T) vs. *Quercus virginiana* (U)

Quercus laurifolia

- Straight trunk
- Smoother bark when young, develops broad flat ridges when older
- Uncurled leaves with few hairs
- Buds pointed

Quercus virginiana

- Trunk and large branches often leaning
- Rough dark brown bark with raised ridges
- Darker green leaves that are gray-green pubescent on bottom

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Saccharum giganteum (OD) vs. *Phragmites australis*

Saccharum giganteum

- Grows in dense tufts
- Leaves long & wide, less prominent on flowering stems

Phragmites australis

- Does NOT grow in tufts
- Many leaves on flowering stems

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Sambucus nigra subsp. Canadensis (AD) vs. *Cicuta maculata*

Sambucus nigra

- Flower petals are NOT notched at the tip
- Leaves opposite, pinnately compound, leaflets serrated
- Stems woody with prominent lenticels

Cicuta maculate

- Flower petals notched at the tip
- Leaves alternate, lower leaves usually 3-pinnately compound. Coarsely toothed
- Stems herbaceous/glabrous

Schinus terebinthifolius (AD) vs. *Rhus copallinum*

Schinus terebinthifolius

- Fruit smaller, glossy, bright red "berries" in clusters
- Compound leaf with whitish leaf veins visible; leaf edge typically toothed

Rhus copallinum

- Fruit in dense cluster of small, round, red, hairy "berries"
- Compound leaf, with a winged leafstalk
- Erect thin trunks with leaves concentrated at tips of branches

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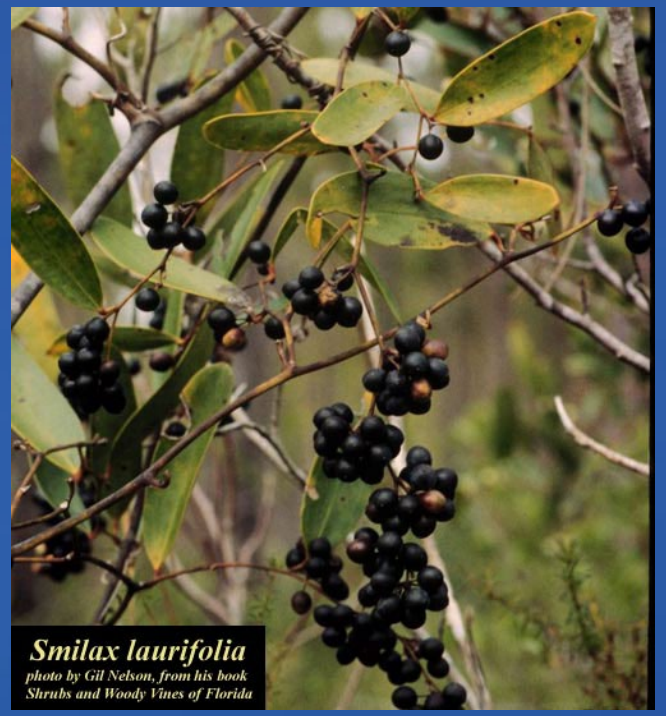
Smilax bona-nox* (AD) vs. *Smilax laurifolia

Smilax bona-nox

- At least some leaves have prickles on leaf margin
- Leaves often shiny but blotched (variegated) with distinctive ears (large lobes)



Smilax laurifolia

- Prickles NOT observed on leaf margins
- Variegation far less commonly observed

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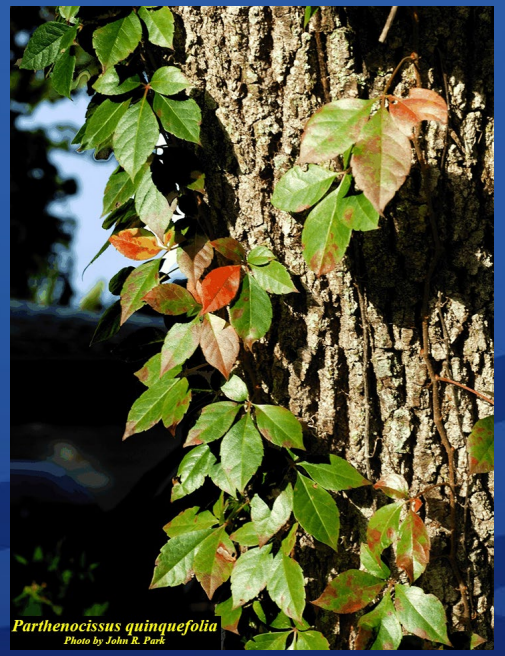
Toxicodendron radicans* (AD) vs. *Parthenocissus quinquefolia

Toxicodendron radicans

- Alternate, compound leaves with three leaflets and reddish petioles; very variable



Parthenocissus quinquefolia

- Five leaflets and climbs via coiling tendrils with “feet”

Ulmus americana (T) vs. *Carpinus caroliniana*

Ulmus americana

- Leaves alternate, two ranked with bases typically unequal (look slanted)
- Bark expressing flat plates

Carpinus caroliniana

- Equal leaf bases
- Smooth bark over wood with “ripples” that look like muscles

Vaccinium corymbosum* (T) vs. *Eubotrys racemosus

Vaccinium corymbosum

- Leaves deciduous alternate, typically more than 3 cm long, NOT serrated
- Fruit a blue berry (edible)

Eubotrys racemosus

- Leaves deciduous alternate, oval to widely lance-shaped blades with serrated margins
- Fruit is a capsule, brown/copper in color

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Video Content

- Trees 2:47
- Shrubs 37:31
- Ground Cover 44:08

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https://www.swfwmd.state.fl.us/projects/wetland-assessment-procedure

Questions?

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