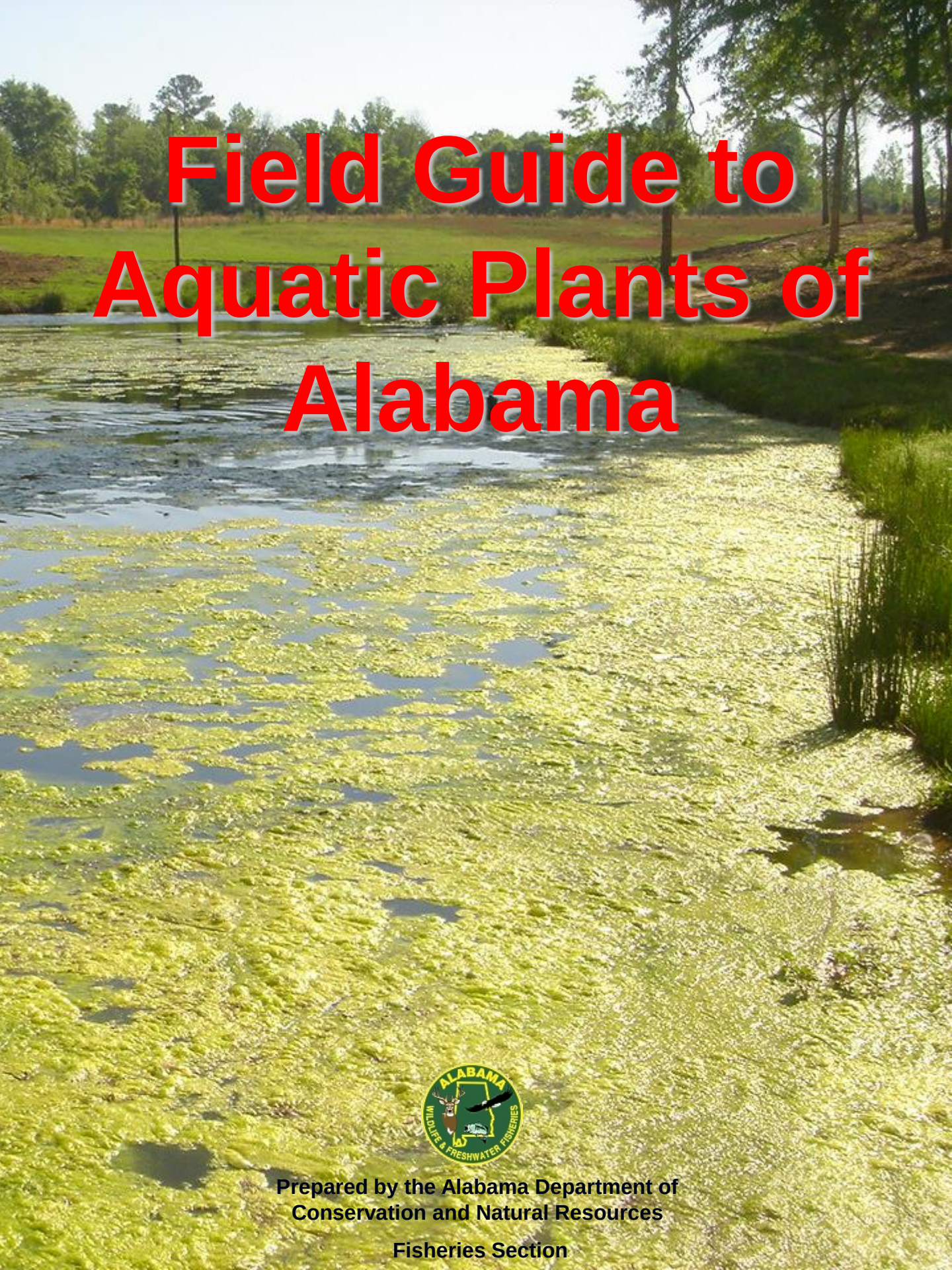
Field Guide to Aquatic Plants of Alabama



Prepared by the Alabama Department of Conservation and Natural Resources

Fisheries Section

Field Guide to Aquatic Plants of Alabama

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Aquatic Plant Growth Habits

The first step toward correct identification of an aquatic plant is to observe how it is growing in the water. Understanding the growth habit will also help determine the best method and timing for control, if necessary. Some species may exhibit different growth forms in response to their environment. Furthermore, a plant's growth form may change during its life cycle. However, aquatic vegetation can be placed in to the following growth forms in which they are most often observed at maturity:

- **Emersed:** Majority of the plant is above the water line and supports itself – sometimes completely out of the water. These plants are usually along the shoreline, but may extend quite a distance from the shore if water depth is very gradual or if they have buoyant structures such as large, hollow stems.
- **Submersed:** Entire plant is usually below the water line unless it becomes "topped-out" in which case some parts of the plant may protrude above the water. Many of these plants can grow in 5 to 10 feet of water depending on visibility.
- **Floating-Leaved:** A rooted plant with most of its leaves floating flat on the surface. A few species have some rigidity and can extend a little above the water line.
- **Floating:** Entire plant is floating.
- **Filamentous (algae):** Simple, rootless plant consisting of clusters of filaments. Can be found growing on the bottom, on objects, or floating. Many genera difficult to identify without microscope.
- **Planktonic (algae):** Microscopic, free-floating plants. May float on surface, forming a visible layer or may suspend below the surface, affecting the color of the water.

Index by Scientific Name

Index by Scientific Name

Index by Common Name

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Non-native

Alternanthera phyloxeroides
Alligatorweed

Distinguishing Characteristics

•Leaves arranged oppositely along stem. Leaves can have many different shapes, but often narrow and coming to a point.

•White flower

•Thick, hollow green to reddish-purple stem.

•Rooted along shoreline, but forms floating mat of erect stems. Mats can detach from shoreline.

Emersed

Ammannia coccinea
Purple Toothcup

Distinguishing Characteristics

•Erect plant usually with single stem, but can have branching in larger specimens; stem is square in cross-section.

•Leaves opposite and lanceolate in shape and are typically held at right angles to stem; each pair of leaves are often arranged at right angles to the pair above or below them.

•Flowers: small, purple and originate at base of leaf near stem.

Emersed

Bidens laevis
Burr-marigold

Distinguishing Characteristics

•Leaves: coarsely serrated, opposite and sessile along central stem.

•Larger specimens often have branching stems; stems may appear dark red to purple.

•Flowers: Yellow, showy, usually about 8 petals; each petal has a green bract about the same size below it; flowers have a long stalk originating from base of leaf.

•Grows erect along shoreline, but can also form floating mats stretching out from the shoreline. Growth habit similar to *Polygonum* and *Hydrolea*.

Emersed

Canna spp.
Cana

Distinguishing Characteristics

- **Ornamental growing tall with showy flower.**
- **Large oval leaves pointing upward.**
- **Usually growing in small clusters limited to the shoreline.**

Emersed

Carex lupulina
Hop Sedge

Distinguishing Characteristics

•Stems 3-angled and nonbranching.

•Basal leaf blades that are slightly indented along each side of midrib and drop down back toward ground.

•Seed heads tightly bunched with round inflated sacs at base and pointed on end.

•Flowers are clustered in a thin terminal spike 2 to 4 inches long; brown in color.

•Grows in clumps along shoreline and in shallow water.

Emersed

Cephalanthus occidentalis
Buttonbush

Distinguishing Characteristics

- **Woody, aquatic shrub with oval leaves coming to a point.**
- **Loose clusters of round seed heads approximately ¾-inch in diameter.**
- **Grows in shallow water, often out from the shoreline.**

Emersed

Non-native

Colocasia esculenta
Wild Taro

Distinguishing Characteristics

•Arrowhead-shaped terminal leaf up to 2 feet long.

•3 primary leaf veins stretching to each lobe. Several secondary veins along the primary veins that are nearly opposite.

•To separate amongst other plants with arrowhead-shaped leaves, *Colocasia esculenta* leaves are peltate (stalk attaches to middle of leaf instead of margin); often a purple dot at point of attachment.

Emersed

Cuscuta spp.
Dodder

Distinguishing Characteristics

- **Parasitic, aquatic vine found growing on other emergent plants.**
- **Stems yellow to orange.**
- **Occasional tiny white flower along stem.**

Cyperus odoratus
Flat Sedge

Distinguishing Characteristics

- **Like other flat sedges, stems are solid and triangular in cross-section.**
- **Long, narrow leaf blades coming up from base and drooping over.**
- **Seed heads appear like a test tube brush.**
- **Can form dense, grassy thickets in moist soil to shallow water.**

Emersed

Cyperus surinamensis
Tropical Flat Sedge

Distinguishing Characteristics

•Like other flat sedges, stems are solid and triangular in cross-section.

•Long, narrow leaf blades coming up from base and drooping over.

•Seed heads have spikelets that are densely-packed, flattened, serrated, and traingular.

•Clustered along shoreline or can form dense, grassy thickets in moist to shallow water.

Emersed

Distinguishing Characteristics

•Stems round in cross-section, jointed and unbranching.

•Leaves loosely whorled around stem in 3 distinct planes; leaves are narrow and 3 to 5 inches long.

•Spikelets with several loosely-packed, pointed "scales" each about 1-inch long arranged alternately along a central stem.

•Usually in clusters in shallow water to moist soil.

Echinodorus cordifolius
Creeping Burhead

Distinguishing Characteristics

•Leaves spade-shaped, with shallow cleft at petiole; petioles are grooved; leaves have 3 to 5 primary veins.

•Flowers on short stalks whorled around leafless stalk; whorls are intermittent along a long arching stalk.

•Usually restricted to shoreline.

•Plant appears similar to *Saggitaria lancifolia*.

Emersed

Eleocharis quadrangulata
Squarestem Spikerush

Distinguishing Characteristics

- **Erect plant with single stem and no leaves, stem is square in cross-section.**
- **Terminal seed head that appears scale-like with short white hairs often visible.**
- **Can form dense stands in shallow water similar to *Scirpus spp.***

Eriocaulon spp.
Hatpins

Distinguishing Characteristics

- **Thin rush with small terminal inflorescence resembling small cotton ball.**
- **Rush loosely fanning in all directions.**
- **Moist soil or very shallow water.**

Hydrocotyle umbelatta
Water Pennywort

Distinguishing Characteristics

•Each stem has a single terminal leaf that is nearly round with shallow cleft; about the size of a half-dollar; similar to terrestrial dollarweed.

•Stem attaches to center of leaf.

•Usually found growing along shoreline in moist soil or very shallow water; can also form floating mat of tangled stems that are erect on terminal end similar to *Myriophyllum aquaticum*.

Emersed

Hydrolea quadrivalvis
Waterpod

Distinguishing Characteristics

- **Leaves alternate with rough margins.**
- **Stiff thorns and blue flowers in leaf axis.**
- **Stems have fine hairs.**
- **Usually grows in isolated clumps along shoreline, but can eventually surround shoreline. Appearance and growth habit very similar to *Polygonum spp*.**

Hygrophila costata
Lake Hygrophila

Distinguishing Characteristics

•Leaves arranged oppositely around stem; leaves have rough margins; primary and secondary leaf veins very distinct.

•Small, white to pink flower in leaf axis; tiny leaves may also be present in leaf axis.

•Stems and sometimes primary leaf vein dark red.

•Usually grows in isolated clumps along shoreline, but can eventually surround shoreline. Appearance and growth habit very similar to *Alternanthera spp*. which has a terminal white flower.

Emersed

Hymenocallis spp.
Spider Lily

Distinguishing Characteristics

•Basal leaves appearing like grass blades; leaves up to 3 feet long and 1.5-inch wide.

•Showy, white flowers in groups at end of thick, leafless stem.

•Grows in moist soil to shallow water.

Emersed

Iris pseudacorus
Yellow Flag

Distinguishing Characteristics

•Basal leaves appearing like grass blades; leaves up to 3 feet long and 1.5-inch wide.

•Showy, white flowers in groups at end of thick, leafless stem.

•Grows in moist soil to shallow water.

Emersed

Justicia americana
Waterwillow

Distinguishing Characteristics

- **Long, very narrow leaves arranged oppositely along stem.**
- **Stems typically erect**
- **Faint purple, irregular flower.**
- **Spreads by rhizomes and can grow out from shoreline in deeper water; does not form floating mats and weed beds not as dense compared to *Alternanthera phyloxeroides* or *Ludwigia spp*.**

Emersed

Distinguishing Characteristics

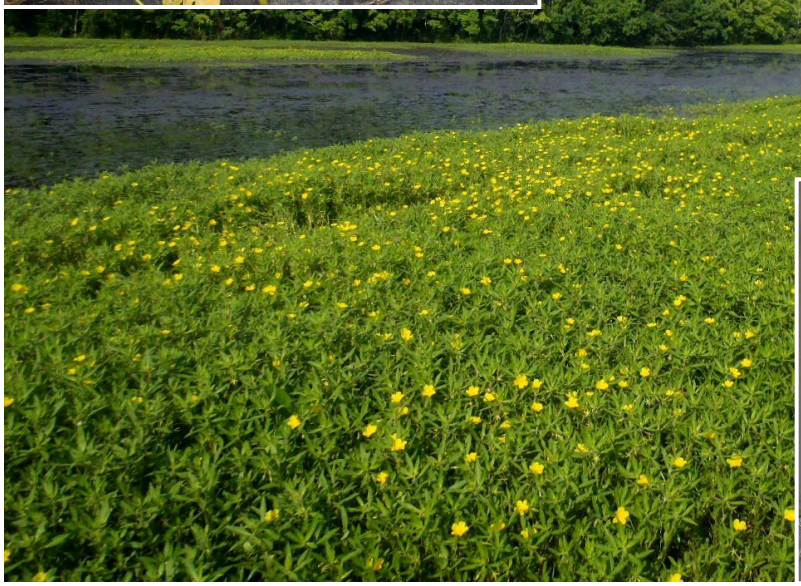
•Leaves heart to spade-shaped; once mature, they begin to point upward and curl upward on the sides; leaf veins webbed; leaf stalks stiff with ridges.

•Also has small floating leaves that are heart-shaped.

•Plant has feathery white roots.

•Forms thick mats growing out from shoreline.

•Can be rooted or floating. The floating form appears similar to *Eichhornia crassipes*, however it has spongy, inflated leaf stalks and dark roots.



Distinguishing Characteristics

•Leaves arranged alternately around thick, hollow stem that is green to red; leaves can have many different shapes, but often oval or club-shaped.

•Flowers are yellow, and if present can easily distinguish *Ludwigia* spp. from other emersed species that look similar.

•Rooted along shoreline, but forms floating mat. Often has semi-erect stems and runners creeping away from the shore. The leaves on runners are often maroon in color usually, shorter and rounder, and lay flat on the surface.

Luziola fluitans
Southern Water Grass

Distinguishing Characteristics

- **Leaf blades 3 to 5 inches long; lying flat on surface or raised a few inches high.**
- **Leaf blades feel rough on top.**
- **Rooted at shoreline, but forms floating mat that creeps out from shore. Has the appearance of terrestrial crabgrass.**

Emersed

Marsilea spp.
Water Clover

Distinguishing Characteristics

•Delicate plant resembling 4-leaf clover.

•2 growth forms: can grow erect on long, think stalk; or can grow in slightly deeper water with leaves floating on surface. Usually found in moist soil or very shallow water.

Emersed

Micranthemum spp.
Baby's Tears

Distinguishing Characteristics

•Delicate plant (forb) with opposite leaves that are less than ½-inch in diameter and nearly perfectly round.

•Usually grows out from shoreline in clumps; often forming dense mats just above the surface.

Emersed

Non-native

Myriophyllum aquaticum
Parrot Feather

Distinguishing Characteristics

•Erect green stem with whorled leaves that are pinnately compound; leaf resembles a feather similar to a other *Myriophyllum spp*.

•Rooted along shoreline and stems trail along the ground or float across the water surface, becoming erect at the leafy end. Can form a tangled mass of floating stems.

Emersed

Non-native

Oxycaryum cubense
Cuban Bulrush

Distinguishing Characteristics

•Single triangular stem leading to multiple round seed heads with short stalks and several limp grass blades.

Emersed

Panicum hemitomon
Maidencane

Distinguishing Characteristics

•Stems erect; fairly stiff leaf blades up to 12 inches long.

•Seed head is branched, but they are pressed tightly to and slightly twisted around central stem.

•Resembles *P. repens*, although a larger plant with wider and longer leaf blades; entire plant may be up to 5 feet tall.

•Often growing in clumps or band around shoreline.

Emersed

Non-native

Panicum repens
Torpedo Grass

Distinguishing Characteristics

•Leaf blades narrow and stiff; growing at 45 degree angle from stem; leaves alternate.

•Tremendous root system with rhizomes.

•Seed head is multiple branches that are frail and wavy. Seeds are few and spaced out.

•Often growing in clumps or narrow band around shoreline. Can also creep toward center of pond.

Emersed

Peltandra virginica
Arrow Arum

Distinguishing Characteristics

•Medium-sized, arrowhead-shaped terminal leaf.

•3 primary leaf veins stretching to each lobe; although central vein most prominent; secondary veins are many and very fine.

•Tiny yellow flowers tightly arranged on spike with sheath; this spike is usually below the leaves amongst the leaf stalks.

Emersed

Polygonum spp.
Smartweeds

Distinguishing Characteristics

•Leaves alternate along erect stem; leaves long and coming to a point. Swollen ring around stem where leaf attaches.

•Usually grows in isolated clumps along shoreline, but can eventually surround shoreline.

Emersed

Polygonum hydropiperoides
Swamp Smartweed

Distinguishing Characteristics

- **Leaves alternate with swollen ring around stem at leaf base, characteristic of *Polygonum* spp.; leaves narrow and strap-like.**
- **Stems may have one to several racemes of tiny white to pink flowers.**
- **Growth habit characteristic of *Polygonum spp*.**

Emersed

Pontederia cordata
Pickerelweed

Distinguishing Characteristics

- **Ornamental plant with elongated, heart-shaped leaves pointing upward.**
- **Showy, erect raceme of purple flowers on isolated stem reaching above leaves.**
- **Usually grows in isolated clumps along shoreline, but can eventually surround shoreline.**

Emersed

Saggitaria lancifolia
Duck Potato

Distinguishing Characteristics

•Plant has a thick stalk with a single terminal leaf that is lance-shaped. Leaf often appears like a candle flame.

•Prominent central leaf vein.

•White, 3-petal flower arranged in a raceme or individually at the end of a thick stalk separate from the leaf.

•Moist soil or very shallow water.

Emersed

Saggitaria latifolia
Arrowhead

Distinguishing Characteristics

•Plant has a thick stalk with a single terminal leaf shaped like a deeply-dissected arrowhead.

•Leaf has many uniform veins originating from the center and curving toward the leaf margin.

•White, 3-petal flower arranged in a raceme or individually at the end of a thick stalk separate from the leaf.

•Moist soil or very shallow water.

Emersed

Saururus cernuus
Lizard Tail

Distinguishing Characteristics

- **Branching stem with alternating, triangle-shaped leaves.**
- **Inflorescence is long raceme of tiny white flowers drooping downward.**
- **Rooted in moist or very shallow water.**

Emersed

Scirpus spp.
Bulrushes

Distinguishing Characteristics

- **Leaves are usually reduced to sheaths appearing like a a cluster of long, leafless stems; stems are somewhat triangular.**
- **Inflorescence usually at tip of stems.**
- **Moist soil to shallow water; found in acidic to neutral waters.**

Typha sp.
Cattails

Distinguishing Characteristics

•Large plant growing 4 to 8 feet tall.

•Leaf blades in clusters.

•Terminal, brown seedhead that is tightly packed and in the shape of a cigar.

•Growing along margins and may grow out to 2 feet of water. Plant lays dormant in winter, turning brown and can completely ring the shoreline of a pond in a few years if not controlled.

Distinguishing Characteristics

- **Opposite leaves made up of branchlets that are multi-branching into a fan shape.**
- **Small white flower with 6 petals and yellow center.**
- **Forms thick mats reaching toward the surface. Appears similar to *Ceratophyllum demersum* underwater.**

Ceratophyllum demersum
Coontail

Distinguishing Characteristics

•Thin, rough leaves very similar to *Chara* that are whorled around stem; but the leaves are forked and whorls of a healthy specimen are closer together giving the appearance of a raccoon's tail.

•Plant has no noticeable odor.

•Can grow in deep water and become topped out at the surface.

Submersed

Chara spp.
Muskgrass

Distinguishing Characteristics

•Thin, rough leaves or "branchlets" whorled around stem; usually in whorls of at least 6 branchlets.

•Musky or "garlicy" odor.

•Forms thick, underwater mats that seldom reach the surface. Often appears like rolling meadows underwater.

•Two differernt types of *Chara*, most likely different species, are commonly found in Alabama: One is usually found in the "black belt" prairie soil and tends to have branchlets that are 1 to 3 inches long and whorls appear more spaced out along the stem. The other type of *Chara* is usually found in the less alkaline waters of the state. It tends to have tiny secondary branchlets and the plant has a much denser growth form.

Non-native

Egeria densa
Brazilian Elodea

Distinguishing Characteristics

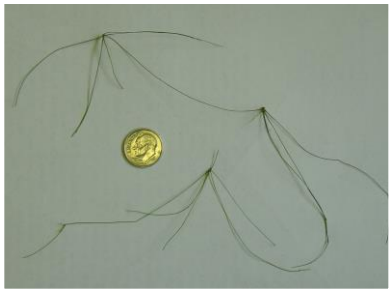
•Small, strap-like leaves (1-inch long) tightly whorled around thick stem; whorls of 3 to 6 leaves, but most often 4; often confused with *Elodea* which is usually less robust and leaves typically in whorls of 3.

•Forms very dense mats reaching the surface.

•Occasionally see small white flower with 3 petals on frail stalk just above surface.

Submersed

Eleocharis baldwinii
Slender Spikerush



Distinguishing Characteristics

•Very fine, bright green rush; appears like green hair in hand.

•2 growth forms: can grow in moist soil or on top of floating objects having the appearance of winter rye grass; or can be submerged as a tangled mass often just below or at the surface.

Submersed

Non-native

Hydrilla verticillata
Hydrilla

Distinguishing Characteristics

- **Small, strap-like leaves (1-inch long) in whorls of 3 to 8 around stem.**
- **Leaf margins noticeably serrate and rough to the touch; and sometimes small 2 to 4 barbs or spines on underside midrib of leaf.**
- **Resembles *Elodea* and *Egeria* which are smooth to the touch.**
- **Forms very dense mats reaching surface.**

Submersed

Juncus repens
Creeping Rush

Distinguishing Characteristics

•Usually 3 to 4 leaf blades whorled or “fanned” along flat stem; whorls spaced out.

•2 growth forms: usually submersed and growing up toward surface; but can also be rooted along shoreline and stretch out across the surface.

Submersed

Distinguishing Characteristics

•2 leaf forms; subsurface leaves are very fine and feathery like *M. spicatum*; surface leaves are short leaves tightly whorled around the erect tip of the stem.

•Stem often dark red.

•Growth habit similar to *M. spicatum*.

Non-native

Myriophyllum spicatum
Eurasion Watermilfoil

Distinguishing Characteristics

•Leaves whorled around stem similar to coontail; but each leaf is limp and deeply divided giving it a feather appearance characteristic of Myriophyllum spp.; each leaf has at least 24 leaflets.

•Stem thick and green.

•Forms thick, underwater mats that can become topped-out.

Submersed

Distinguishing Characteristics

•Very thin, branching plant with very thin, strap-like leaves (1-inch long); leaves opposite or whorled in groups of 3 around stem; often confused with *Potamogeton diversifolius* which has alternate leaves, but *Najas guadalupensis* leaves are shorter and more rigid.

•Often found in highly alkaline soil.

•Can completely cover shallow areas and can become "topped-out". Small, brown inflorescence occasionally seen above surface when topped-out.

Najas minor
Spiny-leaf Naiad

Distinguishing Characteristics

•Branching stem with thin, rough leaves that curl downward. Leaves resemble *Chara* branchlets; however there are many more branchlets appearing like a plume rather than distinct whorls.

•No noticeable odor.

•Growth habit characteristic of naiads.

Submersed

Nitella spp.
Stonewort

Distinguishing Characteristics

- **Very frail stem with stiff branches that are dichotomously forked several times in to smaller branchlets.**
- **Usually found in relatively low alkaline water.**
- **Appearance similar to *Chara*, but no odor.**
- **Can form thick, underwater meadows eventually becoming “topped-out”.**

Submersed

Non-native

Potamogeton crispus
Curly-leaf Pondweed

Distinguishing Characteristics

- **2 leaf forms; subsurface leaves strap-like with straight margins; surface leaves are slightly broader with wavy margins.**
- **Stems often have a zig-zag appearance and can be branching.**
- **Growth habit similar to *P. diversifolius*.**

Submersed

Potamogeton diversifolius
Variable-leaf Pondweed

Distinguishing Characteristics

•2 leaf forms: surface leaves are oval, about 1 to 2 inches long and opposite; subsurface leaves are thin, ribbon-like and alternate; stem often forks.

•If surface leaves not present, it appears like *Najas guadalupensis*; however, subsurface pondweed leaves are longer, more ribbon-like, and alternate.

•Can become "topped-out". Small light green seed head (less than 1 inch) may be visible just above surface when topped-out.

Potamogeton nodosus
Long-leaf Pondweed

Distinguishing Characteristics

•2 leaf forms; subsurface leaves strap-like with slightly wavy margins; surface leaves are more oval and rigid.

•Surface leaves often overlapping and usually over 2 inches long.

•Growth habit similar to *P. diversifolius*; green seed head up to 2 inches.

Ruppia spp.
Widgeon Grass

Distinguishing Characteristics

•Leaves alternate and ribbon to thread-like.

•Leaves have stipules and leaf sheath originating from main leaf base appearing like multiple leaf blades.

•Leaves inflated at base.

•Growth habit similar to *Potamogeton*.

Distinguishing Characteristics

•Multi-branching stems with no distinguishable leaves.

•Often has small flowers on a frail stem just a few centimeters above the surface; flowers often yellow, but some species have purple flowers.

•Tiny bladders (green or black) along branches used for trapping insects.

•*Utricularia spp*. can be rooted, but most species are floating as a tangled mass around other vegetation or can be floating at or just beneath surface.

Distinguishing Characteristics

- **Limp, tape-like leaves nearly 1-inch wide and up to several feet long.**
- **Some of the longer leaves may float at or just below the surface.**
- **Flower or fruit at end of a long thread-like stem; this stem is often coiled.**

Zannichellia palustris
Horned Pondweed

Distinguishing Characteristics

•Opposite leaves that are thin and ribbon-like. Leaves similar to *Potamogeton diversifolius*, but leaves are opposite.

•Tiny flowers or "horns" at leaf bases.

•Growth habit similar to pondweeds.

Submersed

Brasenia schreberi
Watershield

Distinguishing Characteristics

- **Small, football-shaped leaves only 2 to 4 inches long.**
- **Leaves lie flat on water surface; dark red underneath with gelatinous covering.**
- **Very inconspicuous dark red flower on short stalk.**
- **Over time, can creep out toward center of pond in several feet of water.**

Nelumbo spp.
American Lotus

Distinguishing Characteristics

- **Leaves nearly perfectly round with no cleft.**
- **Leaves may be flat on surface or raised up to 3 feet high on stalk.**
- **Showy flowers often yellow, but ornamental varieties range in colors from white to pink.**
- **Round seedpods have a honeycomb appearance.**
- **Very large and extensive root system (rhizomes).**

Nuphar luteum
Spatterdock

Distinguishing Characteristics

•Leaves spade-shaped with deep cleft to center.

•Leaves can be flat on surface, but usually become raised out of the water and pointing up.

•Small, yellow flower appears to not be fully opened; flowers attached to thick stalk just above surface.

Nymphaea odorata
Fragrant Water Lily

Distinguishing Characteristics

• Leaves nearly round with deep cleft to center; can be many different sizes present; appear like a pie with one piece removed.

•Showy flowers usually white; ornamental varieties often pink to red, but can be a range of colors.

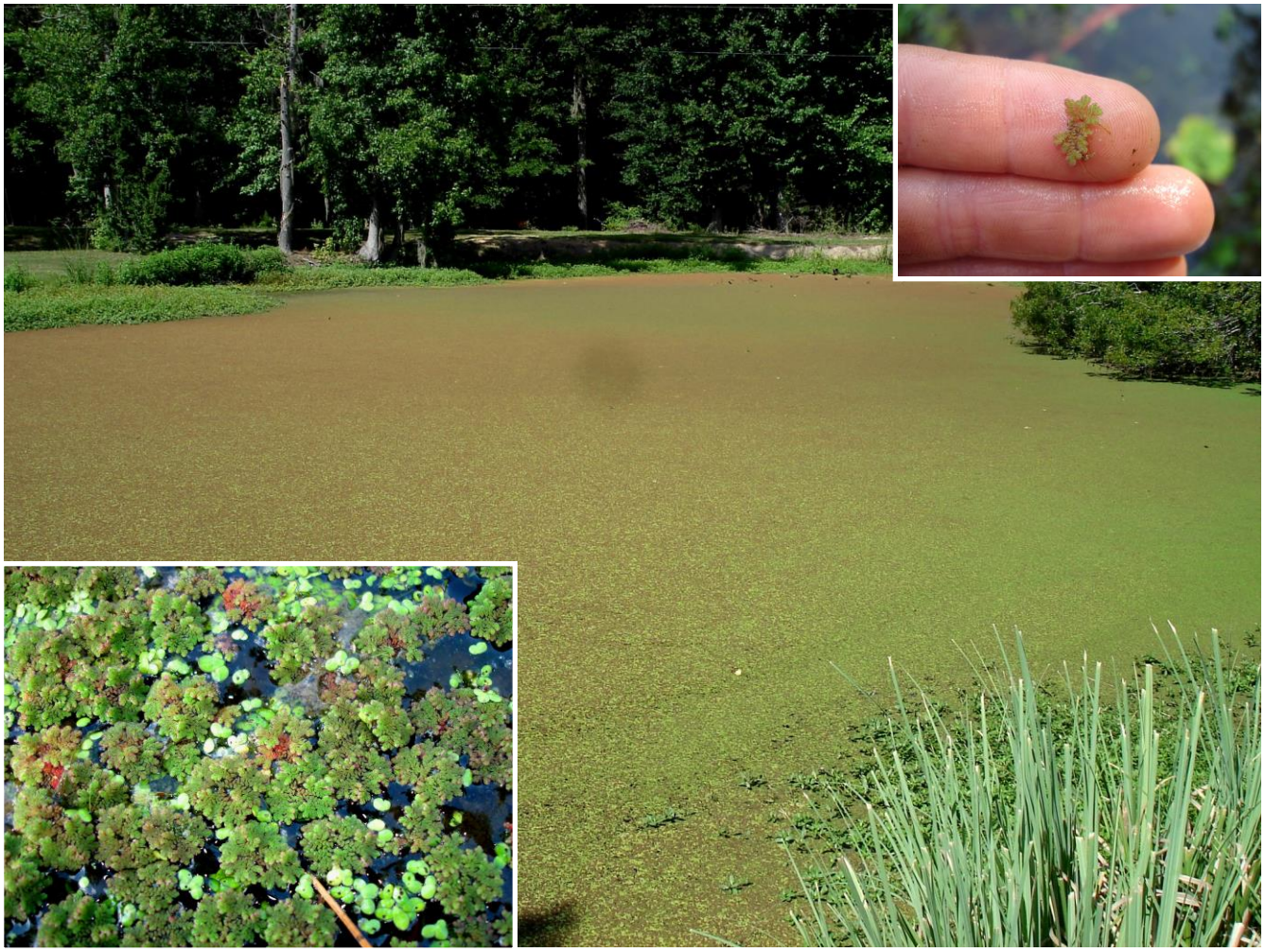
Non-native

Nymphoides peltata
Yellow Floating Heart

Distinguishing Characteristics

- **Leaves are heart-shaped with cleft to center; cleft is often closed.**
- **Leaves are usually 3 to 6 inches long; leaves and flowers larger than other native floating hearts.**
- **Yellow flower with 5 petals; petals have wavy, paper-thin margins.**

Azolla caroliniana
Mosquito Fern



Distinguishing Characteristics

•Cluster of tiny fern-like leaves; leaves usually ½ to 1 inch across; leaves grey to green when young and rusty red when older.

•Small roots dangle beneath each leaf.

•The red phase resembles a *Euglena* bloom from a distance.

•Forms layer on surface that is at the will of the wind; may cover an entire pond if conditions are calm; heavy infestations can shade sunlight required for oxygen synthesis and fish productivity. Often found in association with duckweeds.

Non-native

Eichhornia crassipes
Water Hyacinth

Distinguishing Characteristics

•Each floating plant consists of several spongy leaf stalks that are bulbous and inflated at base; leaves are arranged in rosettes and are spade-shaped and curled upward on sides; leaves usually point upward.

•Plant roots feathery and finely-divided.

•Big, showy, light purple flower.

•Plants can group together, forming thick mats along the shoreline; on calm days, plants may scatter.

•When grouped along shoreline, resembles *Limnobium spongia*, but hyacinth plants are never rooted.

Lemna spp.
Duckweed

Distinguishing Characteristics

•Tiny floating plant of 2 to 3 joined fronds that are usually less than 1/8 – inches wide; fronds are often shoe-shaped.

•Each frond has a single root dangling below it.

•Forms layer on surface that is at the will of the wind; may cover an entire pond if conditions are calm; heavy infestations can shade sunlight required for oxygen synthesis and fish productivity.

Non-native

Pistia stratiotes
Water Lettuce

Distinguishing Characteristics

•Plants faint green with fine hairs covering surface of leaves; leaves arranged in rosettes; parallel leaf veins.

•Long, feathery roots.

•Plant resembles a head of cabbage.

•Plants can group together, forming thick mats along the shoreline; on calm days, plants may scatter.

Floating

Distinguishing Characteristics

•Tiny floating plant of 2 to 4 joined fronds that are usually more than 1/4 - inch wide; most fronds have a tiny red dot on one end; fronds egg-shaped to nearly round.

•Two or more roots dangle beneath each leaf frond.

•Forms layer on surface that is at the will of the wind; may cover an entire pond if conditions are calm; heavy infestations can shade sunlight required for oxygen synthesis and fish productivity. Often found in association with small duckweed.

Wolffia spp.
Watermeal

Distinguishing Characteristics

•Very tiny, rootless floating plant; slightly larger than a grain of sand.

•Resembles a blue-green algae bloom from a distance.

•Forms a layer on surface that is at the will of the wind; may cover an entire pond if conditions are calm; heavy infestations can shade sunlight required for oxygen synthesis and fish productivity. Often found in association with duckweeds.

Hydrodictyon spp.
Water Net Algae

Distinguishing Characteristics

•Filaments joined to form net-like shaped colonies; when water squeezed out, appears like a fish net or hair net.

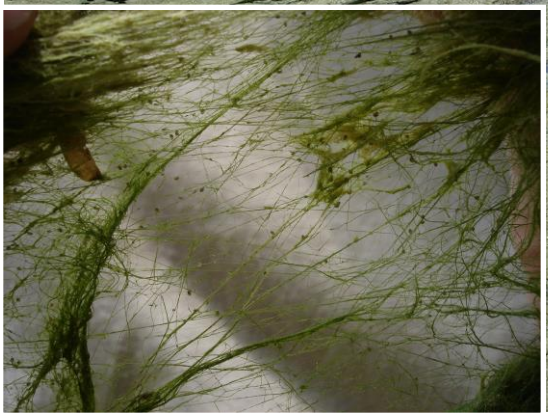
•Usually found in relatively high alkaline water.

•Forms thick floating mats on surface that are light to medium green.

Distinguishing Characteristics

- **Blue-green algae that is very thick and tough when pulled apart.**
- **Often has musty or foul odor.**
- **Usually found in relatively high alkaline water.**
- **Forms thick, floating mats that are usually dark green or nearly black; but color may become mottled with light green or even white later in summer.**

Pithophora spp.
Cotton Algae



Distinguishing Characteristics

•Course algae with branching filaments that appears like cotton when the water is squeezed out.

•When water squeezed out and pulled apart, it is evident that filaments are branching and tightly woven together like a web; branching also appears like "split ends" at the end of the filaments.

•Swollen reproductive cells called akinetes may also be visible when pulled apart.

•Forms thick floating mats or sheets that are usually yellowish to dull green.

Spirogyra spp.
Silk Algae

Distinguishing Characteristics

•Filaments very slippery; when algae removed from water, filaments form a fine point.

•Forms extensive floating mats that are usually grass green.

•Most abundant in early spring and usually dissipates by mid-summer.

Various spp.
Blue-green algae

Distinguishing Characteristics

- **Algae that forms a skim on the surface that can be light green, dark green, blue or even white.**
- **Usually found in fertile ponds.**
- **Often has a foul, sulfur odor.**

Planktonic

Distinguishing Characteristics

•Unicellular organism that has characteristics of both plant and animal.

•Some *Euglena* species have cells that are impregnated with red pigment (haematochrome) forming a rusty-brown to brick-red skim on the surface. Some of these species can then turn green during periods of intense sunlight. Other species are green all the time.

•Often found in ponds with high organic nutrient input from wastes of livestock, waterfowl, etc.

Various spp.
Green algae

Distinguishing Characteristics

- **Green algae free-floating in the water column; the water itself appears green.**
- **Directly related to water fertility and fish productivity.**

Planktonic