

Aquatic Plant Identification



Outline

- **Floating**
- Rooted with Floating leaves
- Submersed
- Emergent

Floating

- Duckweeds

- *Big or Giant duckweed*

Spirodela polyrrhiza

- 2 or more roots per leaflet
- Most leaflets with red dot at one end.



Graves Lovell – Alabama DCNR

- *Small or common duckweed*

Lemna minor

- One root per leaflet
- Leaflets shoe-shaped



Graves Lovell – Alabama DCNR

Floating

- Duckweeds

Star duckweed

Lemna trisulca

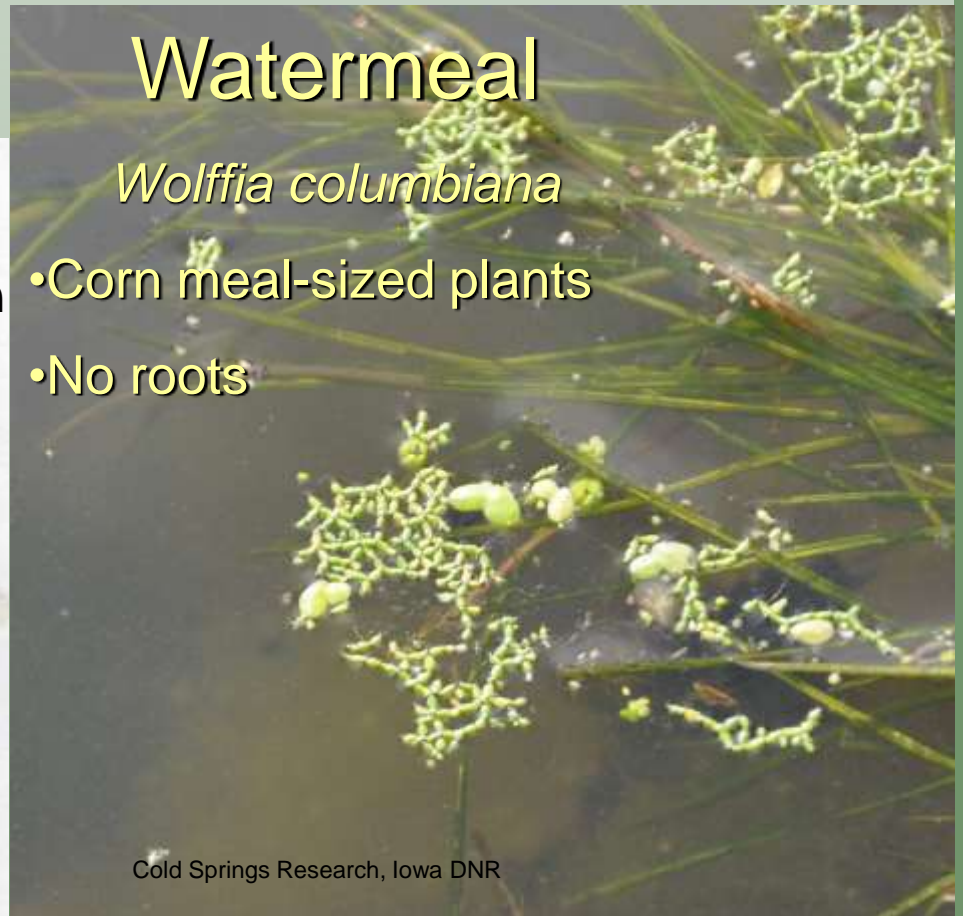
- Distinctive cross pattern



Watermeal

Wolffia columbiana

- Corn meal-sized plants
- No roots



Cold Springs Research, Iowa DNR

Floating

- Duckweeds

Star duckweed

Lemna trisulca

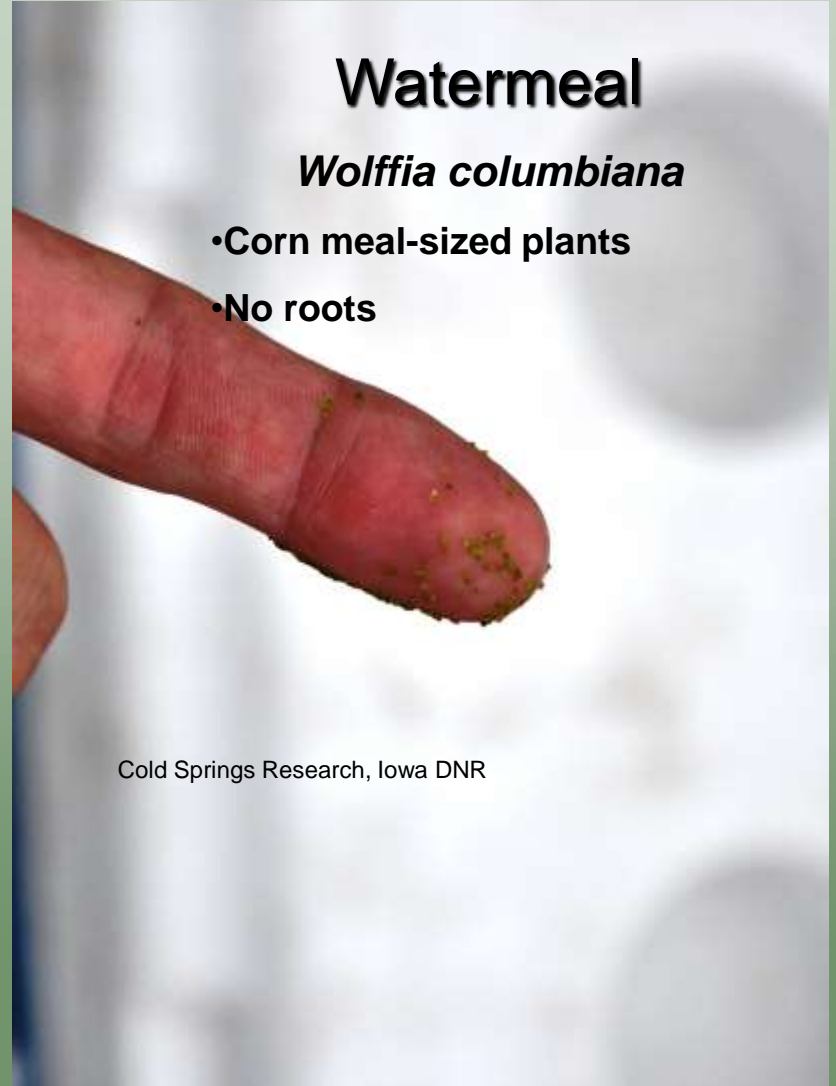
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Cold Springs Research, Iowa DNR

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Rooted with Floating-Leaves

Lilies

White waterlily

Nymphaea tuberosa

Nymphaea odorata

- Leaves round, split
- Leaf undersides green to pink



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- *Leaves round, split*
- *Leaf undersides green to pink*



Cold Springs Research, Iowa DNR

Rooted with Floating-Leaves

Lilies

White waterlily

Nymphaea tuberosa

Nymphaea odorata

- *Leaves round, split*
- *Leaf undersides green to pink*



Rooted with Floating-Leaves

Lilies

*Yellow waterlily or
spatterdock*

Nuphar lutea variegata

- *Leaves oval, split*
- *Leaf undersides green*
- *Floating or emergent leaf*



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Rooted with Floating-Leaves

Lilies

*Yellow waterlily or
spatterdock*

Nuphar lutea variegata

- Leaves oval, split
- Leaf undersides green
- Floating or emergent leaf



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Rooted with Floating-Leaves

Lilies

Lotus

Nelumbo lutea

- Floating or emergent leaf
- Leaves round, no split
- Can grow to 12' depth or more



Cold Springs Research – Iowa DNR

Rooted with Floating-Leaves

Lilies

Lotus

Nelumbo lutea

- Floating or emergent leaf
- Leaves round, no split
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Rooted with Floating-Leaves

Lilies

Watershield

Brasenia schreberi

- Leaf oval, no split
- Gelatinous leaf underside
- Flower small, dull purple



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Rooted with Floating-Leaves

Water Primrose

Ludwigia peploides

- Grows both as an emergent and floating-leaved.
- Opposite-leaved sometimes with reddish stem.
- Five-petaled yellow flower.
- Can easily become a nuisance.



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Outline

- Floating
 - Rooted with Floating leaves
 - **Submersed**
 - **Pondweeds without floating leaves**
 - Pondweeds with floating leaves
 - Narrow-leaved species
 - Tape- or ribbon-leaved species
 - Whorled leaf species
 - Dissected leaf species
 - Emergent
-

Submersed Leaves

Pondweeds without
floating leaves

Clasping leaf or
Richardson's
pondweed

Potamogeton richardsonii

- Leaf encircling stem
- Predominantly in natural lakes



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Submersed Leaves

Pondweeds without
floating leaves

Claspingleaf
pondweed

Potamogeton richardsonii

- Leaf encircling stem
- Predominantly in natural lakes



Submersed Leaves

Pondweeds without floating leaves

Curly pondweed

Potamogeton crispus

- Leaves toothed
- Leave edges usually wavy
- Invasive, introduced
- Wide-spread, common



Theresa Shay-Iowa DNR

Submersed Leaves

Pondweeds without floating leaves

Curly pondweed

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- Invasive, introduced
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Cold Springs Research, Iowa DNR

Submersed Leaves

Pondweeds without floating leaves

Curly pondweed

Potamogeton crispus

- Leaves toothed
- Leave edges usually wavy
- Invasive, introduced
- Wide-spread, common
- Produces overwintering turions



Joe Morris, Iowa State University

Submersed Leaves

Pondweeds without floating leaves

Illinois pondweed

Potamogeton illinoensis

- **Usually** without floating leaves
- Leaves attached directly to the stem or have short petiole
- Leaves not boat-shaped, recurved
- Predominantly in natural lakes



Submersed Leaves

Pondweeds without floating leaves

Illinois pondweed

Potamogeton illinoensis

- **Usually** without floating leaves
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Submersed and Floating Leaves

Pondweeds with floating leaves

Longleaf / American pondweed

Potamogeton nodosus

- Leaf petiole is long on floating and submersed leaf.
- Floating leaf not lobed or bent at base
- Leaves can be larger and rounder if growing in the shade
- Usually in water < 3'
- Widespread, common



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Submersed and Floating Leaves

Pondweeds

Floating Leaf pondweed

Potamogeton natans

- Floating leaf heart-shaped, or lobed at base.
- Stem bent at leaf base and lighter in color
- Submersed leaves absent or stiff & narrow.
- Can be in water deeper than 3'
- Predominantly in natural lakes



Cold Springs Research, Iowa DNR

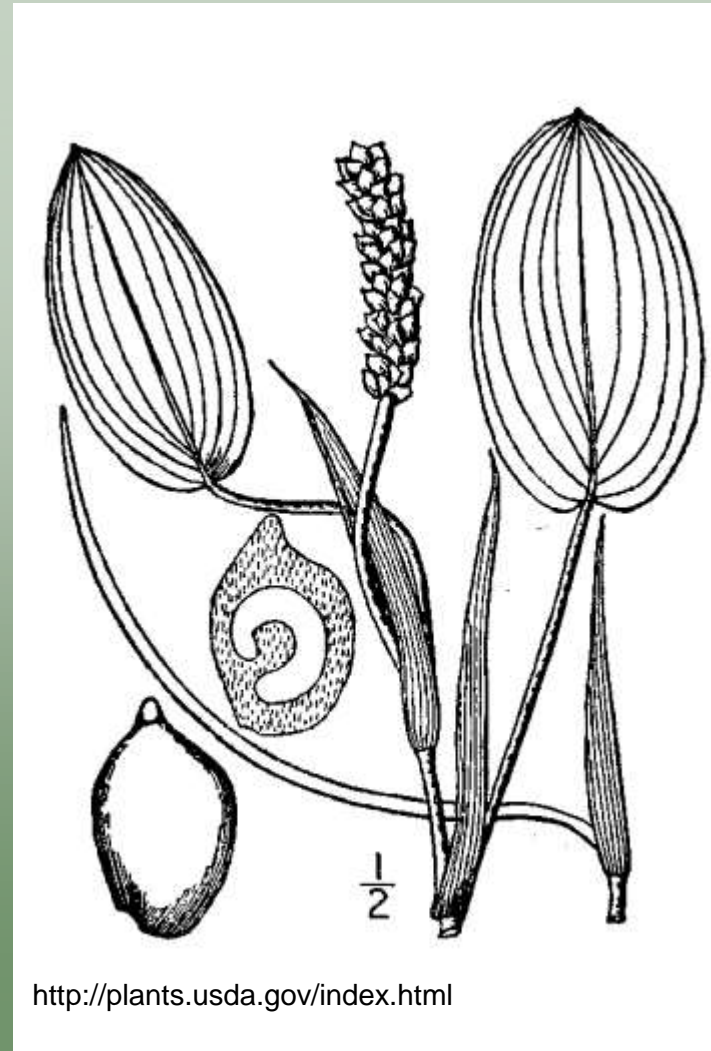
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Submersed and Floating Leaves

Pondweeds with floating leaves

Largeleaf pondweed

Potamogeton amplifolius

- Species of special concern in Iowa
- Oval floating leaf
- Submersed leaves can lack chlorophyll (brownish leaves)
- Submersed leaves boat-shaped, recurved.
- Predominantly in natural lakes



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Submersed Narrow-Leaved

Three Groups

- Pondweeds
 - Alternate leaved
 - Leaves with prominent mid-vein
 - Naiads
 - Opposite leaved
 - Leaves without prominent mid-vein
 - Leaves needle-like
 - No mid-vein visible
-

Submersed Narrow-Leaved

Three Groups

- **Pondweeds**

- **Alternate leaved**
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- **Naiads**

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- **Leaves without prominent mid-vein**

- **Leaves needle-like**

- **No mid-vein visible**

Submersed Narrow-Leaved

Pondweeds

Flatstem pondweed

Potamogeton zosteriformis

- Stem between leaves flattened, looks leaf-like.



Submersed Narrow-Leaved

Pondweeds

Flatstem pondweed

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- Leaf tips pointed



Submersed Narrow-Leaved

Pondweeds

Flatstem pondweed

Potamogeton zosteriformis

- Stem between leaves flattened, looks leaf-like
- Leaf tips pointed
- Leaves with 7 to 12 veins on each side of mid-vein



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Submersed Narrow-Leaved

Pondweeds

Leafy pondweed

Potamogeton foliosus

- Leaves with 1 or 2 veins on each side of mid-vein.



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Submersed Narrow-Leaved

Pondweeds

Leafy pondweed

Potamogeton foliosus

- Leaves with 1 or 2 veins on each side of mid-vein.
- Stem between leaves can be flattened, though not leaf-like.
- Flower and seeds on short stalk



Submersed Narrow-Leaved

Pondweeds

Leafy pondweed

Potamogeton foliosus

- Leaves with 1 or 2 veins on each side of mid-vein.
- Stem between leaves can be flattened, though not leaf-like.
- Flower and seeds on short stalk
- Seeds with a keel around edge
- Need short-stalked flower or seeds for positive ID, otherwise to genus.



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Submersed Narrow-Leaved

Pondweeds

Leafy pondweed

Potamogeton foliosus

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Submersed Narrow-Leaved

Pondweeds

Small pondweed

Potamogeton pusillus

- Stem and leaves very delicate. Hard to see individual leaves unless floating in water.
- Flower and seeds on long stalk



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Submersed Narrow-Leaved

Pondweeds

Small pondweed

Potamogeton pusillus

- Stem and leaves very delicate.
- Flower and seeds on long stalk
- Need seeds for positive ID, otherwise to genus
- Seeds smooth, without keel around edge



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Submersed Narrow-Leaved

Pondweeds

Small pondweed

Potamogeton pusillus

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Submersed Narrow-Leaved

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Submersed Narrow-Leaved

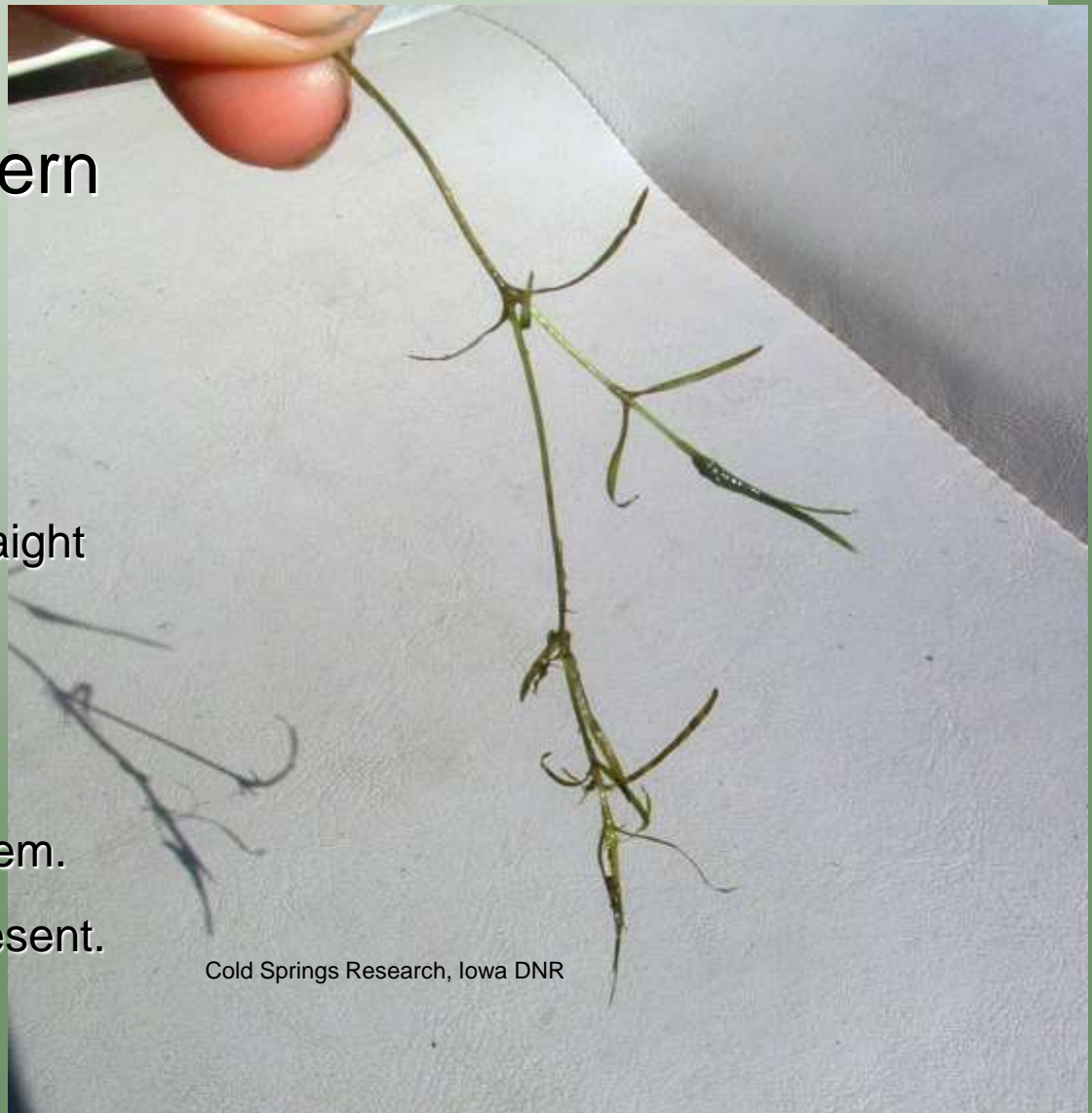
Naiads

Slender and Southern Naiad

Najas foliosus

Najas guadalupensis

- Leaves opposite, narrow, straight
- No distinct mid-vein
- Paintbrush appearance at growing tip
- Seeds at leaf nodes along stem.
- ID to genus unless seeds present.



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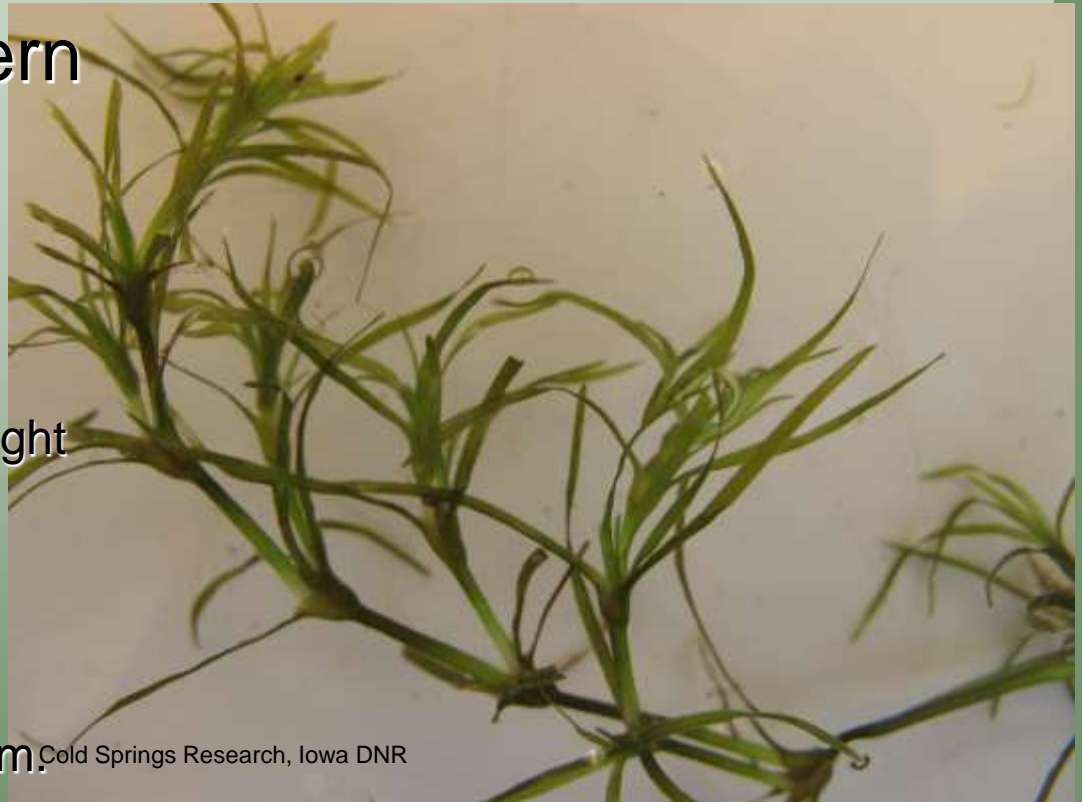
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Submersed Narrow-Leaved

Naiads

Brittle Naiad

Najas minor

- Leaves opposite
- No distinct mid-vein
- Leaves recurved, spines visible



Graves Lovell – Alabama DCNR

Submersed Narrow-Leaved

Naiads

Brittle Naiad

Najas minor

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- No distinct mid-vein
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Cold Springs Research – Iowa DNR

Submersed Narrow-Leaved

Naiads

Brittle Naiad

Najas minor

- Leaves opposite
- No distinct mid-vein
- Leaves recurved, spines visible
- Seeds shaped like a banana



Theresa Shay-Iowa DNR

Submersed Narrow-Leaved

Three Groups

- Pondweeds
 - Alternate leaved
 - Leaves with prominent mid-vein
- Naiads
 - Opposite leaved
 - Leaves without prominent mid-vein
- **Leaves needle-like**
 - **No mid-vein visible**

Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

- Leaves alternate, needle-like

Theresa Shay-Iowa DNR



Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

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Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

- Leaves alternate, needle-like
- Stem with zig-zag appearance



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Leaves needle-like

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Cold Springs Research, Iowa DNR

Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

- Leaves alternate, needle-like
- Stem with zig-zag appearance
- Bushy at plant growing tip
- Seed head “string of pearls”.



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Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

- Leaves alternate, needle-like
- Stem with zig-zag appearance
- Bushy at plant growing tip
- Seed head “string of pearls”.
- Leaf attached to stipular sheath which encircles the stem.



Sheath encircling stem.

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Submersed Narrow-Leaved

Leaves needle-like

Sago Pondweed

Stuckenia pectinata

- Leaves alternate, needle-like
- Stem with zig-zag appearance
- Bushy at plant growing tip
- Seed head “string of pearls”.
- Leaf with long sheath around stem



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Submersed Narrow-Leaved

Leaves needle-like

Horned Pondweed

Zannichellia palustris

- Leaves opposite, needle-like
- White stem between leaf nodes (looks like root)
- Pointy seeds at leaf *nodes*
- *Widespread*



Submersed Narrow-Leaved

Leaves needle-like Horned Pondweed

Zannichellia palustris

- Leaves opposite, needle-like
- White stem between leaf nodes (looks like root)
- Pointy seeds at leaf *nodes*
- *Widespread*



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 - Rooted with Floating leaves
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 - Narrow-leaved species
 - **Tape- or ribbon-leaved species**
 - Whorled leaf species
 - Dissected leaf species
 - Emergent
-

Submersed Tape-Leaved

Leaves tape- or
ribbon-like
Wild Celery

Vallisneria americana

- Leaves all from a basal rosette
- Reproduces by daughter plants on a stolon.



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Submersed Tape-Leaved

Leaves tape- or
ribbon-like
Wild Celery

Vallisneria americana

- Leaves all from a basal rosette
- Reproduces by daughter plants on a stolon.
- Bands of “lacunae”, air spaces on leaf.
- Leaf edge with small hairs
- Flowers born on coiled stalks
- Predominantly in natural lakes



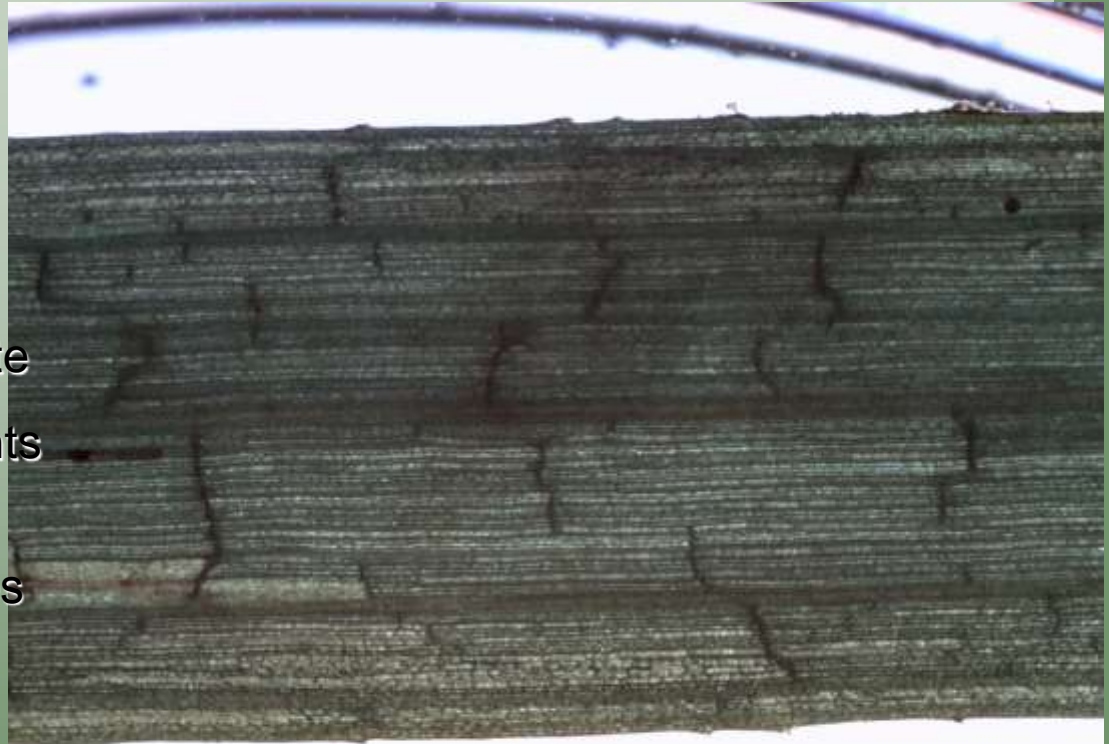
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Submersed Tape-Leaved

Leaves tape- or ribbon-like Wild Celery

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Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Water Stargrass

Heteranthera dubia

- Small, yellow six-petaled flower
above surface



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Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Water Stargrass

Heteranthera dubia

- Small, yellow six-petaled flower above surface
- Leaves **do not** originate from a basal rosette
- Alternately branched



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Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Water Stargrass

Heteranthera dubia

- Small, yellow six-petaled flower above surface
- Leaves do not originate from a basal rosette
- Alternately branched
- Roots common at leaf nodes



Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Water Stargrass

Heteranthera dubia

- Small, yellow six-petaled flower above surface
- Leaves do not originate from a basal rosette
- Alternately branched
- Roots common at leaf nodes
- Can withstand drawdown.
- Widespread



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Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Flatstem pondweed

Potamogeton zosteriformis

- Leaf with distinct mid-vein
- Stem between leaves flattened, looks leaf-like
- Leaf tips pointed
- Leaves with 7 to 12 veins on each side of mid-vein
- Predominantly in natural lakes



Submersed Tape-Leaved

Leaves tape- or
ribbon-like
Arrowhead

Sagittaria spp.

- Underwater growth form
- Leaves form a basal rosette
- Thicker leaves
- No bands of lacunae through the leaf or hairs at leaf edge
- Roots usually with a reddish coating.
- Widespread



Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Upright Burrhead

Echinodorus berteroi

- Leaves from a basal rosette
- Underwater leaves wavy, ribbon-like



Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Upright Burrhead

Echinodorus berteroi

- Leaves form a basal rosette
- Underwater leaves wavy, ribbon-like
- Also has emergent leaves



Submersed Tape-Leaved

Leaves tape- or
ribbon-like

Upright Burrhead

Echinodorus berteroi

- Leaves form a basal rosette
- Underwater-leaves wavy, ribbon-like
- Also has emergent leaves.
- Distinct seed head
- Widespread, uncommon



Cold Springs Research, Iowa DNR

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 - Dissected leaf species
 - Emergent
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Submersed Whorled-Leaf

Leaves whorled Coontail

Ceratophyllum demersum

- 5-12 leaflets per whorl
- Leaflets dichotomously forked
- Leaflets toothed
- Widespread, common



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Submersed Whorled-Leaf Coontail

Leaves whorled
Coontail

Ceratophyllum demersum

- 5-12 leaflets per whorl
- Leaflets dichotomously forked
- Leaflets toothed
- Widespread, common



Theresa Shay-Iowa DNR

Submersed Whorled-Leaf

Leaves whorled Coontail

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- Widespread, common



Cold Springs Research – Iowa DNR

Submersed Whorled-Leaf

Leaves whorled

Elodea

Elodea canadensis

- Leaflets in whorls of 2-3
- Flowers on a root-like stalk
- Widespread



Cold Springs Research – Iowa DNR

Submersed Whorled-Leaf

Leaves whorled
Elodea

Elodea canadensis

- Leaflets in whorls of 2-3
- Flowers on a root-like stalk
- Widespread



Theresa Shay-Iowa DNR

Submersed Whorled-Leaf

Leaves whorled

Muskgrass

Chara vulgaris

- Macrophytic algae, no true leaves
- Gritty feel, musky odor
- Leaflets **not** dichotomously branched like coontail or recurved like brittle naiad.



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Submersed Whorled-Leaf

Leaves whorled

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Submersed Whorled-Leaf

Leaves whorled

Northern Watermilfoil

Myriophyllum sibiricum

- Predominantly in natural lakes
- Leaves with 5-10 leaflet pairs
- Leaves can be rigid
- Leaflets not toothed



Submersed Whorled-Leaf

Leaves whorled

Northern Watermilfoil

Myriophyllum sibiricum

- Predominantly in natural lakes
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- Leaflets not toothed



Kim Bogenschutz – Iowa DNR

Submersed Whorled-Leaf

Leaves whorled

Eurasian Watermilfoil

Myriophyllum spicatum

- Widespread, invasive
- *More than 12 leaflet pairs*
- Leaflets not toothed
- Leaves limp
- Stem sometimes with reddish tint



Theresa Shay-Iowa DNR

Submersed Whorled-Leaf

Leaves whorled

Eurasian Watermilfoil

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Graves Lovell – Alabama DCNR

Submersed Whorled-Leaf

Leaves whorled

Hydrilla

Hydrilla verticillata

- Leaflets in whorls of 4-6
- Prickles along mid-vein of leaf
- Invasive.
- Not documented in Iowa.



Graves Lovell – Alabama DCNR

Submersed Whorled-Leaf

Leaves whorled

Brazilian elodea

Egeria densa

- Leaflets in whorls of 4-8
- Invasive.
- Not documented in Iowa.



Barry Meyers-Rice / The Nature Conservancy

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Submersed Dissected Leaves

Leaves dissected

Whitewater or threadleaf crowfoot

Ranunculus trichophyllus

- Dissected leaves alternately branched
- Stem hollow
- Leaves smooth, not toothed
- Widespread, most common in natural lakes and some streams.



Cold Springs Research – IA DNR

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Submersed Dissected Leaves

Leaves dissected

Whitewater crowfoot

Ranunculus aquatilis

- Dissected leaves alternately branched
- Stem hollow
- Leaves smooth, not toothed
- Widespread, most common in natural lakes and some streams.
- Has a white, 5-petaled flower



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Submersed Dissected Leaves

Leaves dissected

Fanwort

Cabomba caroliniana

- Dissected leaves opposite
- Multiple forks per leaflet , smooth
- Invasive, not currently known in Iowa.
- Found in MO, IL and popular in water gardens.



Graves Lovell – Alabama DCNR

Submersed Dissected Leaves

Leaves dissected

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- Found in MO, IL and popular in water gardens.



Graves Lovell – Alabama DCNR

Submersed Dissected Leaves

Leaves dissected

Bladderwort

Utricularia macrorhiza

- Highly dissected leaves
- Air-filled bladders scattered throughout.
- Widespread, most common in natural lakes.



Theresa Shay-Iowa DNR

Outline

- Floating
- Rooted with Floating leaves
- Submersed
- **Emergent**

Emergent

Leaf Cross- Sections



Cattail Leaf
(*Typha*)



Burreed Leaf
(*Sparganium*)



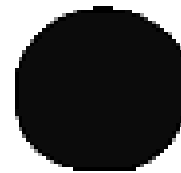
Iris Leaf
(*Iris*)



Sweet Flag Leaf
(*Acorus*)



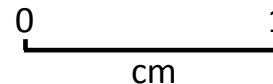
Sedge Stem
(*Carex, Scirpus*)



Bulrush Stem
(*Schoenoplectus*)



Grass Stem
(*Gramineae*)



Emergent

Cattails

Broad-leaved Cattail

Typha latifolia

- Widespread, native.
- 1-3 m high
- Leaves D-shaped in cross section



Emergent

Cattails

Broad-leaved Cattail

Typha latifolia

- Widespread, native.
- 1-3 m high
- Leaves D-shaped in cross section
- Leaves 10-20 mm wide, with slight twist, spreading by rhizome.



Emergent

Cattails

Broad-leaved Cattail

Typha latifolia

- Widespread, native.
- 1-3 m high
- Leaves D-shaped in cross section
- Leaves 10-20 mm wide, with slight twist, spreading by rhizome.
- The upper and lower portions of the spike are continuous or nearly so.
- Lower portion of the spike is less than 15 cm (6 in) in length.



Steve D. Eggers

Emergent

Cattails

Narrow-leaved Cattail

Typha angustifolia

- Widespread, introduced.
- 1-3 m high
- Leaves D-shaped in cross section
- Leaves 4-12 mm wide with slight twist, spreading by rhizome.
- The upper and lower portions of the spike are separated by ≥ 2 cm
- Lower portion of the spike is less than 15 cm (6 in) in length.



Steve D. Eggers

Emergent

Cattails

Hybrid Cattail

Typha x glauca

- Widespread, introduced.
- 3-4 m high
- The upper and lower portions of the spike are separated by up to 4 cm
- Lower portion of the spike is often over 15 cm (6 in) in length.



Steve D. Eggers

Emergent

Cattails

Hybrid Cattail

Typha x glauca

- Widespread, introduced.
- 3-4 m high
- The upper and lower portions of the spike are separated by up to 4 cm
- Lower portion of the spike is often over 15 cm (6 in) in length, though variable (spikes in this photo were all collected from the same stand).



Cold Springs Research, Iowa DNR

Emergent

Sweetflag

Acorus americanus

- Uncommon.
- Cattail-like leaves, off-center mid-rib, can be wavy on one side.
- Up to 2 m tall



Cold Springs Research, Iowa DNR

Emergent

Sweetflag

Acorus americanus

- Uncommon.
- Cattail-like leaves, off-center mid-rib, can be wavy on one side.
- Up to 2 m tall
- Three-angled flowering stem, 20-60 cm reproductive spath
- Sweet scent when leaves are crushed



Emergent

Blue Flag Iris

Iris versicolor

- Leaves overlapping at the base of the plant, fan-like.
- Perennial, 10-80 cm high.
- Flowering May to July.
- Flowers light to deep blue



Cold Springs Research, Iowa DNR

Emergent

Softstem Bulrush

Schoenoplectus tabernaemontani

- Found in shallow waters and along water body margins.
- Spreads by rhizomes.



Cold Springs Research, Iowa DNR

Emergent

Softstem Bulrush

Schoenoplectus tabernaemontani

- Found in shallow waters and along water body margins.
- Spreads by rhizomes.
- Stems from 1 to 3 m tall, round, easily crushed.

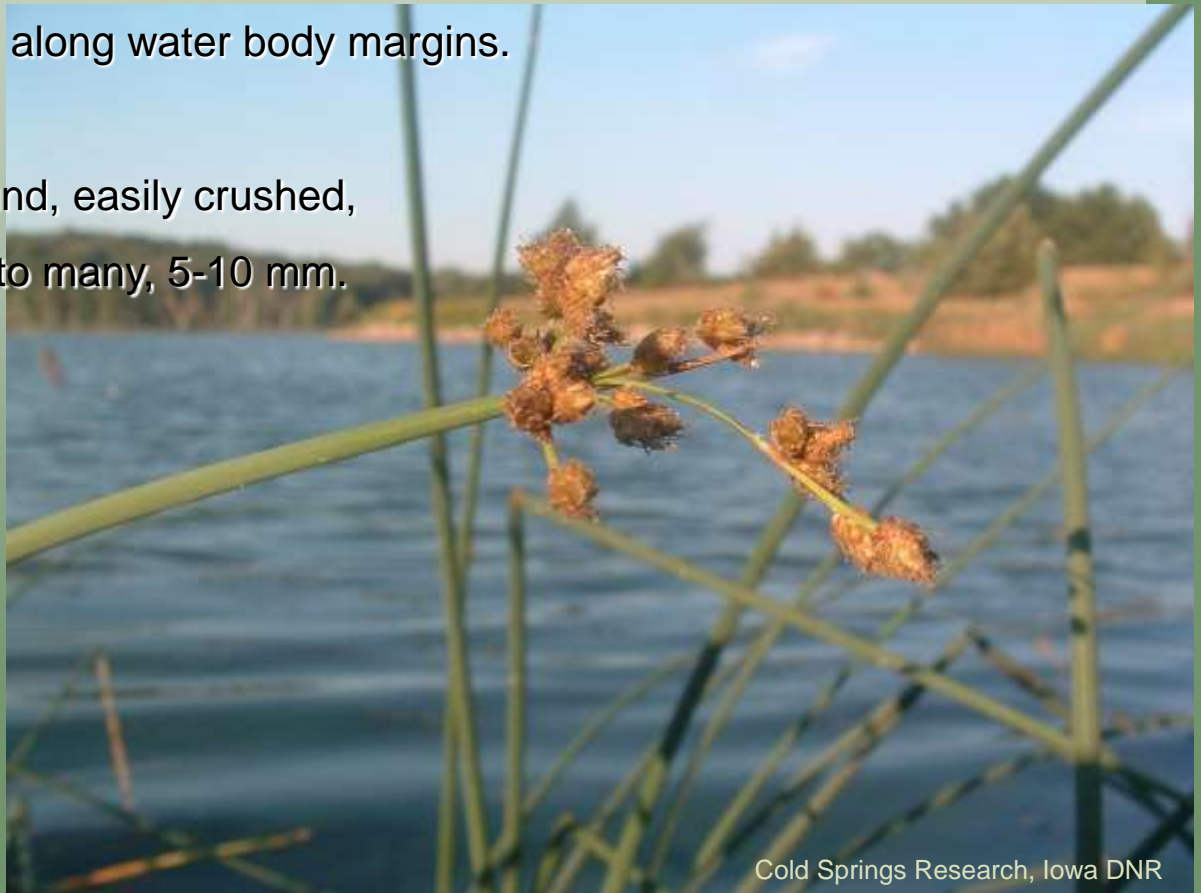


Emergent

Softstem Bulrush

Schoenoplectus tabernaemontani

- Found in shallow waters and along water body margins.
- Spreads by rhizomes.
- Stems from 1 to 3 m tall, round, easily crushed,
- Perennial, spikelets several to many, 5-10 mm.

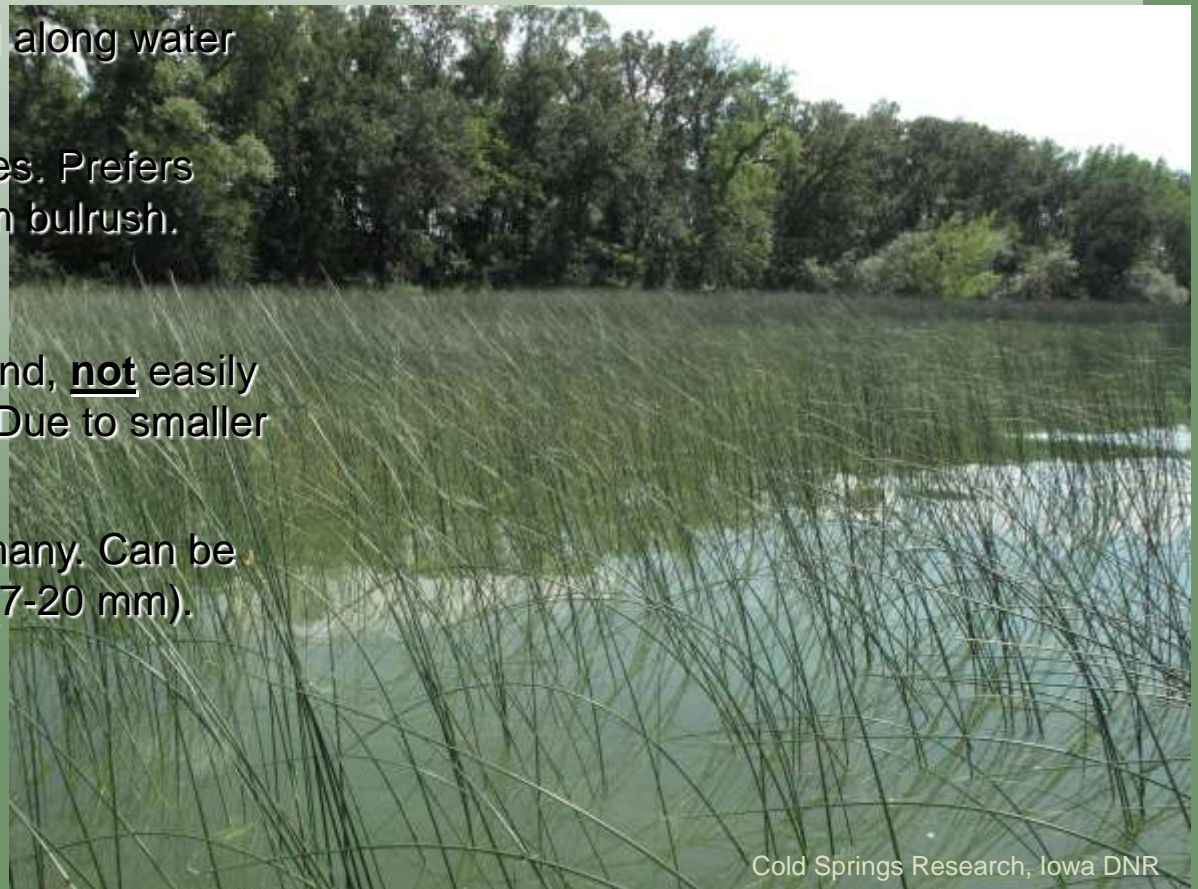


Emergent

Hardstem Bulrush

Schoenoplectus acutus

- Found in shallow waters and along water body margins.
- Predominately in natural lakes. Prefers harder substrate than softstem bulrush.
- Spreads by rhizomes.
- Stems from 1 to 4 m tall, round, not easily crushed as softstem bulrush. Due to smaller chambered stem
- Perennial, spikelets one to many. Can be longer than softstem bulrush (7-20 mm).



Emergent

River Bulrush

Schoenoplectus fluviatilis

- Generally occurring in dense stands.
- Plants up to 2 m.



Cold Springs Research, Iowa DNR

Emergent

River Bulrush

Schoenoplectus fluviatilis

- Generally occurring in dense stands.
- Plants up to 2 m.
- Triangular stems have opposite leaves.



Emergent

River Bulrush

Schoenoplectus fluviatilis

- Generally occurring in dense stands.
- Plants up to 2 m.
- Triangular stems have opposite leaves.
- Leaf cross section M-shaped.



Emergent

Spikerush

Eleocharis spp.

- Common in shallow waters and along water body margins.
- Perennial, stems round to square, appearance grass-like.
- Stems solitary or in clusters.
- Spread by rhizomes.
- Seed heads are lance- to ovate-shaped spikelets borne terminally on the stem

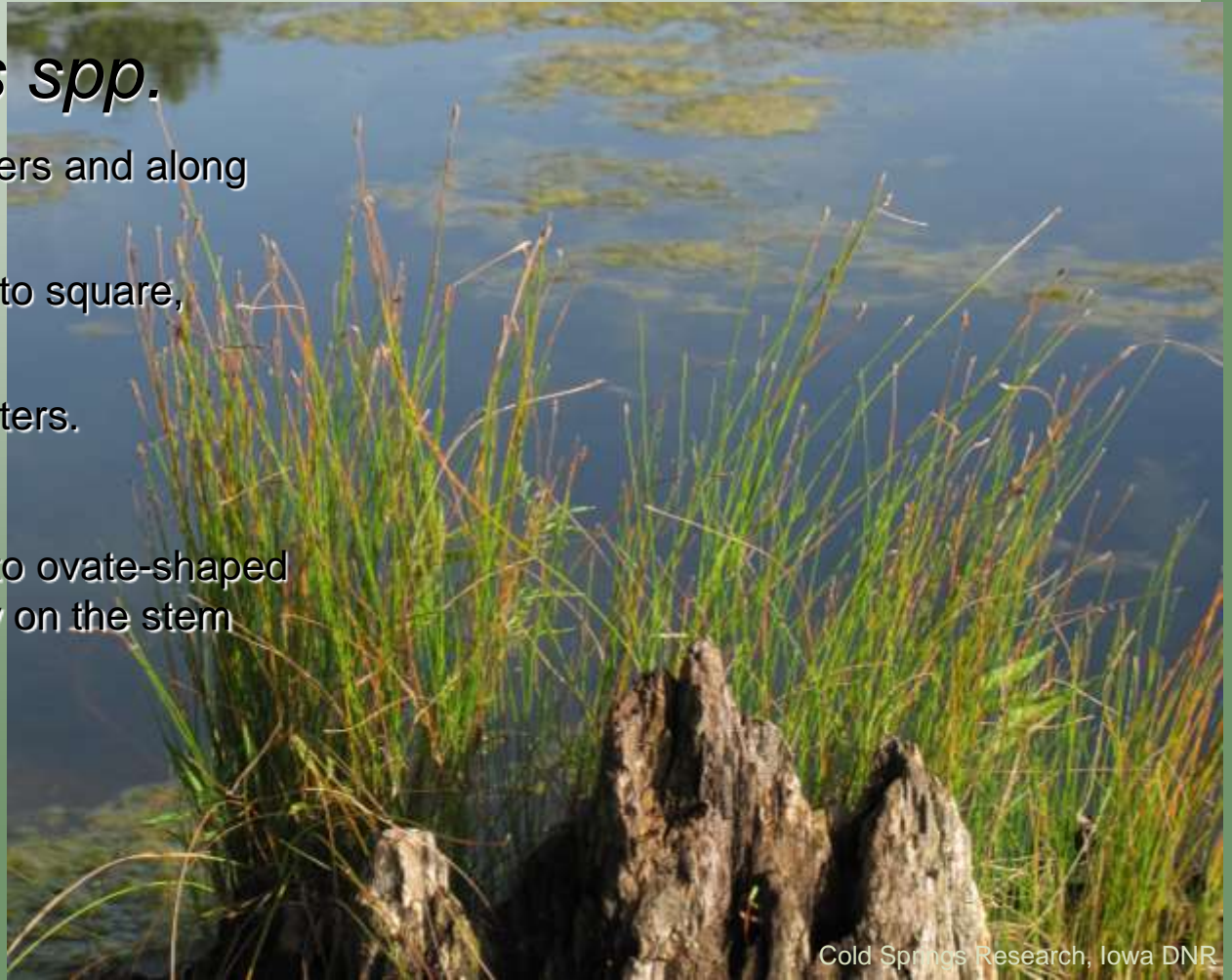


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Emergent

Water Horsetail

Equisetum fluviatile

- Stem round and jointed, comes apart easily at the nodes. Central cavity is 80% of the stem.
- Sheaths with upward-pointing black teeth encircle the stem at each node.
- Branching may occur at the nodes.
- Fertile stems have a terminal cone.



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Emergent

Reed Canarygrass

Phalaris arundinacea

- The most common shoreline plant in constructed lakes.
- Grows in thick monocultures.



Cold Springs Research, Iowa DNR

Emergent

Reed Canarygrass

Phalaris arundinacea

- The most common shoreline plant in constructed lakes.
- Grows in thick monocultures.
- Seed head thick, branched.



Cold Springs Research, Iowa DNR

Emergent

Arrowheads *Sagittaria* spp.

- There are many species
- Different leaf form when underwater, roots reddish



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Emergent

Arrowheads *Sagittaria spp.*

- All with 3-petaled white flower June - September.



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Emergent

Arrowheads

Broad-leaved
Arrowhead

Sagittaria latifolia



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Emergent

Arrowheads

Grass-leaved Arrowhead

Sagittaria graminea

- *Leaf lance-shaped*



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Emergent

Pickerelweed

Pontederia cordata

- Locally abundant in shallow waters and along water body margins.
- Perennial, similar to arrowhead in growth form.
- Flowers purple, borne on a spike.
- Leaves heart-shaped.



Cold Springs Research, Iowa DNR

Emergent

Pickerelweed

Pontederia cordata

- Locally abundant in shallow waters and along water body margins.
- Perennial, similar to arrowhead in growth form.
- Flowers purple, borne on a spike
- Leaves heart-shaped.



Emergent

Marsh Milkweed

Asclepias incarnata

- Erect stems have opposite leaves that can be lance-shaped, linear or oblong on short stalks.
- Opposite-leaved.
- Pink to red flowers borne on an umbel.
- Fruit is a long, smooth, narrow pod.



Emergent

Water Willow

Justicia americana

- Opposite leaved perennial.
- State-endangered.



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Emergent

Water Willow

Justicia americana

- Opposite leaved perennial.
- State-endangered.
- Stems with raised parallel ribs



Cold Springs Research, Iowa DNR

Emergent

Water Willow

Justicia americana

- Opposite leaved perennial.
- State-endangered.
- Stems with raised, parallel ribs
- Light purple flowers in summer



Emergent

Water Smartweed

Polygonum amphibium

- Alternate-leaved with reddish stem.
- Stems swollen at each leaf node.
- The pink flowers are on a terminal spike.



Emergent

Purple loosestrife

Lythrum salicaria

- Widespread, introduced, invasive.
- Purple, six-petaled flowers
- 60-200 cm high
- Square stems with opposite leaves



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Emergent

Jewel Weed

Impatiens capensis

- Common along lake margins, wet and moist soil.
- Annual, alternate leaved, .
- Flowers yellow to orange with brown spots



Cold Springs Research, Iowa DNR

Emergent

Jewel Weed

Impatiens capensis

- Common along lake margins, wet and moist soil.
- Annual, alternate leaved, .
- Flowers yellow to orange with brown spots
- Capsule fruit that pops open when touched.



Cold Springs Research, Iowa DNR