



Getting to Know Your Aquatic Plants

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FDEP

Aquatic Plants

- Perennial
- Reproduce vegetatively (clonally)

Aquatic Plants

- Floating
- Submersed
- Emergent
- DEP's Lake Vegetation Index

Floating-Leafed Plants



- *Nymphaea odorata*
- *Nuphar luteum*
- *Nelumbo lutea*
- *Nymphoides aquatica*
- *Brasenia schreberi*
- *Limnobiium spongia*
- *Eichhornia crassipes*
- *Pistia stratiodes*

Nymphaea odorata



- Fragrant water lily
- Large white flower
- Leaves not peltate, with clear points
- Leaf undersides green or reddish
- Palmately veined



Nuphar luteum



- Cow-lily, spatter-dock
- Yellow bulbous flower
- Leaves pinnately-veined, with rounded edges, overlapping
- Leaf undersides green
- Leaves can protrude from water at low water levels





Nymphaea* vs. *Nuphar



**Leaves palmately veined,
non-overlapping, and pointed
white flower**



**Leaves pinnately veined, rounded,
overlapping
yellow bulbous flower**

Nelumbo lutea
Photo by Fred Nation



Nelumbo lutea

- American lotus
- Large peltate leaves, floating or emergent
- Leaves water resistant
- Showy yellow flower, “showerhead” fruit

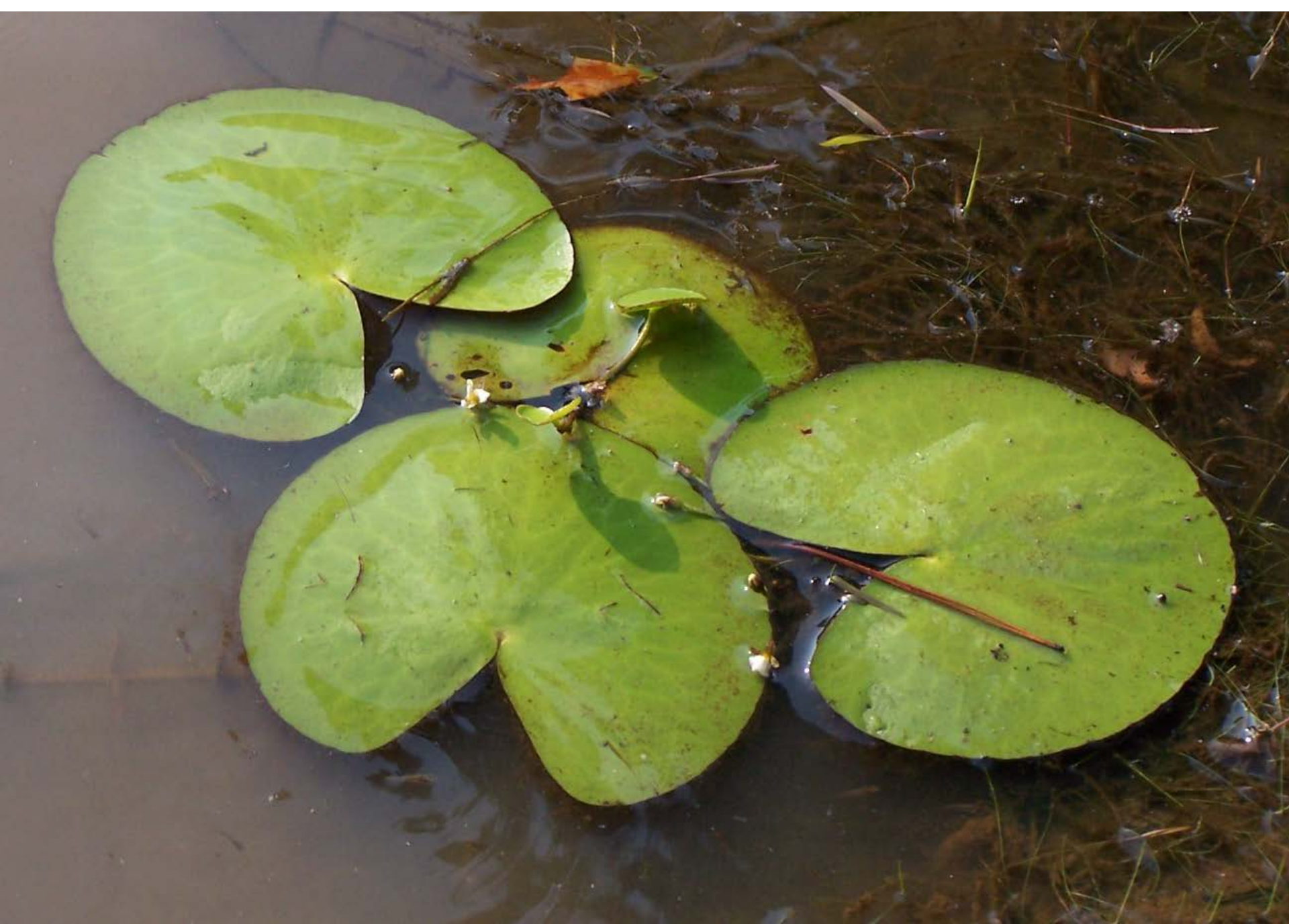
Nelumbo lutea
Photo by Fred Nation



Nymphoides aquatica



- Floating heart
- Small white flowers
- Leaves rounded, palmately veined
- Leaf undersides rough, reddish
- Tuber-like organs under leaves



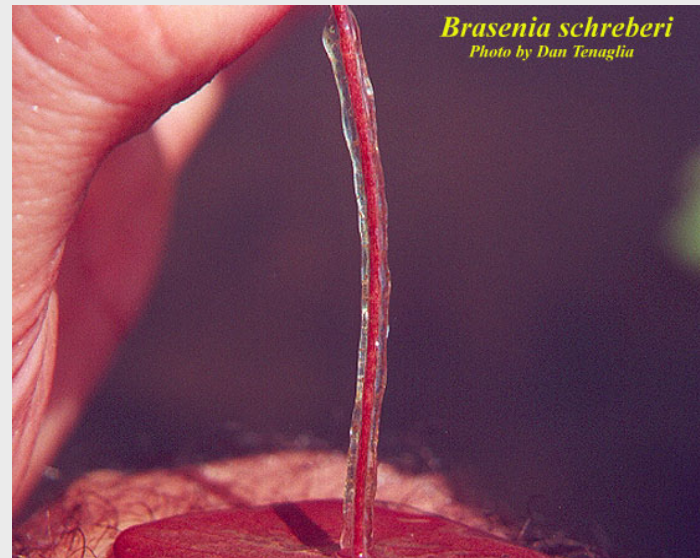
Nymphoides peltata



Exotic species *Nymphoides cristata* has white flowers and smooth undersides

Brasenia schreberi

- Watershield, snotbonnet
- Small peltate leaves, football shaped
- Musilaginous cover on stems and underside of leaves
- Small red flowers







Limnobium spongia

- Frog's bit
- Floating and emergent forms
- Floating leaves small and rounded, with spongy underside
- Can develop into mats (emergent)







Eichhornia crassipes

Eichhornia crassipes

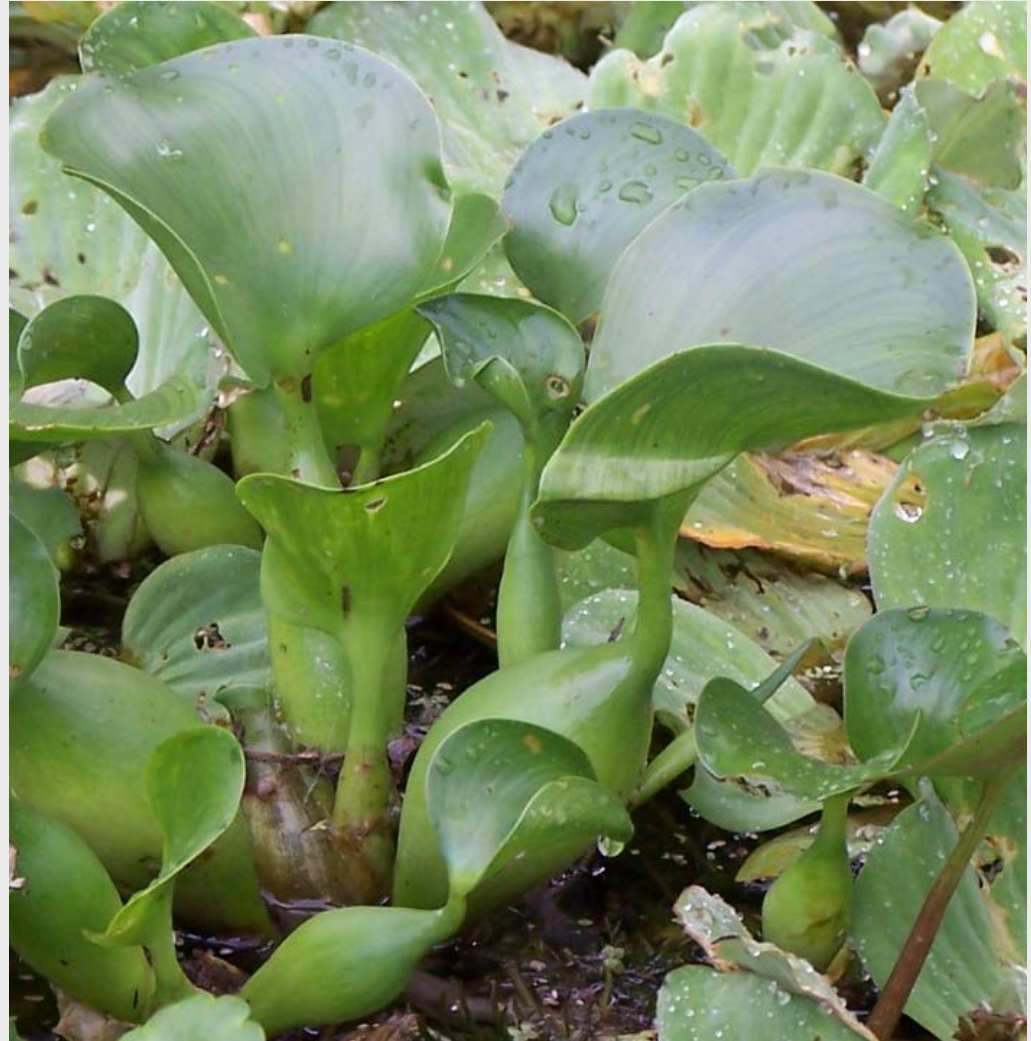
Photo and © by Roger Hammer
Wildflowers of the Everglades



- Water-hyacinth
- **INVASIVE EXOTIC**
- Leaves elliptic, parallel-veined
- Petioles inflated, spongy
- Roots dark, fibrous
- Showy purple flower
- Floating units of leaves



Limnobiium* vs. *Eichhornia



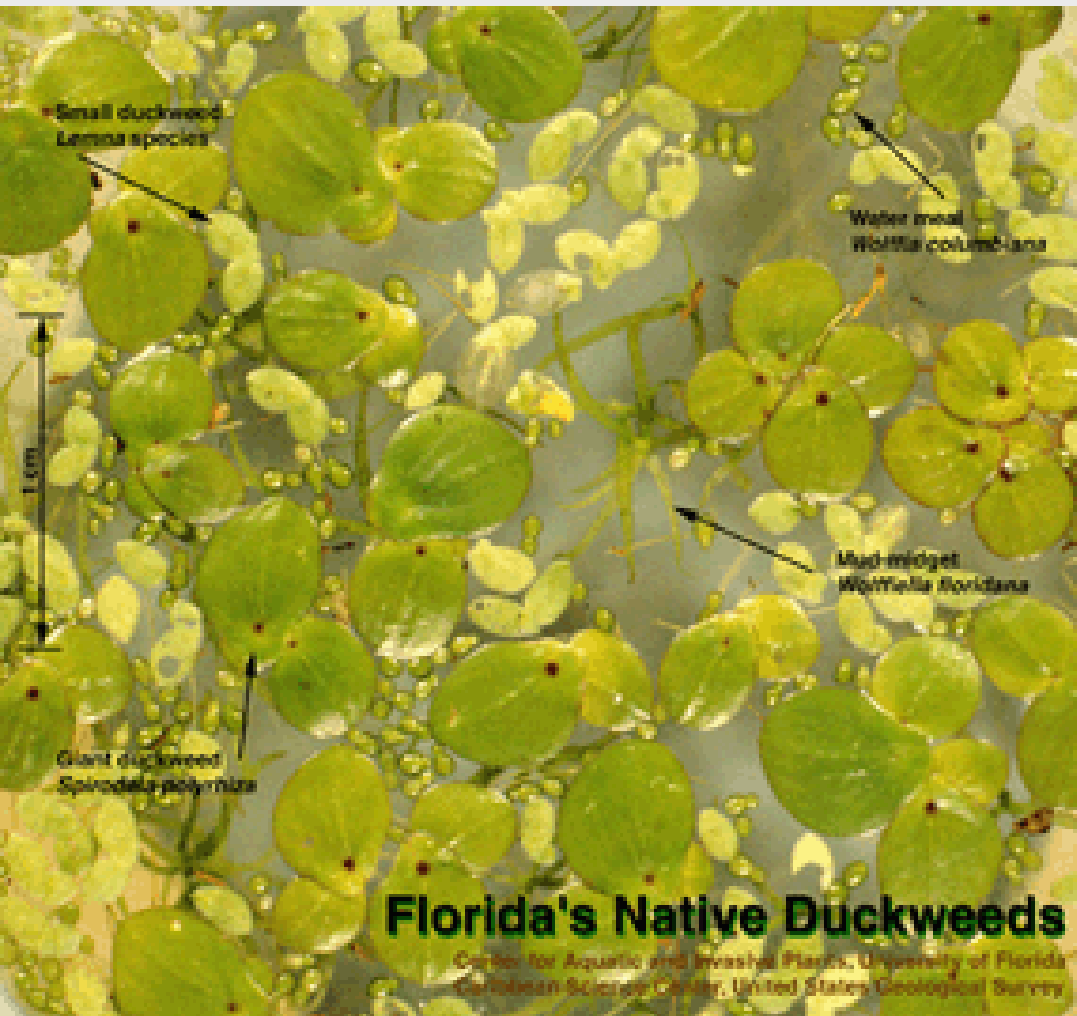
Pistia stratiodes



- **Water lettuce**
- **INVASIVE EXOTIC**
- **Leaves freshy,
water resistant**
- **Floating units of
leaves**

Small Floaters - Duckweeds

Pictured: *Spirodela polyrhiza*, *Lemna*, *Wolffiella*, *Wolffia*



- *Lemna* – 1 root
- *Spirodela*,
Landoltia - >1 root
- *Wolffia*, *Wolffiella* –



Landoltia punctata – EXOTIC

Small Floaters - Ferns

- *Azolla caroliniana* Carolina mosquito fern
- *Salvinia minima* (EXOTIC) water spangles



Submersed Plants – Strap-leaf style

- *Vallisneria americana*: tapegrass, eelgrass
- *Sagittaria kurziana*: springtape



Vallisneria vs. *Sagittaria*

Leaves: thick midsection

Leaf tips: rounded

leaf size varies for both!

Flowers: spiral peduncle,
single thick unit

5 distinct ridges

pointed

several white flowers
on straight peduncle



Vallisneria americana
Photo by Shirley Denton



Sagittaria kurziana
Photo by Jess Van Dyke
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Floatby Sightings



Vallisneria americana



Sagittaria kurziana

Vallisneria americana



Lake Barton, Orlando

Submersed Plants – Coontail style

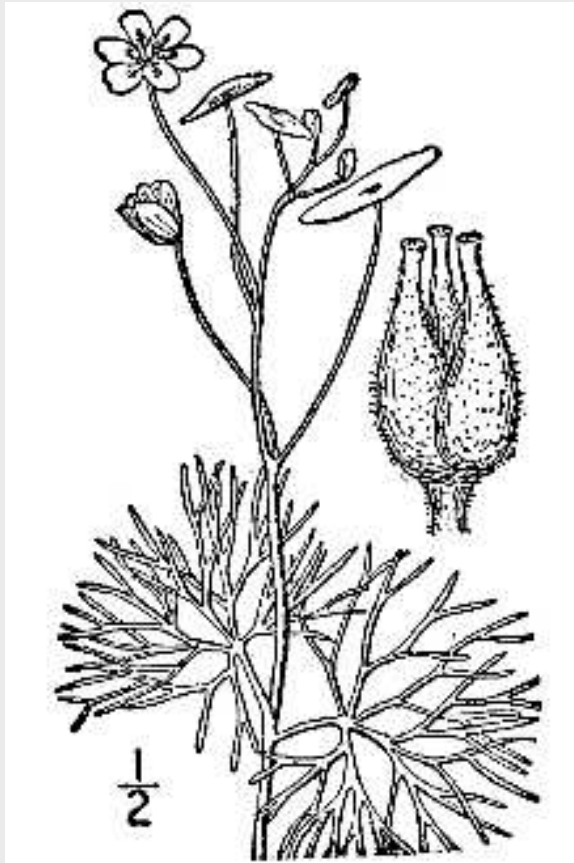


Cabomba caroliniana

- *Cabomba caroliniana*
- *Ceratophyllum demersum*
- *Egeria densa*
- *Hydrilla verticillata*
- *Myriophyllum* sp.
- *Utricularia* sp.

All can form large colonies

Cabomba carolinana



- Fanwort
- Stems and leaves submersed, flexible, purplish
- Leaves opposite or whorled, dissected, fanlike
- Tiny diamond-shaped floating leaf
- Small pink emergent flowers



Ceratophyllum demersum



- Coontail
- Submersed stems and leaves
- Leaves whorled and coarse
- Dichotomously branched

Egeria densa



- **Brazilian waterweed**
- **Leaves whorled, pointed, broad**
- **All submersed, long stems reaching surface**
- **Stems rarely branching**
- **White flowers**



Hydrilla verticillata



Hydrilla verticillata

Hydrilla verticillata

Photo by Shirley Denton



- Hydrilla
- Flexible stems up to 25 feet long, frequently branched
- Whorled pointed leaves with teeth on edges and midrib
- **INVASIVE EXOTIC**

Hydrilla verticillata





Mayaca fluviatilis

- Stream bogmoss
- Flexible stems, soft narrow leaves (needle-like)
- Can form large submersed mats or grow on sandy shores



Myriophyllum sp.



Myriophyllum aquaticum EXOTIC

- Water milfoils
- Some native, some EXOTIC
- Stems can contain submersed and emergent leaves

Myriophyllum aquaticum **(parrot feather)**



Parrot feather
Myriophyllum aquaticum
Photo by Vic Ramey
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Native *Myriophyllum*



- Reddish stems
- Rough stems
- Leaves in whorls of 3-6
- Includes *M. heterophyllum*, *M. pinnatum*, and *M. laxum*
- Leaves with 12-28, 8-10, and 11-21 divisions (cannot distinguish these 3 without fruiting tips)

***Myriophyllum heterophyllum* (Carr Lake)**

Myriophyllum spicatum (exotic)

- Stems grayish
- More dissections on leaves (24 or more)
- Bracts on flower stalk nearly invisible



Utricularia sp.



- Bladderworts
- Some with extensive submersed leaves
- Can ID with flowers, stems, leaves, bladders



Utricularia foliosa
Photo by Shirley Denton



Utricularia inflata
Photo by Glenn Fleming
USF Herbarium Slide Collection



Utricularia purpurea
Photo by Shirley Denton



Utricularia purpurea



Utricularia radiata
Photo by Fred Nation



Utricularia gibba (biflora)



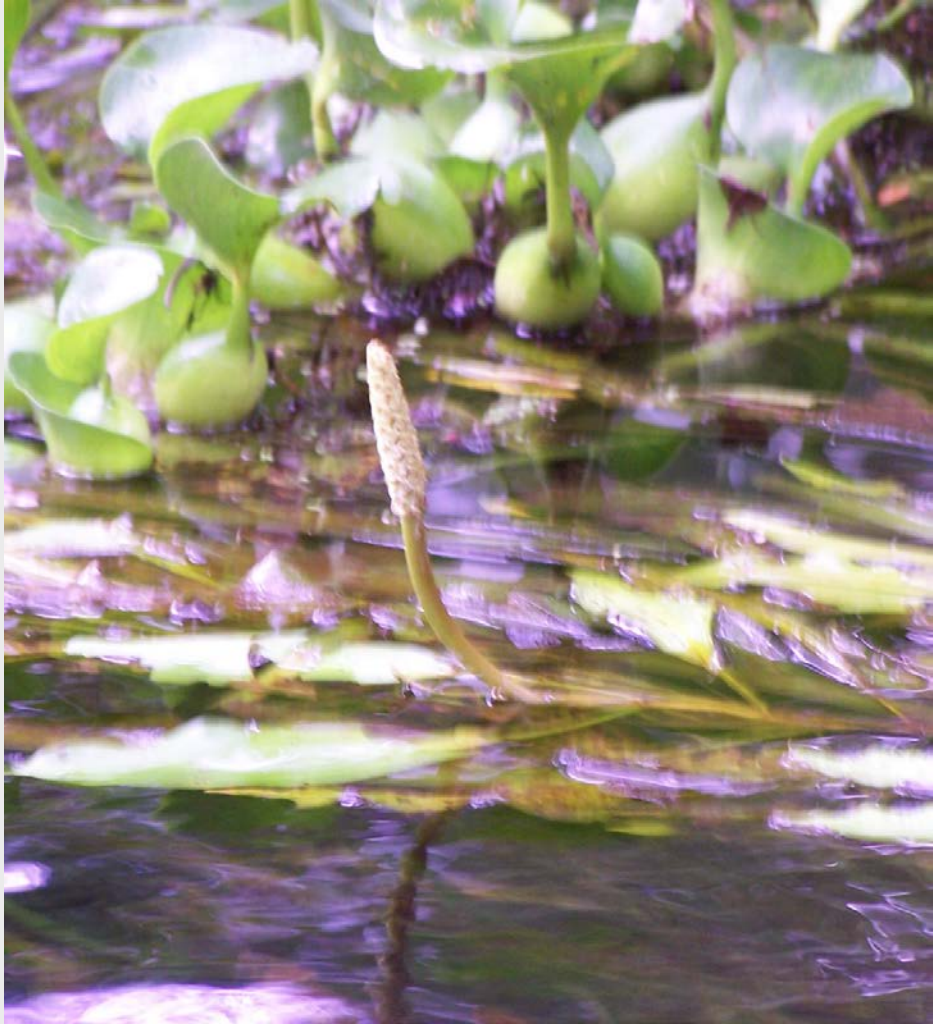
***Utricularia cornuta* at Grassy Prairie, Ocala Nat'l Forest
photo by Dana Denson**

Najas guadelupensis



- Southern naiad
- Small opposite linear leaves
- No apparent teeth on leaves
- Common native, can be weedy

Potamogeton sp.



- Pondweeds
- Alternate leaves
- Some have only submersed leaves, some have floating and submersed
- Some have very thin submersed leaves, similar to Najas

Potamogeton illinoensis

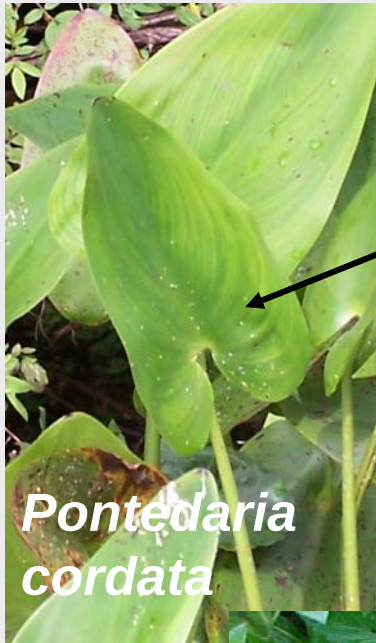


Potamogeton crispus

Photo by Shirley Denton

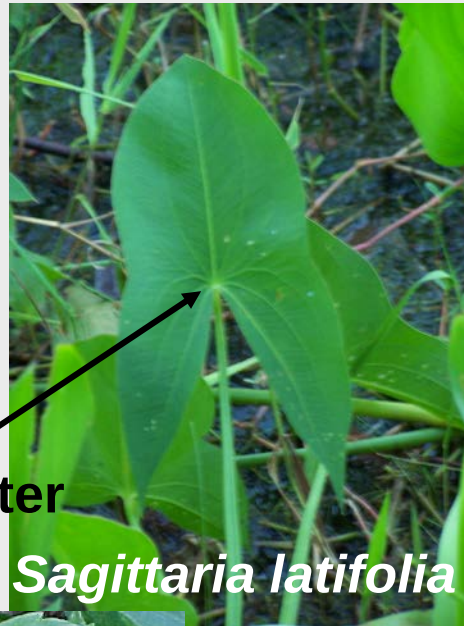


Arrow-leaved Emergents



Parallel

*Pontederia
cordata*



Radiate
From center

Sagittaria latifolia

Also radiates, but
only at base



Purple dot
Wavy leaf

Colocasia esculenta
Photo by Asit K. Ghosh



Peltandra virginica
Photo by Guy Anglin

Peltandra virginica

Saururus cernuus*, *Sagittaria lancifolia













More Trainings

- Grasses, sedges, rushes
 - Together
 - Separately
- Woody lakeside plants
- More on emergents
- Others?