

What Plants are Growing in the Lake?

2023 LAKES CONGRESS
MEREDITH, NEW HAMPSHIRE
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Overview of Topics

Common aquatic
plant assemblages

A quick review of
invasive plants

Questions

Common Aquatic Plants in our Lakes

THESE ARE PRESENT IN JUST ABOUT EVERY LAKE!

Aquatic Plant Generalizations

There are about a dozen (+/-) plants that are in just about every waterbody in New Hampshire, forming the “backbone” of aquatic plant assemblages

Most lakes have about one dozen to a few dozen different aquatic plant species in them

Higher plant diversity and abundance is common in lakes that are more advanced along the “eutrophication” spectrum

There are always nuances to plant populations related to size, depth, chemistry, bottom substrate and more.

Ubiquitous Plants

Emergent

- Cattails
- Pickerelweed
- Arrowhead
- Bur-reed
- Grasses/rushes/
sedges

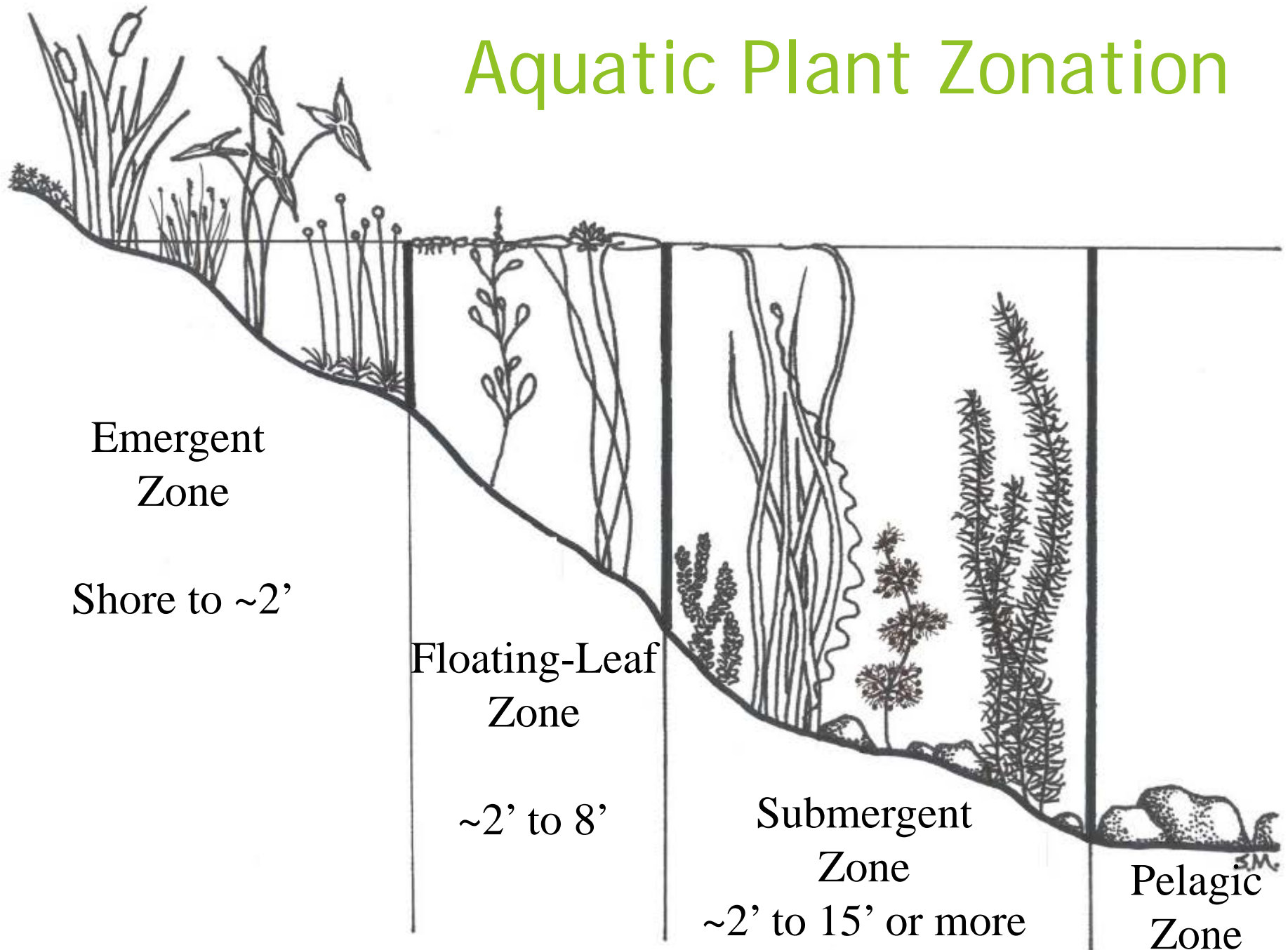
Floating

- White water lily
- Yellow water lily
- Floating heart
- Watershield
- Pondweed(s)

Submergent

- Bladderwort(s)
- Pondweed(s)- again
- Waterweeds
- Naiads
- Grassy spike rush

Aquatic Plant Zonation



Zonation in the lake

Emergents

Floating

Submersed



Emergent Plants



Cattails



Pickerelweed



Arrowhead



Bur-reed



Grasses



Sedges

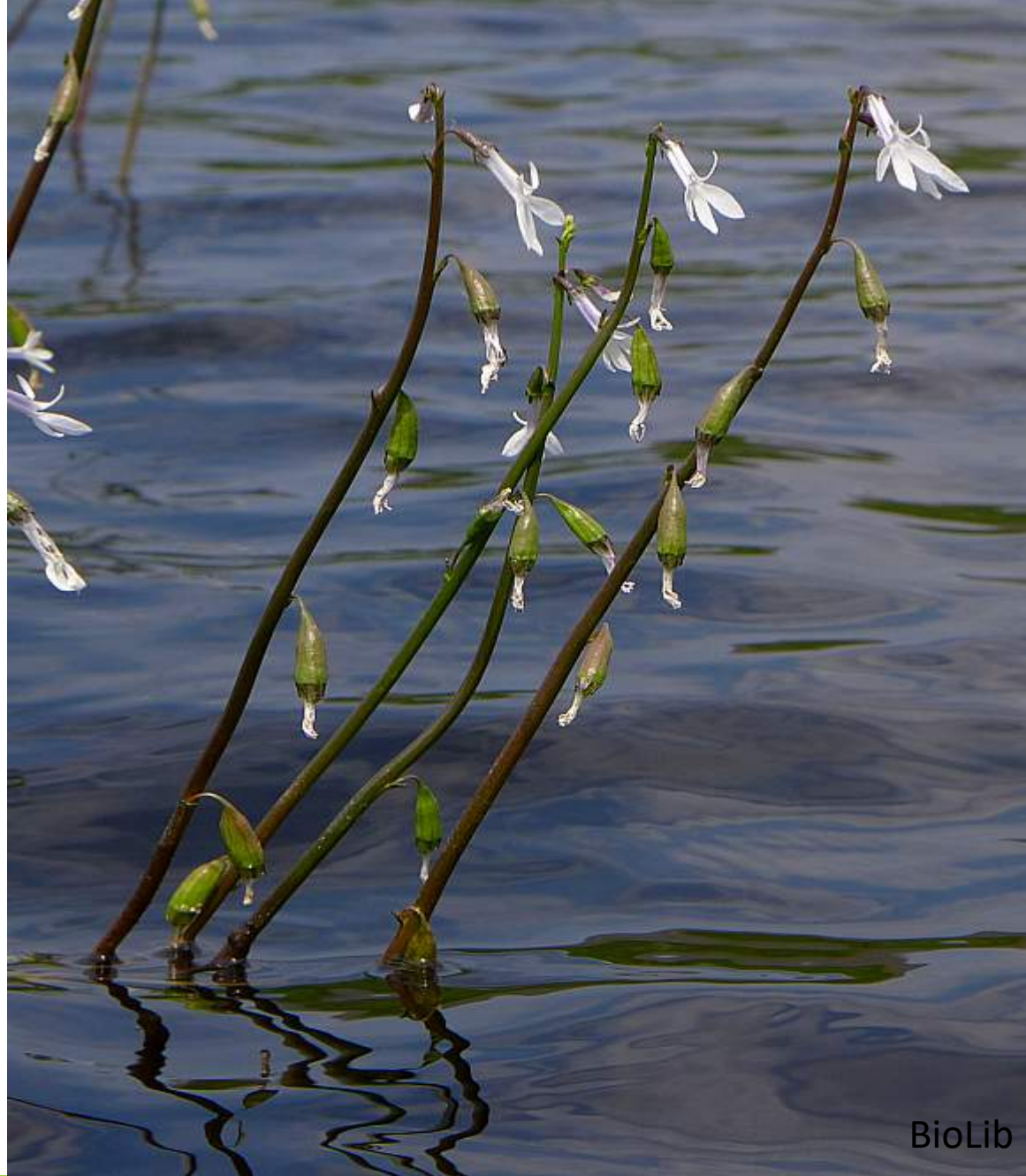


Rushes

Most lake edges have a mix of grasses, rushes and sedges

Pipewort





Water lobelia

Floating Plants



White water lily



Yellow water lily



Floating heart (white flower)



Watershield



Snail seed pondweed



Large-leaf pondweed



Much of the
time the
floating
plants will
form a mosaic
of mixed
species on
the surface

(yellow water lily and
watershield shown here)

Submergent Plants



07/05/2013

Whorled bladderwort



Large bladderwort

A focus on bladderworts



Bladderwort is a very common native plant, most often confused for variable milfoil.

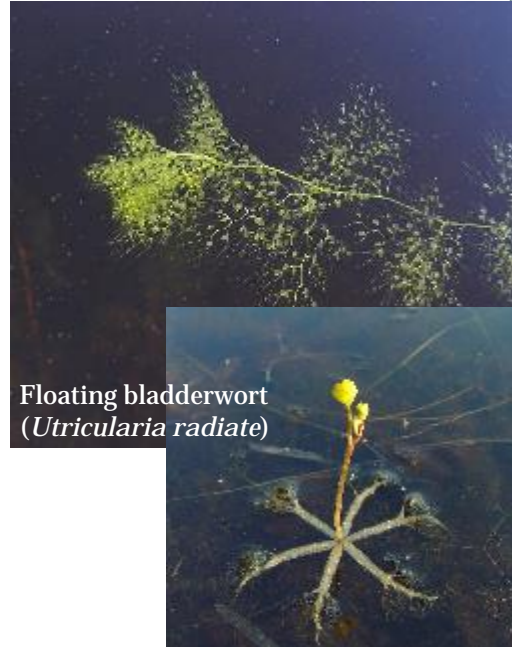
Large bladderwort
Utricularia vulgaris



Large bladderwort
Utricularia vulgaris



Floating bladderwort
(*Utricularia radiata*)



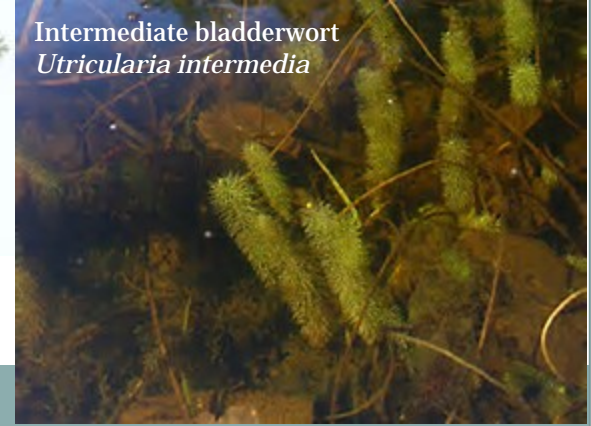
Intermediate bladderwort
Utricularia intermedia



Whorled bladderwort
Utricularia purpurea



Intermediate bladderwort
Utricularia intermedia



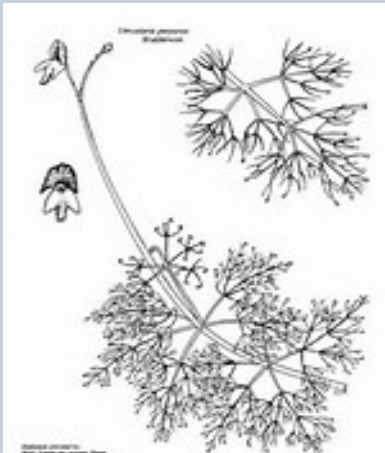
To be sure, check the leaves!



- Bladderwort leaves are more branching or forking, and usually have green, black, or clear “bladders” on them. They alternate.
- Milfoil leaves look like a feather and have no bladders (but beware of the algae globs! Variable milfoil leaves are in whorls).
- *When in doubt, collect a voucher for NHDES.*



Variable milfoil leaf whorl and single leaf. Note feather-like appearance.



Whorled bladderwort leaves can whorl around the stem, but they are branching, not feather-like.



Large bladderwort leaf with black bladders. Notice it appears like a feather, but not a true feather. It is lacier and branching at the tip.



Large bladderwort leaf that lost bladders. Notice it appears like a feather, but not a true feather. It is lacier and branching at the tip.



Intermediate bladderwort leaves are alternate along stem. Bladders are on a separate stem.



2017 © Peter M. Dziuk

Bassweed pondweed – very common in NH



Wikipedia

Plants of the world online

Claspingleaf pondweed



2017 © Peter M. Dziuk

Robbins pondweed



Grassy pondweed – a mix of floating and underwater leaves

(C) Paul Skawinski, 2009

adensis

E. nuttallii

Waterweeds
– two
different
species

Water naiads

(C) Paul Skawinski, 2009



Thread-like naiad



Go Botany

Nodding water nymph



Native milfoil(s) – 6 native species, this one most common (*M. humile*)

Aquatic Moss

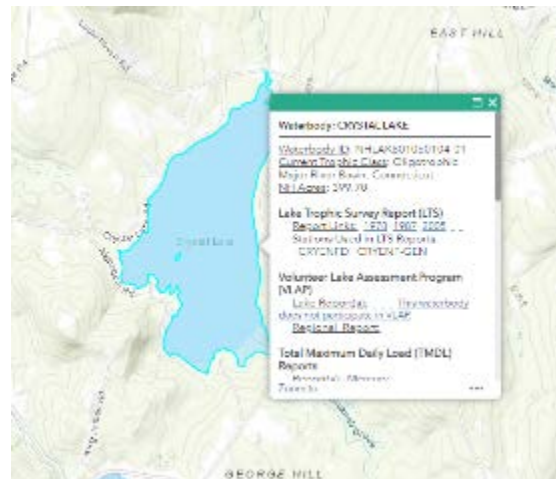
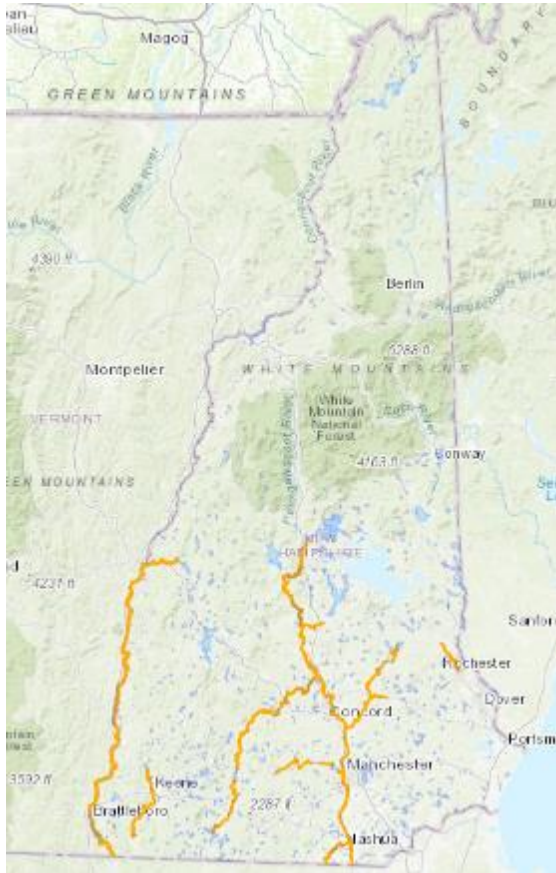


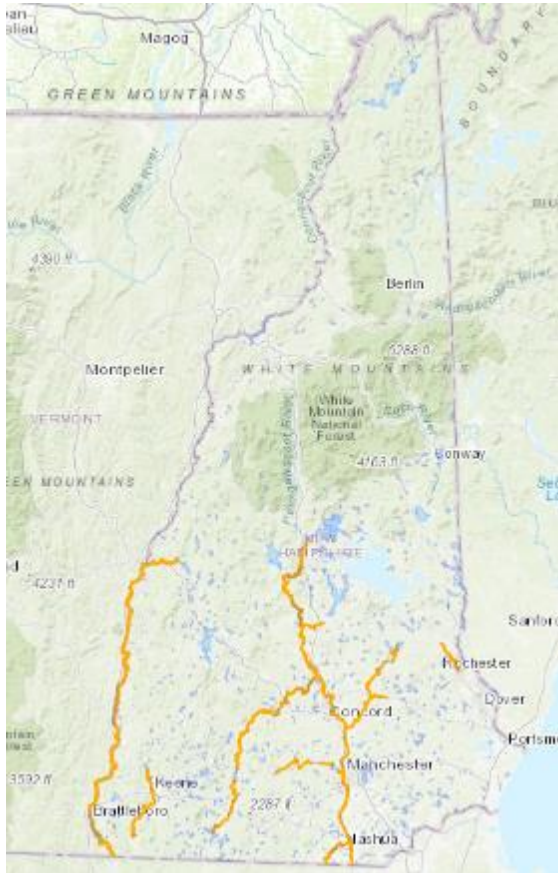
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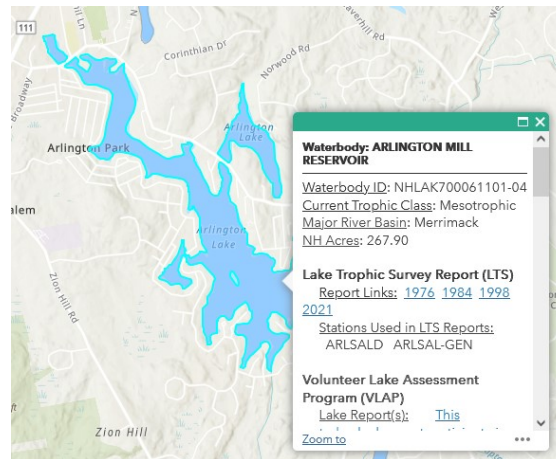
Finding plant lists for your lake

- Most waterbodies greater than 10 acres in size have had biologist visits, which include plant surveys
- To find your lake's map (and lake assessment reports), visit the NHDES "Lake Mapper" App
- Simply go online and type "NHDES Lake Mapper" into your search engine, or visit <https://www.arcgis.com/apps/webappviewer/index.html?id=1f45dc20877b4b959239b8a4a60ef540>

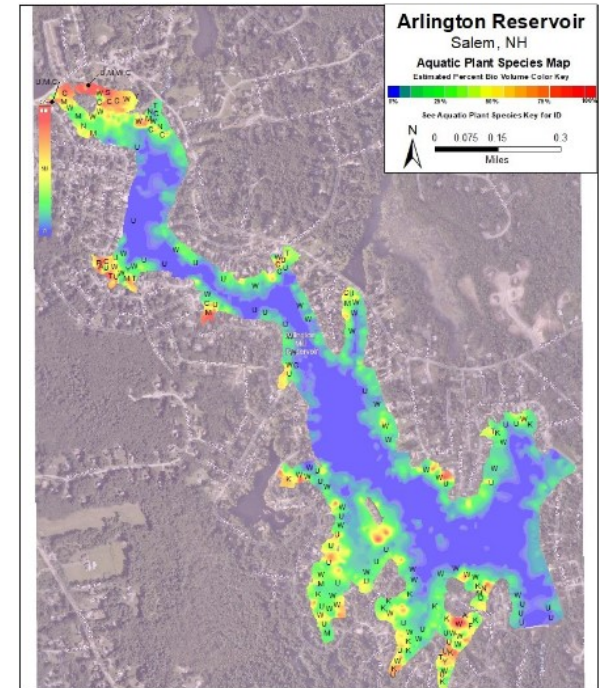




NHDES Lake Mapper State View



Zoomed in on a lake with
dialogue box showing
report options



Plant map from
Lake Assessment Report

More generalizations about aquatic plant communities

Native aquatic plant communities are fairly stable for many years in a waterbody (species, distribution, etc), but they do tend to “creep” outward and expand slowly, taking up more space. This is normal.

Some plants have boom and bust years, meaning that they can be bigger, more widespread and more obvious one year, and then less the next...this happens a lot with bladderworts and waterweeds

Help with Identification


If you find something that you would like identified:

- Take a digital picture of the plant in the lake, and then scoop some out and take a picture of it on a piece of white paper/paper towel, and email that to Amy.Smagula@des.nh.gov
- Hold on to the specimen (in a jar or bag in the fridge) until you receive an email back with an identification....we may need the actual plant to look at more closely to do an identification, or verify ID with DNA.

Aquatic Invasive Plants

Key Species of Concern

Emergent/Shoreline Plants

A photograph of several tall, slender purple loosestrife plants. The plants have green, lance-shaped leaves and long, upright stems topped with dense, elongated spikes of small, bright purple flowers. The background is a soft-focus green, suggesting a natural habitat.

Stalks of small purple flowers form in July and persist until September. One plant can produce up to 2.5 million seeds.

Leaves opposite or whorled on a square stiff stem, rooted in moist, not wet or standing water soils

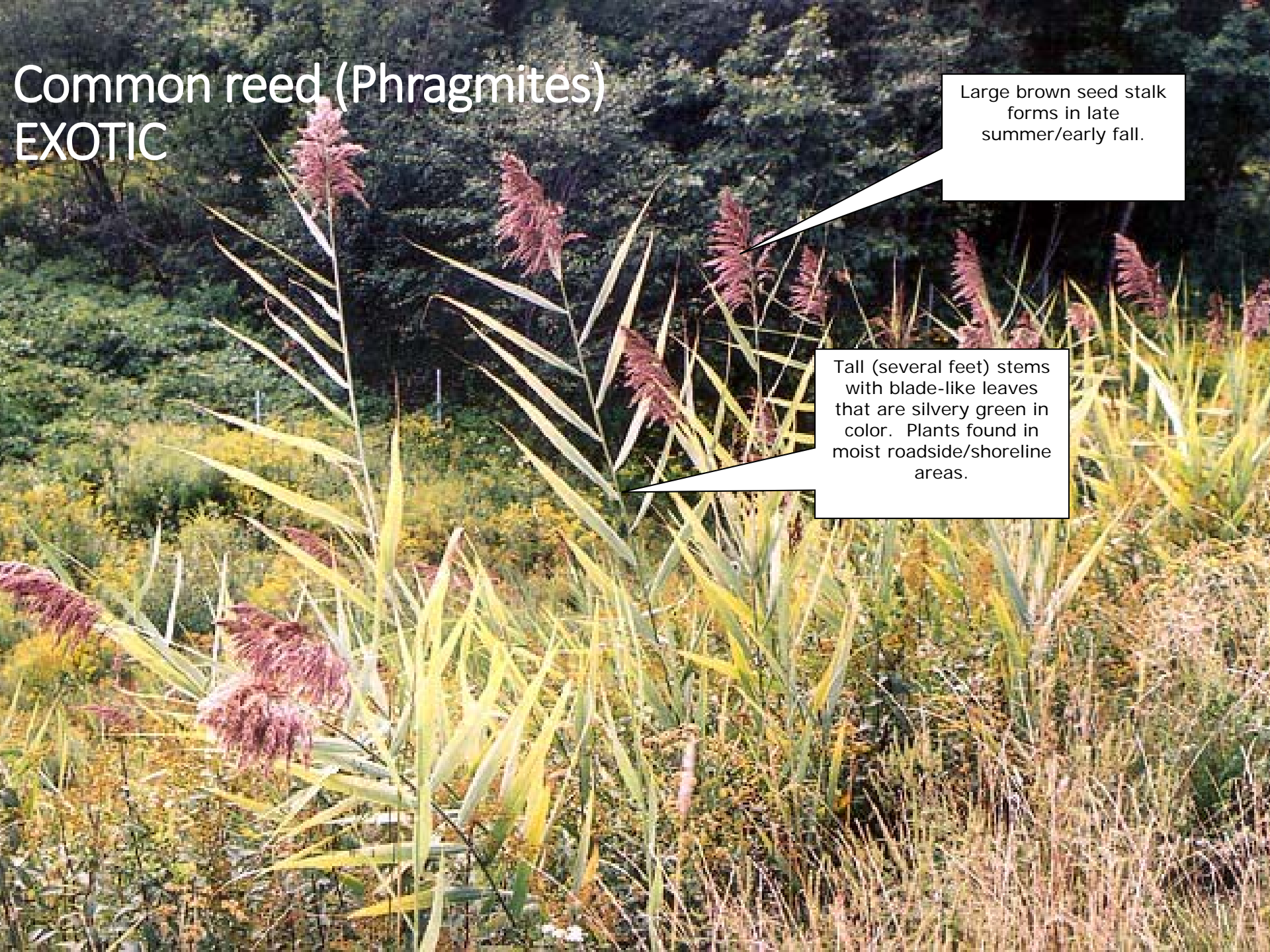
Purple loosestrife
EXOTIC

Common reed (Phragmites)

EXOTIC


Large brown seed stalk forms in late summer/early fall.

Tall (several feet) stems with blade-like leaves that are silvery green in color. Plants found in moist roadside/shoreline areas.





Common reed sending runners out into the lake

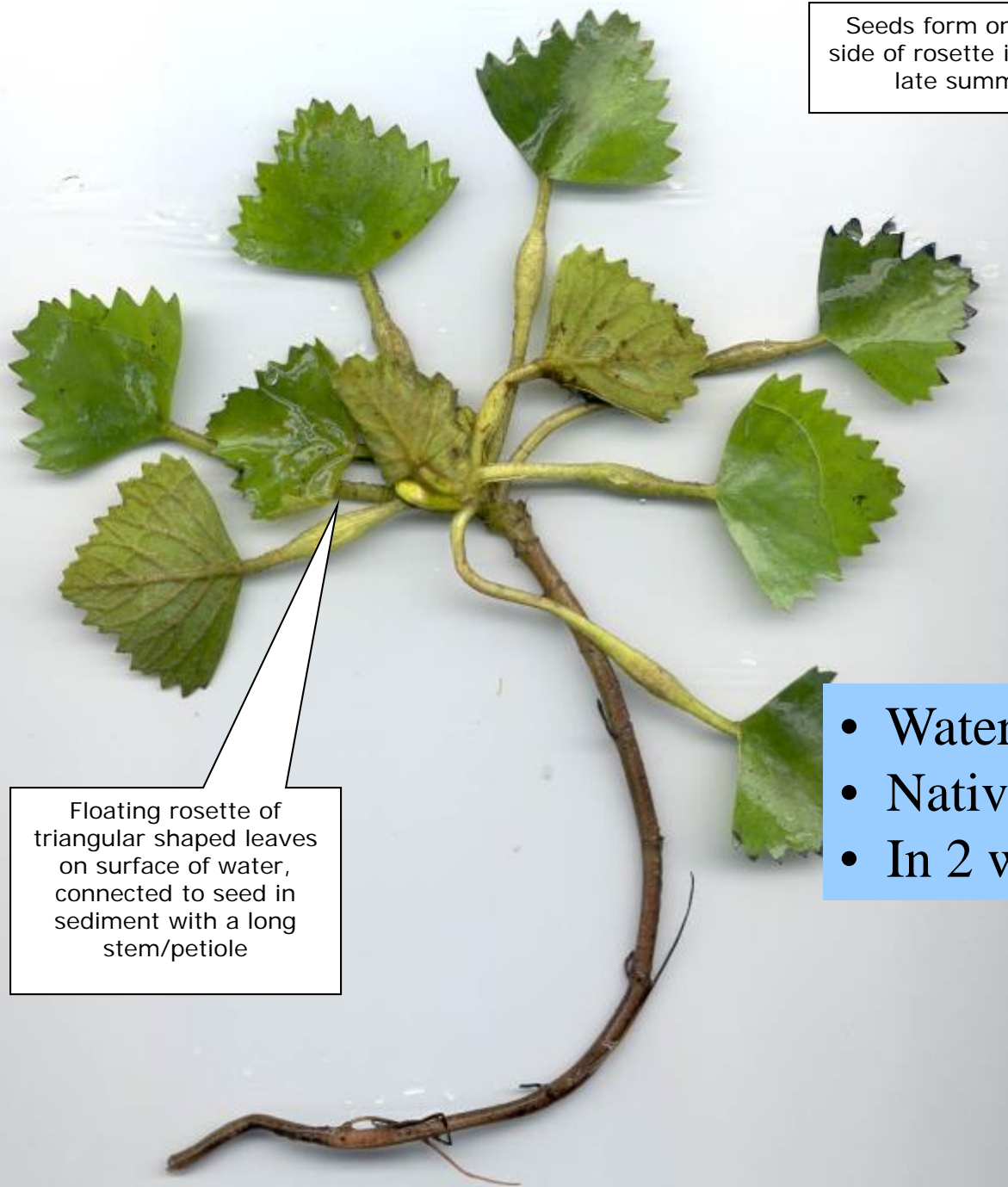


Large, heart-shaped leaf with a pointed tip and emerges in a zig-zag pattern. Flowers in late summer.

Stems are hollow and green with purple and red speckles. Fast growing but dies back every year.

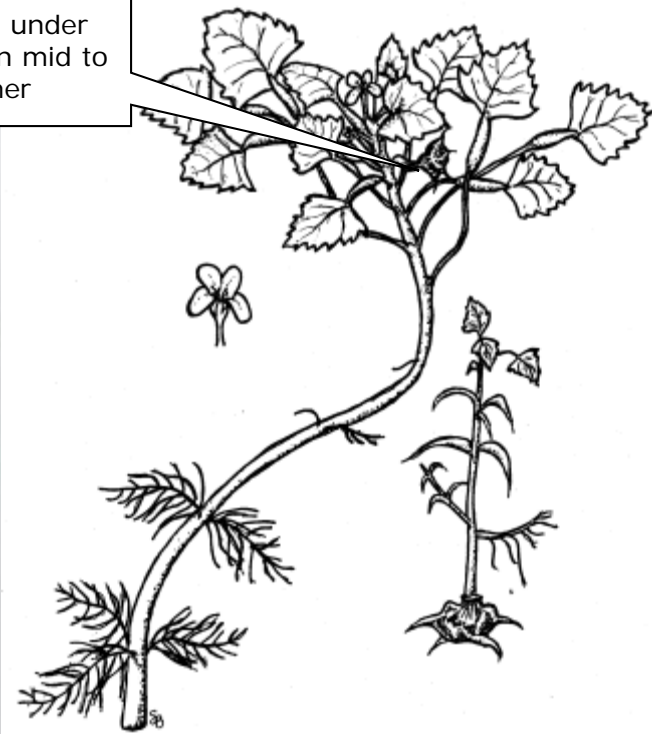
Japanese knotweed
EXOTIC

Floating Leaved Invasive Plants



Floating rosette of triangular shaped leaves on surface of water, connected to seed in sediment with a long stem/petiole

Seeds form on under side of rosette in mid to late summer



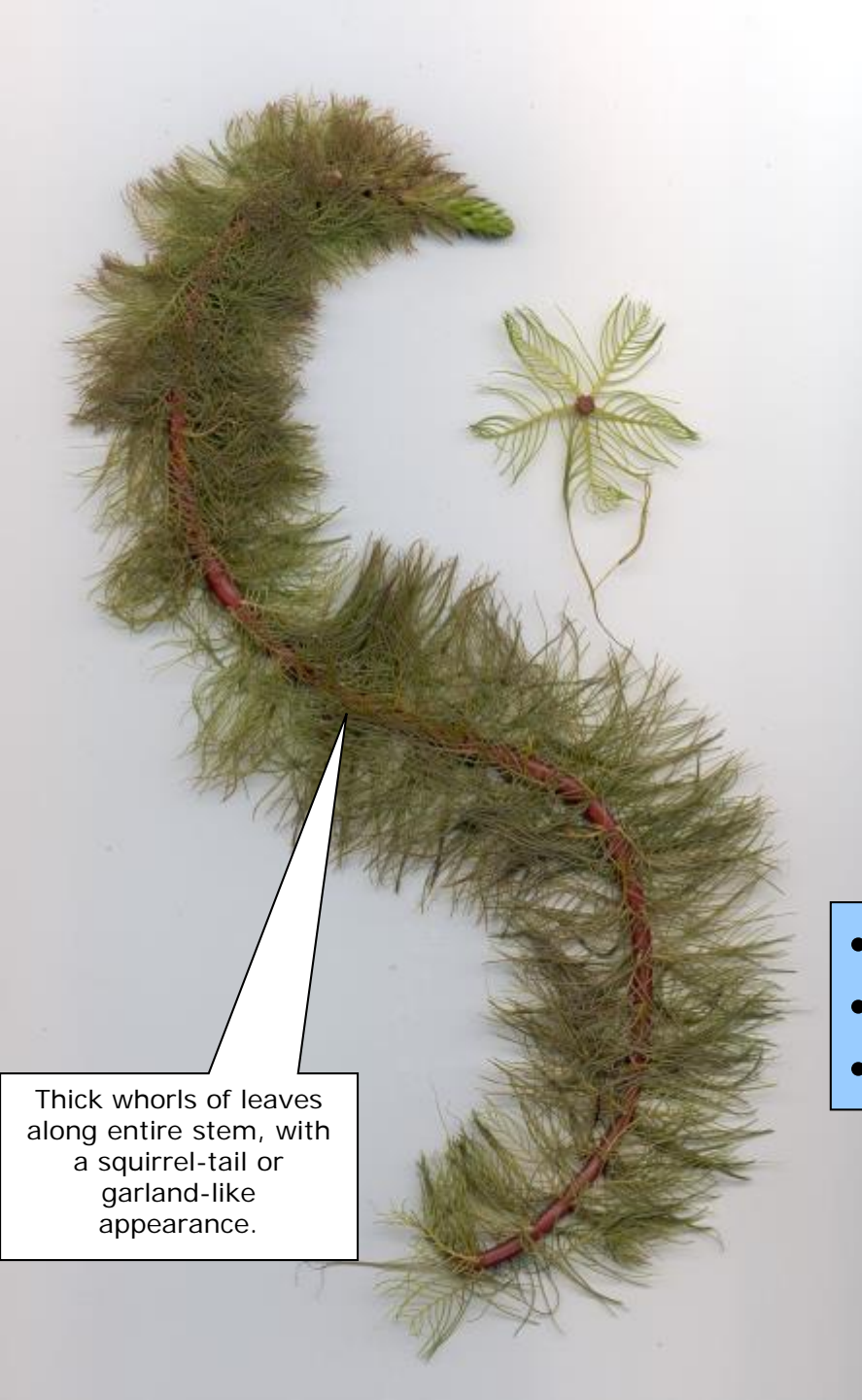
- Water chestnut- *Trapa natans*
- Native to Asia
- In 2 waterbodies in NH



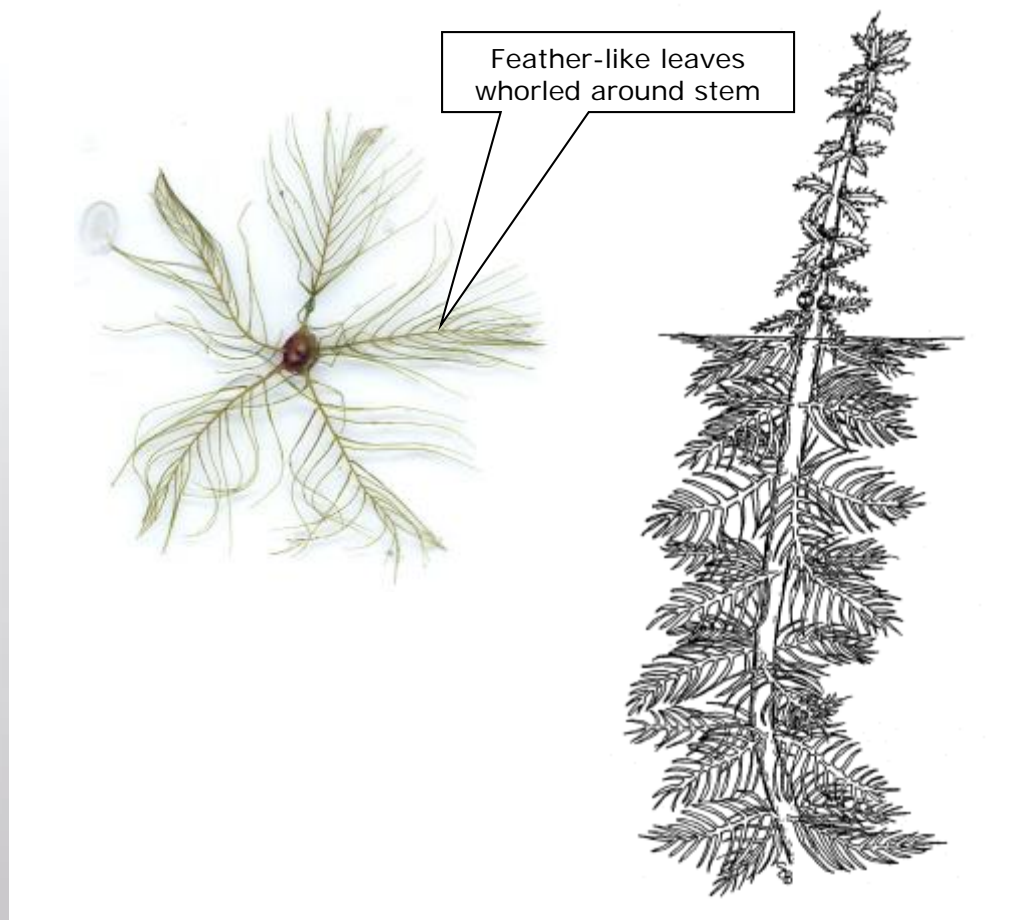


Water chestnut- EXOTIC

Submergent Invasive Plants




Thick whorls of leaves along entire stem, with a squirrel-tail or garland-like appearance.



Feather-like leaves whorled around stem

- Variable milfoil- *Myriophyllum heterophyllum*
- Native to southern and central U.S., not to NH
- In over seventy waterbodies in NH

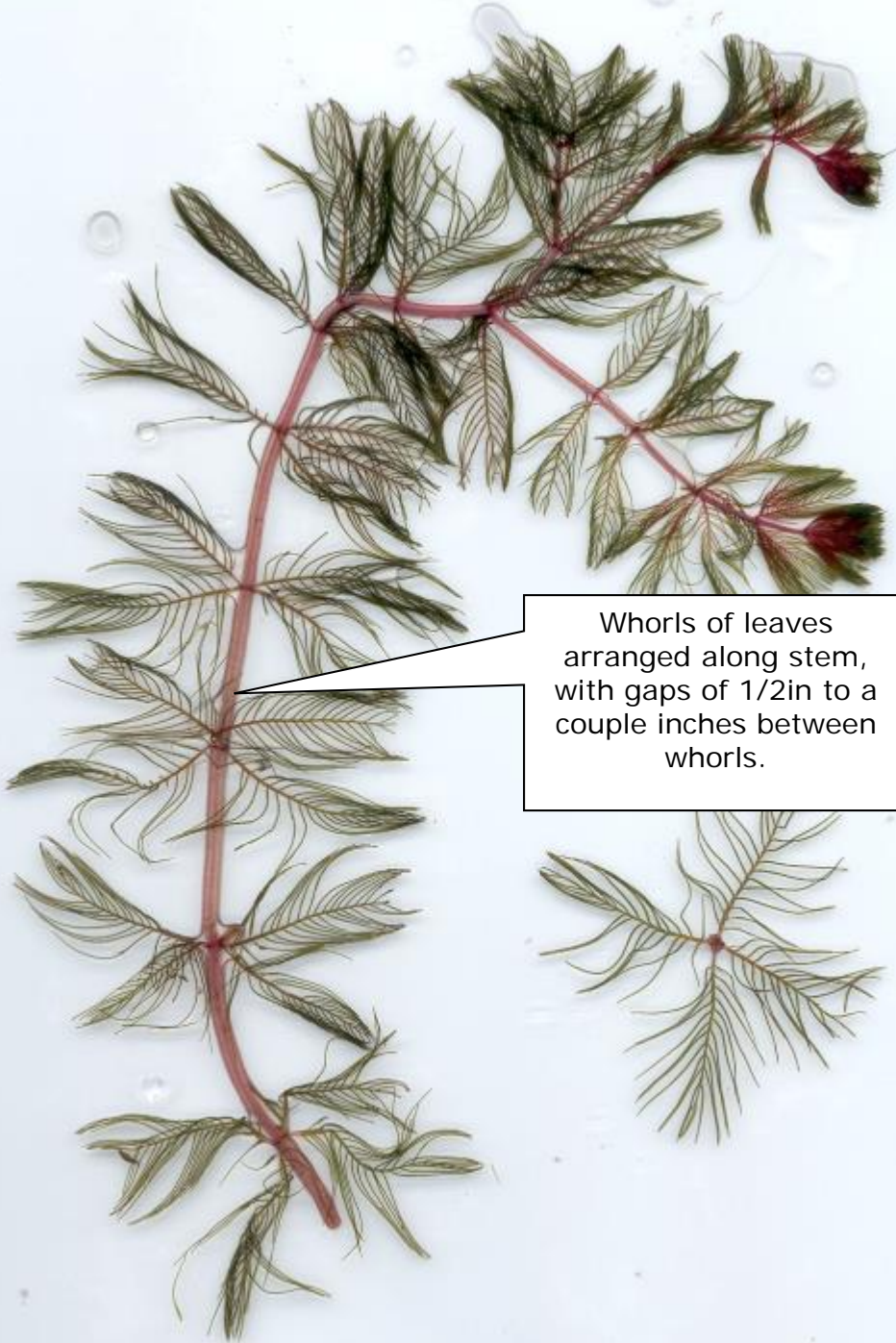
Variable milfoil ID tips

An underwater photograph of a milfoil plant. The plant has a central stem with many small, feathery, tubular leaves branching out. The water is dark and slightly murky. A green callout box with a pointer directed at the plant's stem contains text.

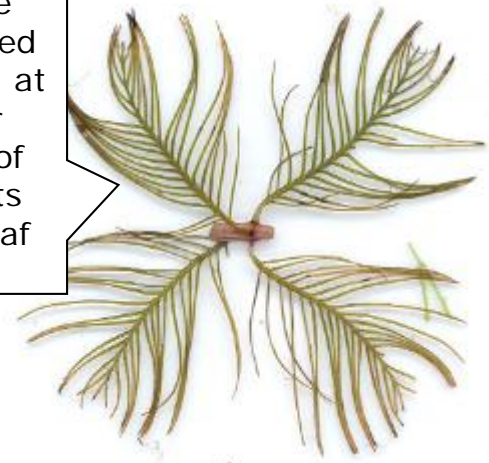
Think of a “squirrel’s tail” when you look at the stems of growth. You will often see the stem and then the fluffy tubular growth around it. There may be a single stem, or a few in a clump.



Dense variable milfoil growth in about 8 feet of water



Feather-like
leaves whorled
around stem, at
least 12 or
more pairs of
small leaflets
along one leaf



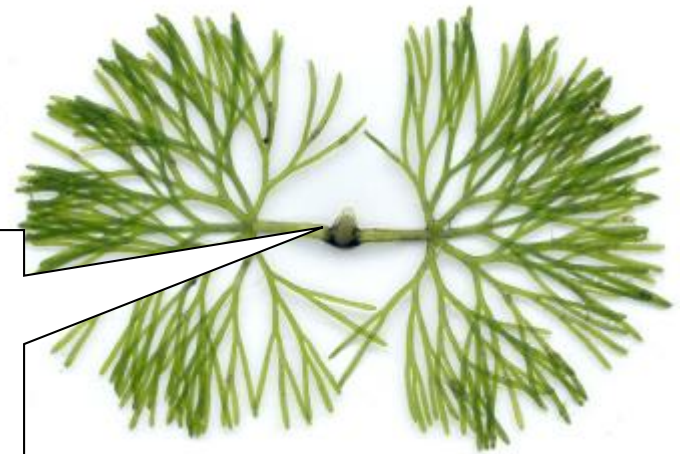
Whorls of leaves
arranged along stem,
with gaps of 1/2in to a
couple inches between
whorls.

- Eurasian milfoil- *Myriophyllum spicatum*
- Native to Asia
- In 5 waterbodies in NH

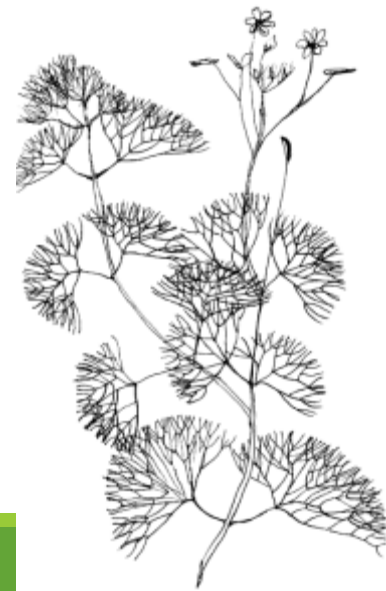




Branching leaves
arranged oppose
along stem. Note
leaf is attached by a
short stem to main
stem of plant.



- Fanwort- *Cabomba caroliniana*
- Native to Europe/Asia
- In 9 waterbodies in NH





Fanwort (EXOTIC)

Brittle naiad (looks like native naiads)

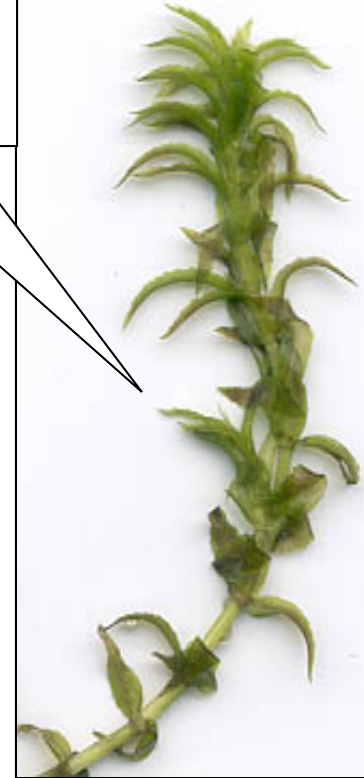


Leaves narrow with
teeth on edges,
very brittle and low
growing plant





Small narrow leaves
whorled around
stem. Note teeth
on leaf edge for
hydrilla.



- Hydrilla- *Hydrilla verticillata*
- Native to South America
- Not yet found in NH (but found in MA and ME)
- Looks like native waterweed

Questions?

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