

Emergent Plant Community



- shallowest zone
- from moist soil to knee-deep water
- the “wetland” plants

** Strictly speaking, none of the eleven listed TRUE AQUATIC invasive plants are part of this community*



Life at the water's edge can be challenging

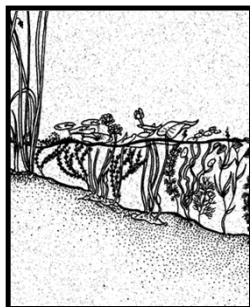


Adaptations

- plants can tolerate fluctuating water levels & wave action
- most have spongy, buoyant leaves and tough, interlocking roots

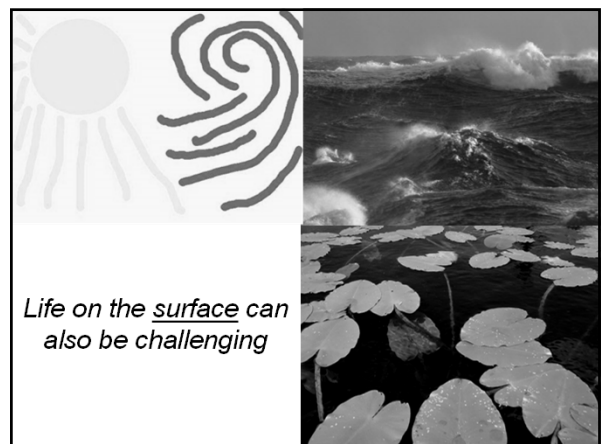


Floating Leaved Plant Community



- knee-deep to chest-deep water
- submersed plants may reside under this canopy

** Three of the eleven listed LAP plants are floaters*

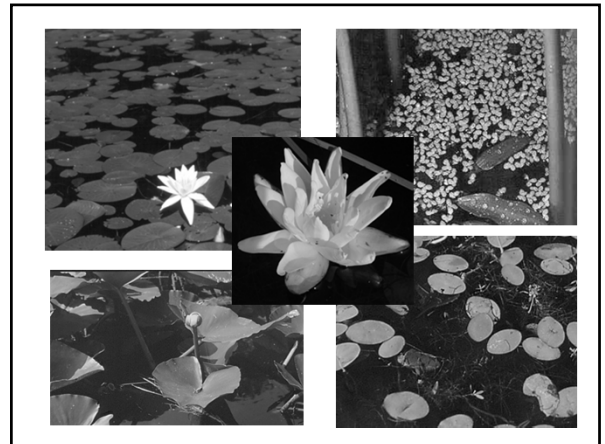


Life on the surface can also be challenging

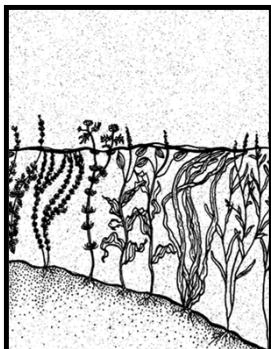


Adaptations

- buoyant leaves, smooth margins, leathery texture, waxy "cuticle"
- tough, elastic leaf stalks; grow rapidly to surface
- some are free floating
- reproduction from seeds, turions, rhizomes



Submersed Plant Community



- from shoreline to several meters deep
- maximum depth is limited by:
 - ✓ species specific adaptations
 - ✓ light availability

** Eight of the eleven listed LAP plants are found in the submersed community*




Adaptations

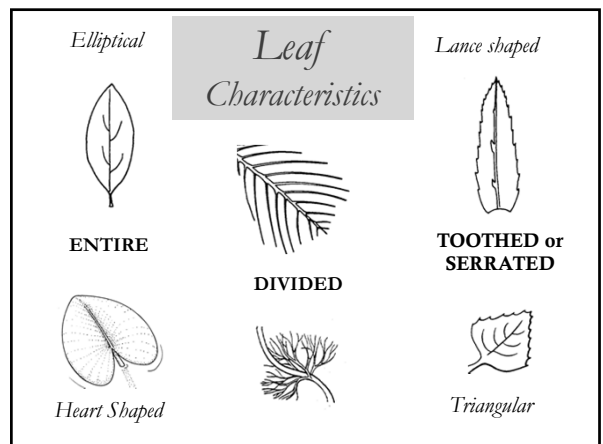
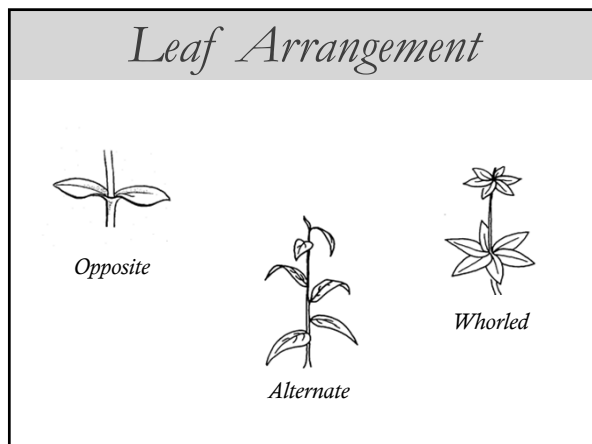
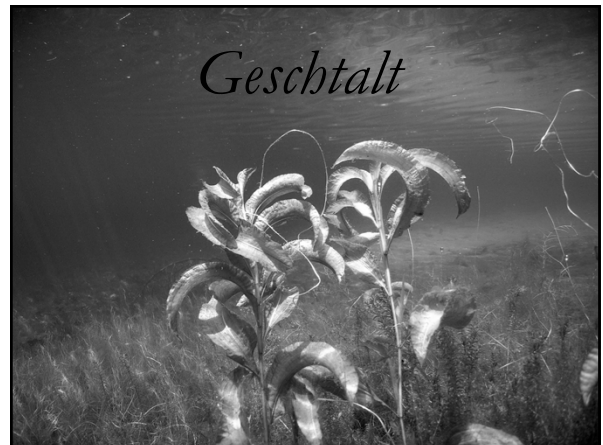
- stems and leaves often flexible, leaves adapted to maximize surface area & gas exchange, lack cuticle
- most set flowers above the surface for pollinators; heterophylly (2 leaf types) often occurs in these species
- plants overwinter as rhizomes, tubers, turions (winter buds), whole plant
- Reproduction primarily by clonal expansion, also root division, seeds



QUIZ # 1



Part 2: Plant Structure



Divided Leaf Patterns



Forked



Branched



Feather Divided



Divided Leaf Patterns

All leafy milfoils have
feather divided
leaves.

All aquatic plants with
true feather divided
leaves are milfoils.



Feather Divided



QUIZ # 2



What can you say
about the identity of
this plant?

Leaf



Part 3:

***MAINE'S
ELEVEN MOST
UNWANTED ...***

*... and their most
common native
look-alikes*

It helps to sort plants into 4 Categories

3 invaders are
floating leaf plants



4 are submersed plants
with **finely-divided leaves**
arranged on stems



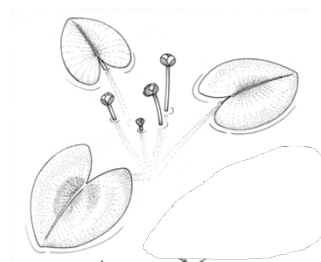
4 are submersed plants
with **blade or strap-shaped**
leaves arranged on stems



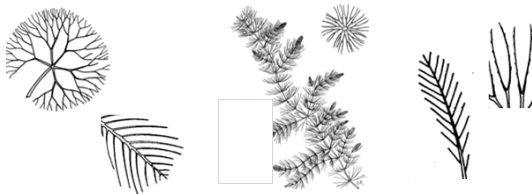
EVERYTHING
ELSE . . .



3 invaders are
floating leaf plants



4 are submersed plants with
finely-divided leaves
arranged on stems



4 are submersed plants with
blade- or strap-shaped
leaves arranged on stems



Opposite



Alternate



Whorled

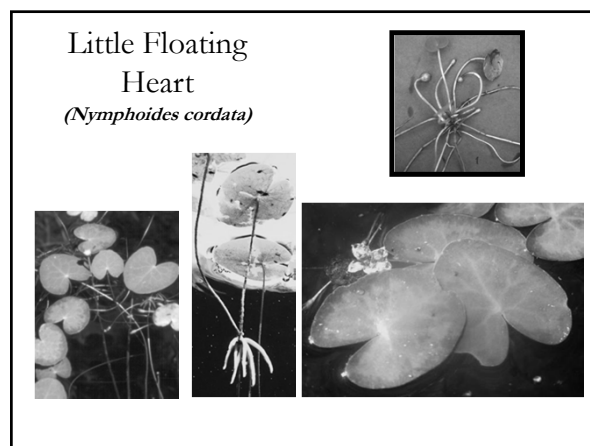
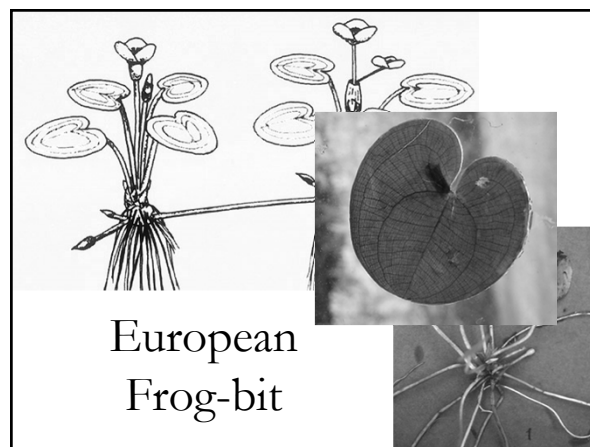
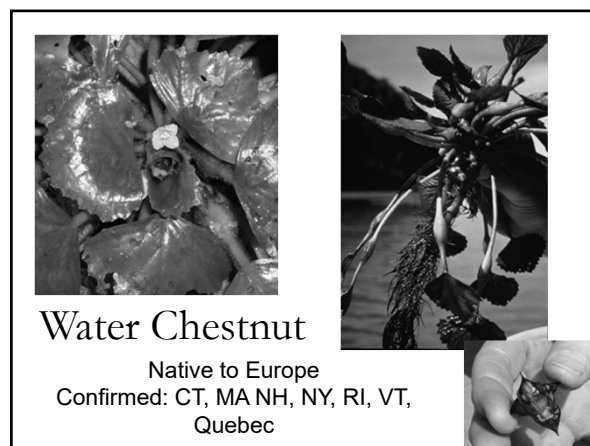
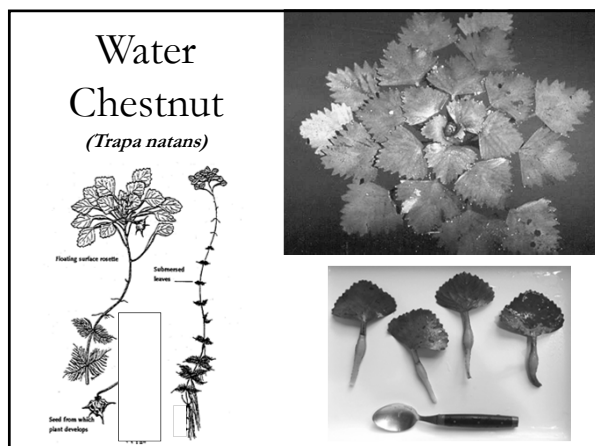
**EVERYTHING
ELSE . . .**



Floating Leaved Plants

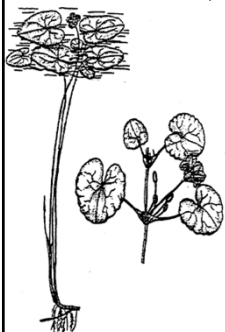


Water chestnut infestation, Mount Holyoke, MA



Yellow Floating Heart

(*Nymphoides peltata*)



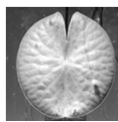
Yellow Floating Heart



Native to Europe
Confirmed: CT,
MA, NY, RI, VT

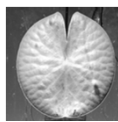
Spatterdock

(*Nuphar variegata*)



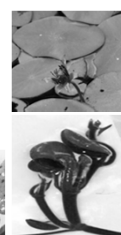
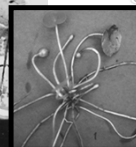
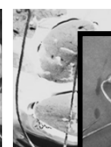
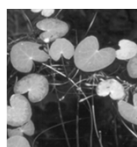
Fragrant Waterlily

(*Nymphaea odorata*)



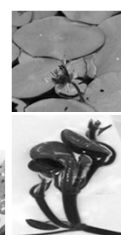
Little Floating Heart

(*Nymphoides cordata*)

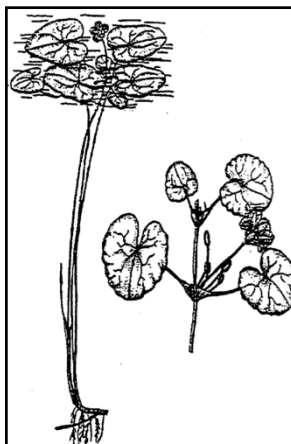


Watershield

(*Brasenia schreberi*)

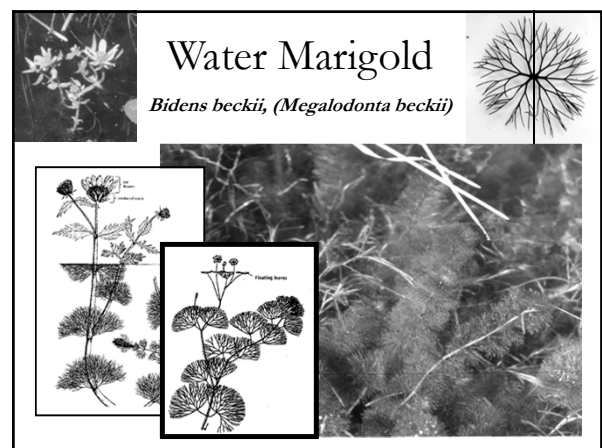
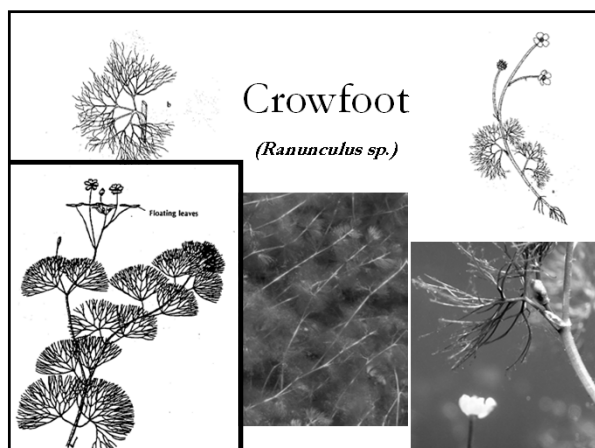
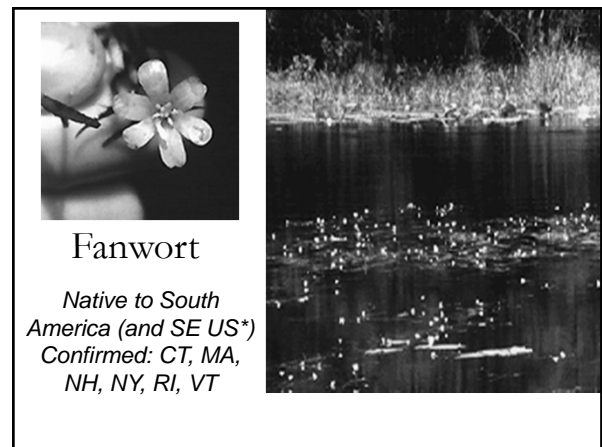
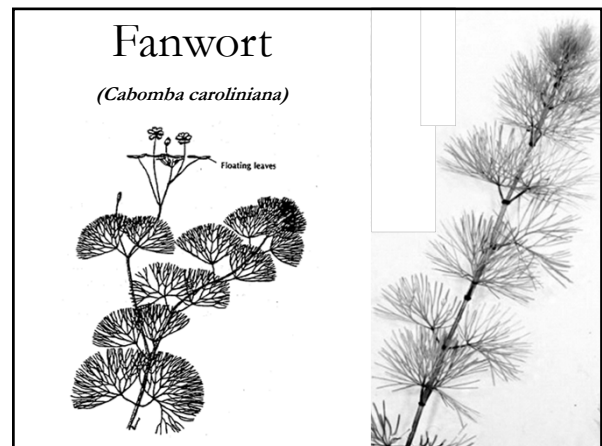


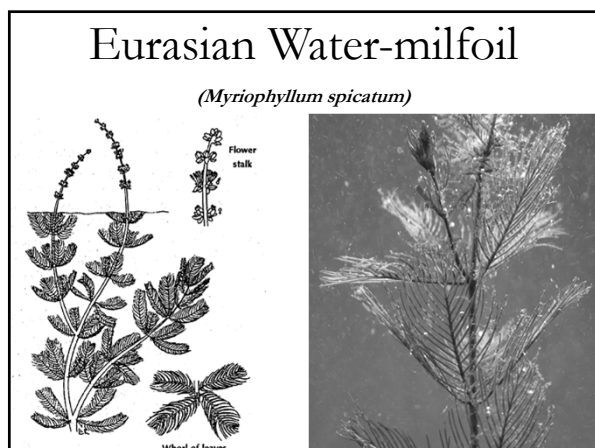
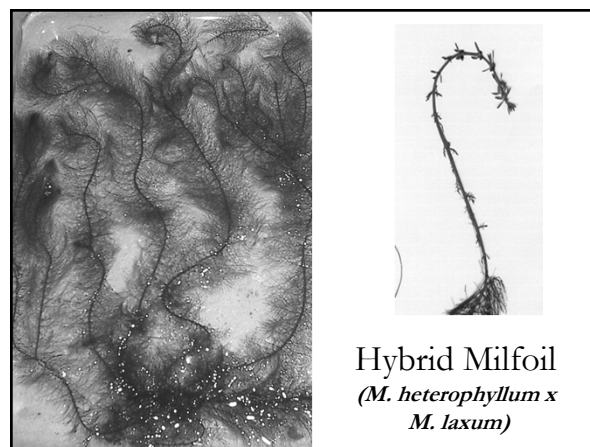
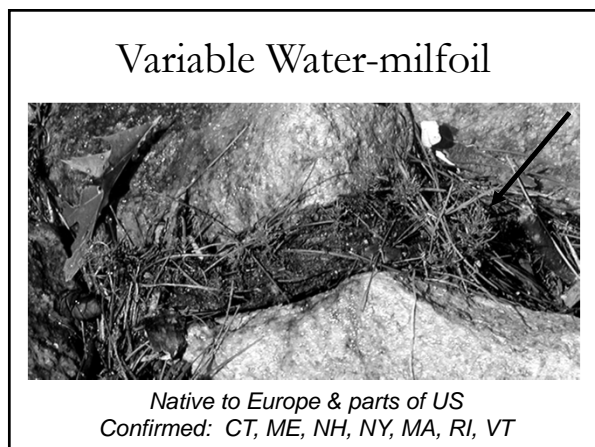
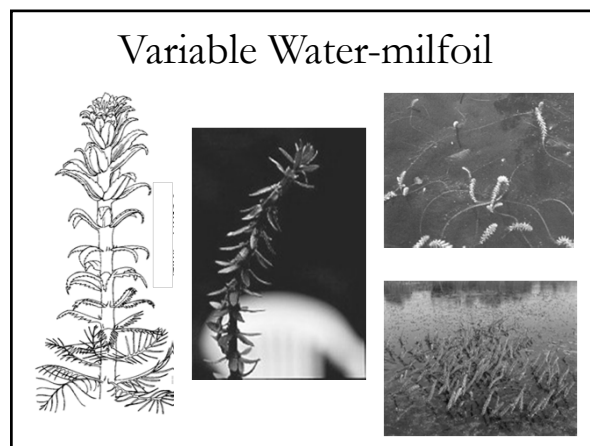
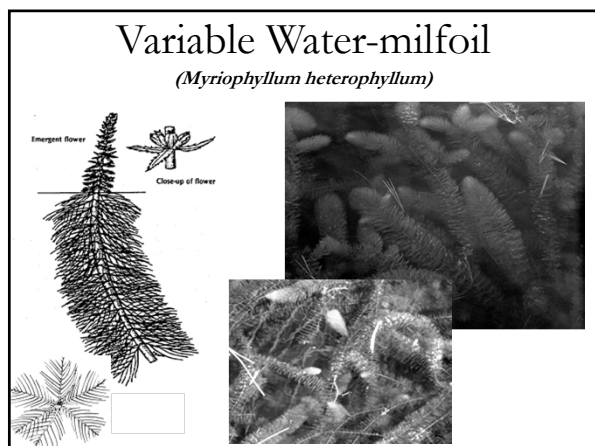
QUIZ # 3

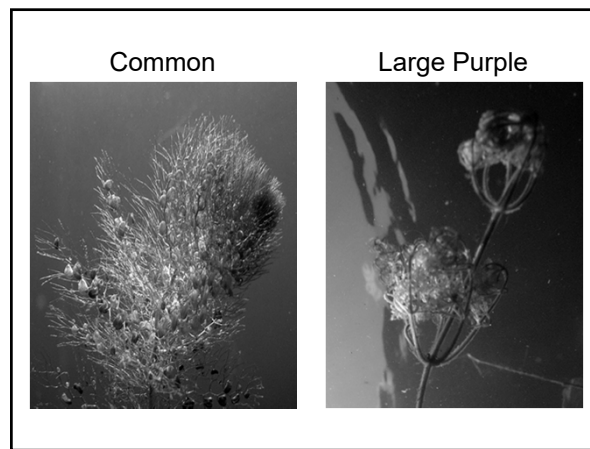
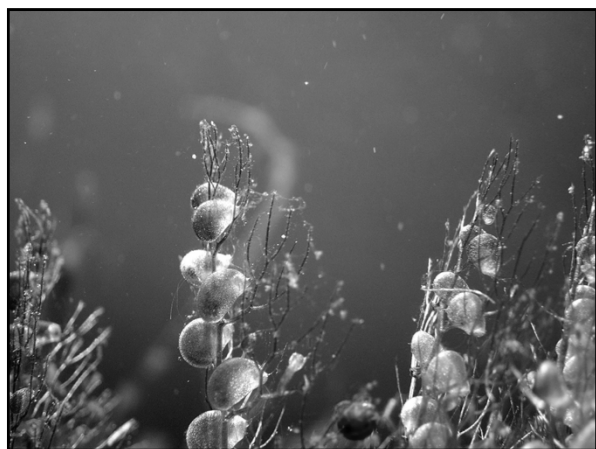
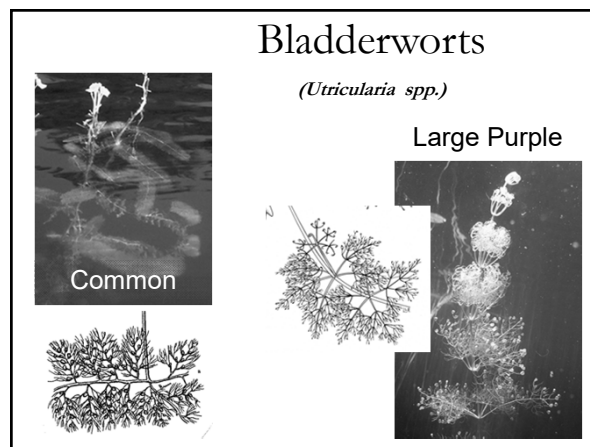
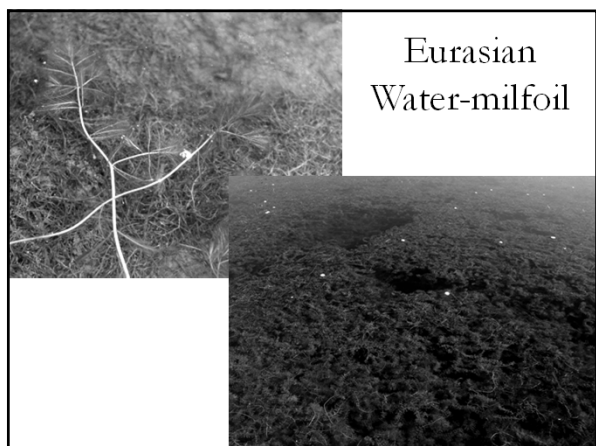


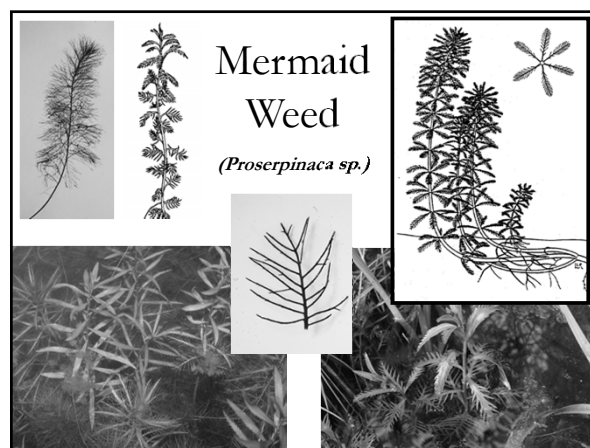
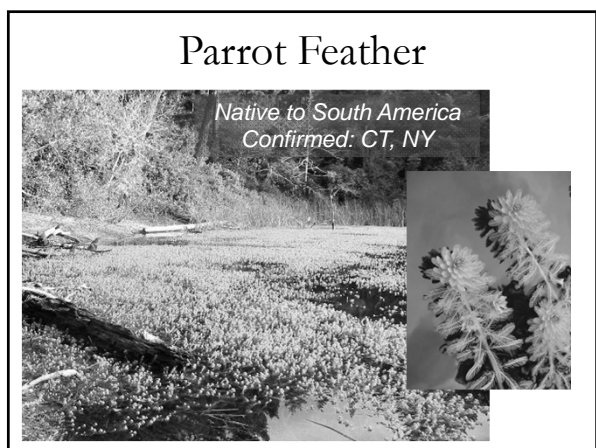
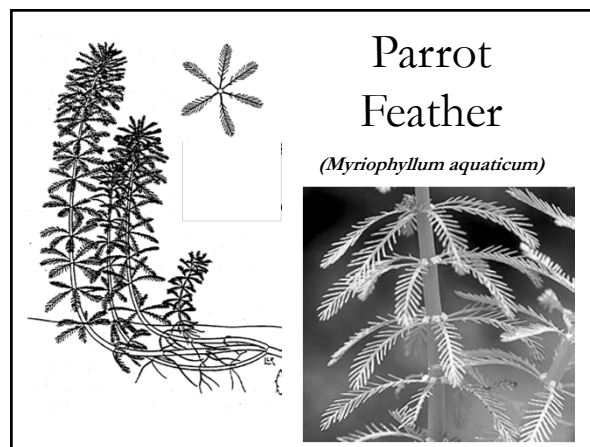
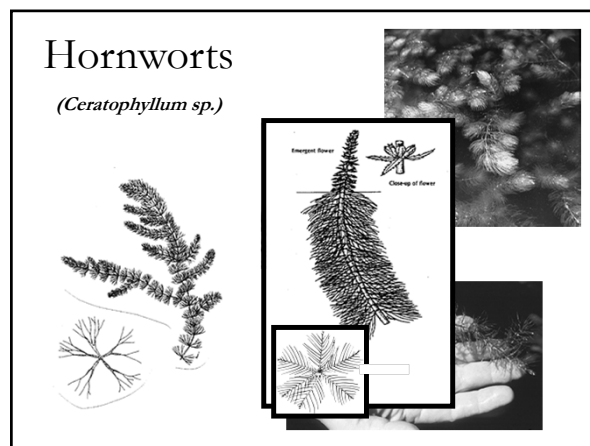
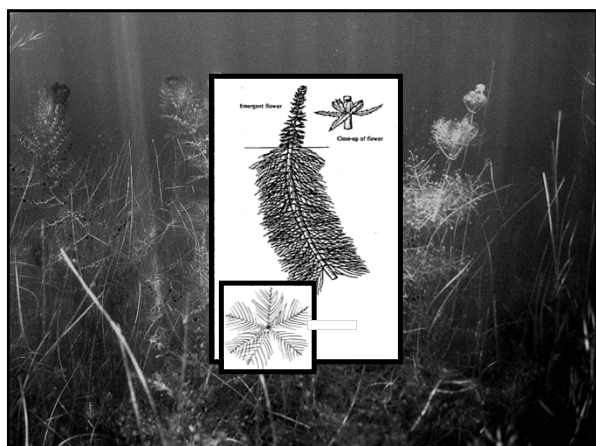
Could this be a
native floating leaf
plant?

How do you know?

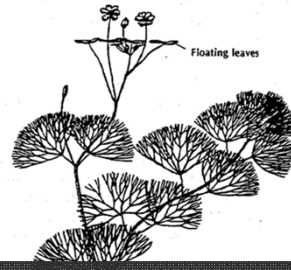








QUIZ # 4



There is only one IAP described so far (& only one on the list of 11) that has oppositely arranged branch-divided leaves.
Can you name it?

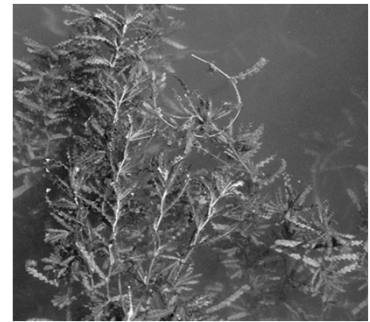
Submersed Plants with Blade- or Strap-shaped Leaves Attached to Stems



Brazilian elodea infestation, Nepean River, New South Wales, Australia



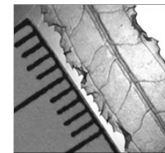
Curly-leaf Pondweed
(*Potamogeton crispus*)

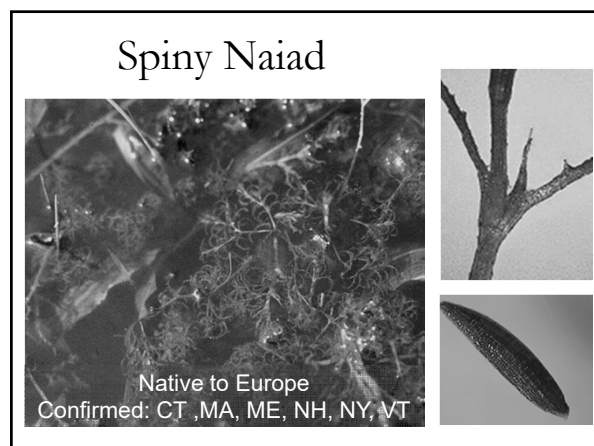
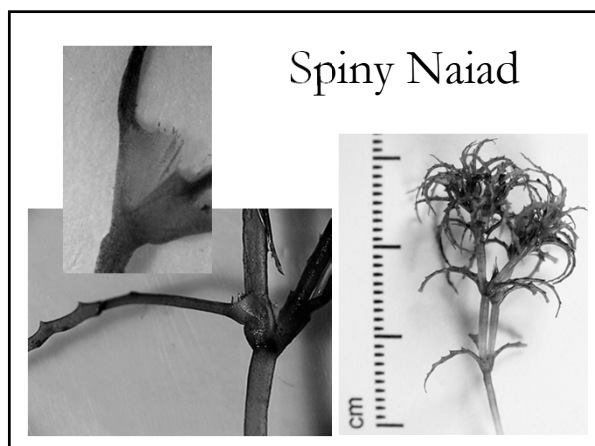
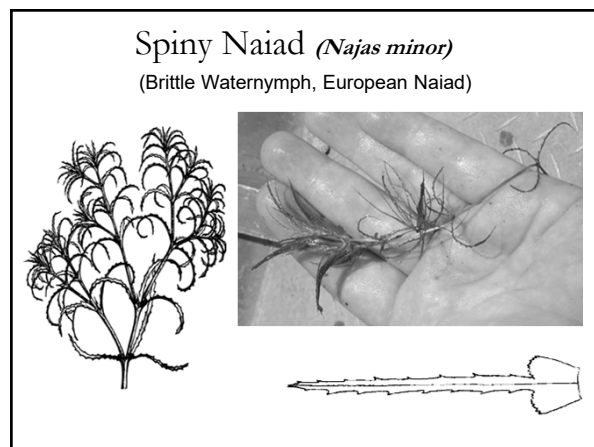
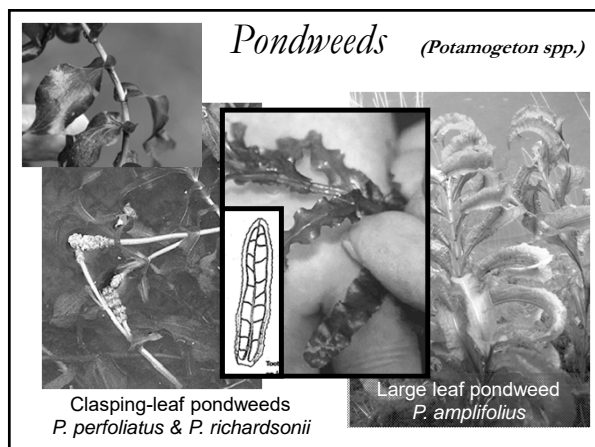
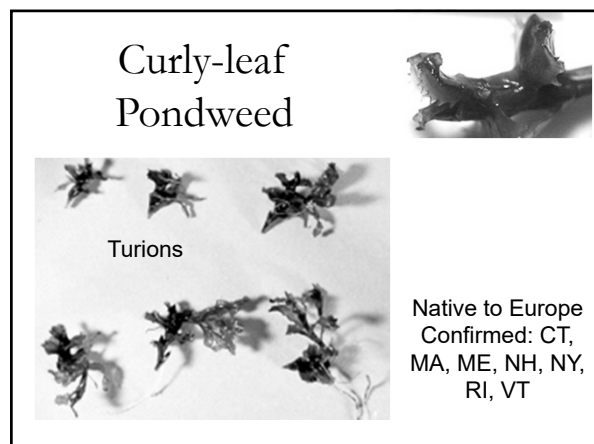
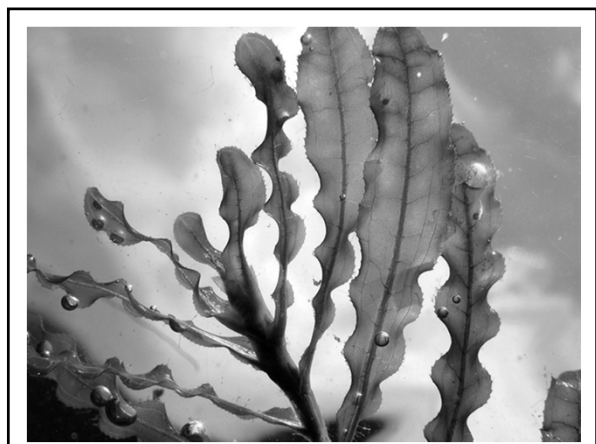


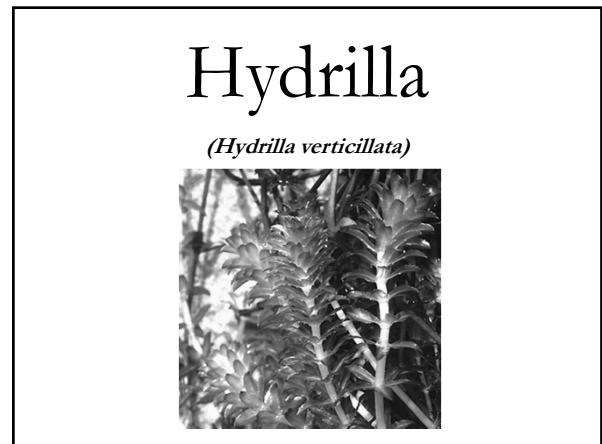
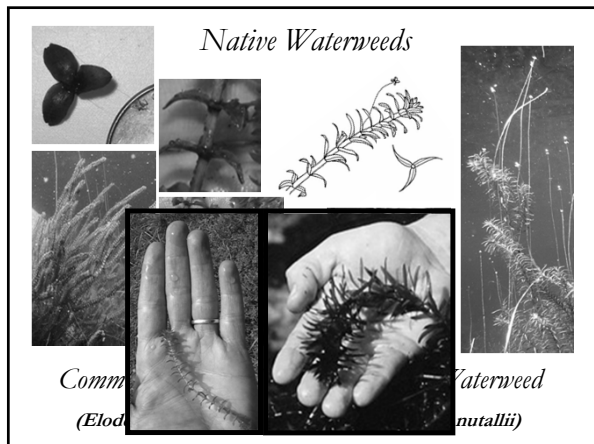
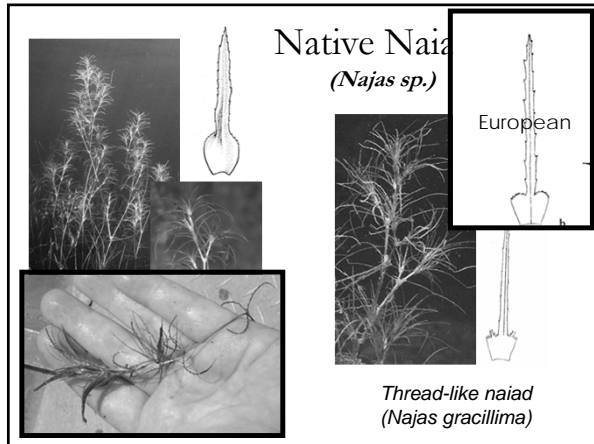
Curly-leaf pondweed infestation, West Pond, ME

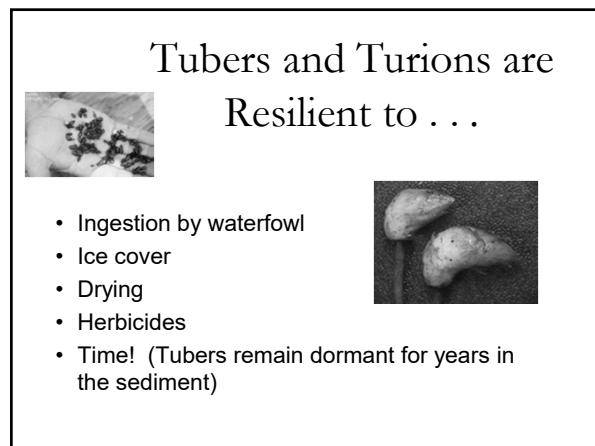
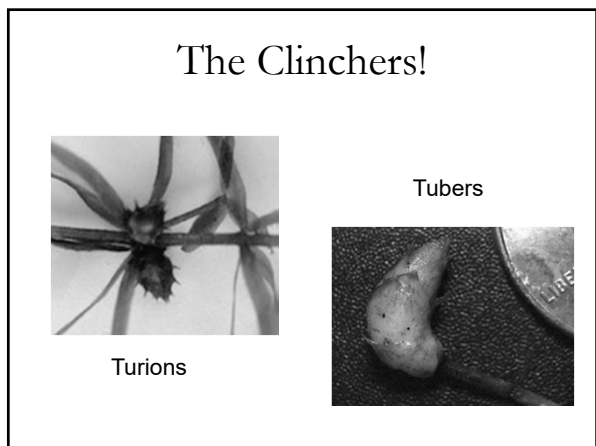
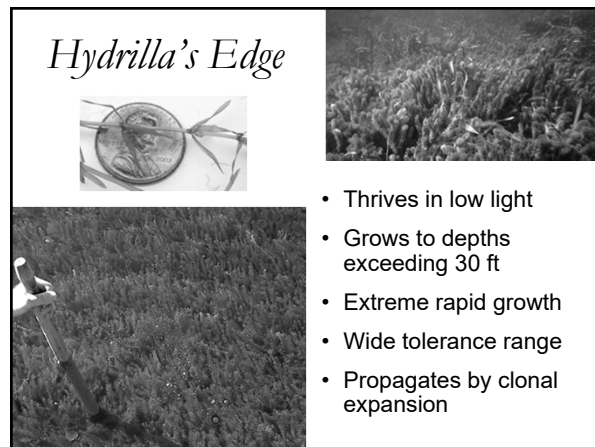
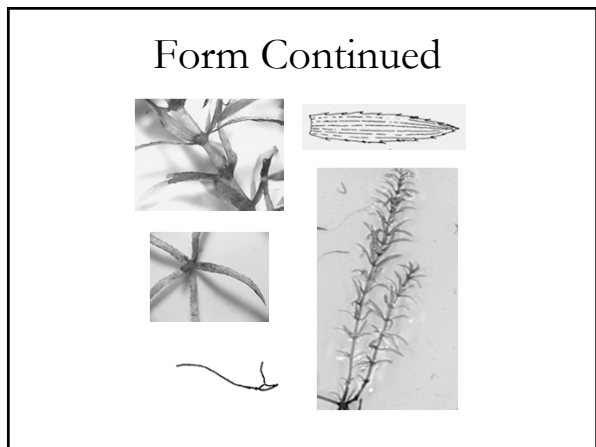
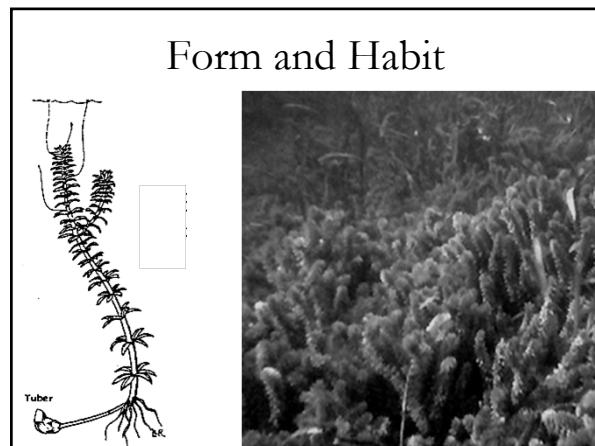
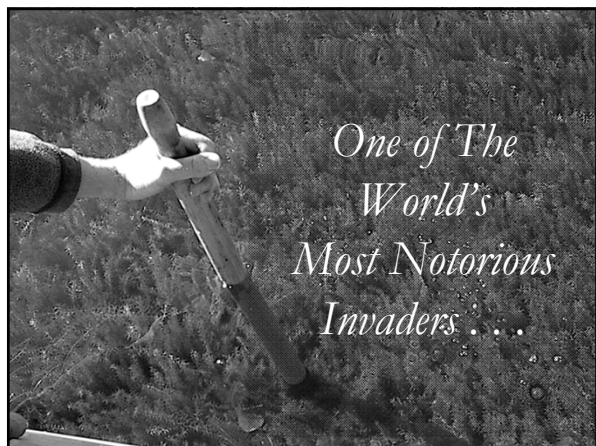


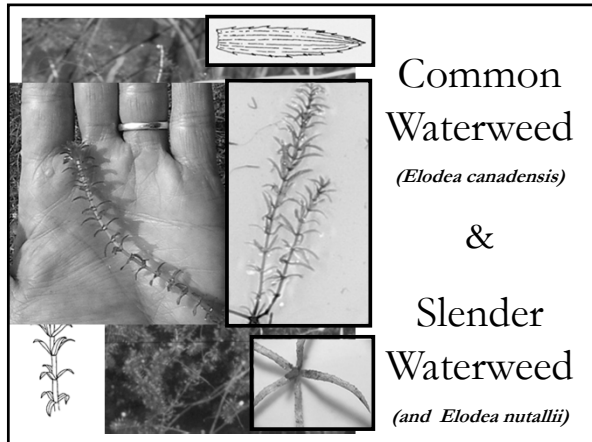
Curly-leaf Pondweed



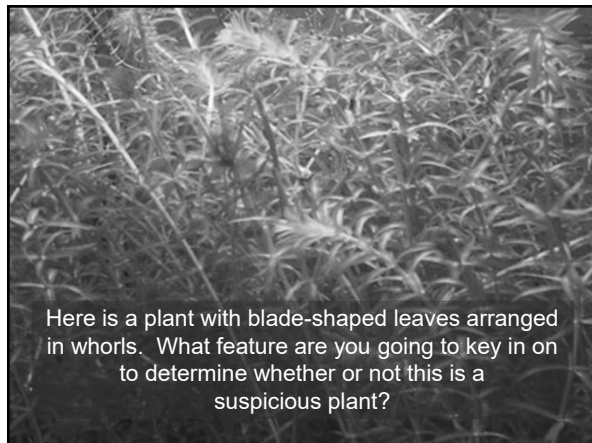








QUIZ # 5



FINAL QUIZ



Final Review!



