



# LAKE PLANTS

## THE GOOD, THE BAD, THE UGLY & THE BEAUTIFUL

PRESENTED BY

AMY P. SMAGULA

NHDES LIMNOLOGIST & EXOTIC SPECIES PROGRAM COORDINATOR

# OVERVIEW

The Good – Rare, threatened and endangered species, and other natives

The Bad – Invasives

The Ugly – Are there any ugly ones? Let's see!

The Beautiful – Beauty is in the eye of the beholder, but I offer up some possibilities



# THE GOOD PLANTS

# NATIVE PLANTS ARE GOOD!

- ▶ Native- A species that evolves or develops in one particular geographic area or region, usually marked as being present in an area prior to the advent of European colonization
  - ▶ So it was not purposely or accidentally introduced by a human

# NH Natural Heritage Bureau (NHB)

Division of Forests and Lands  
Department of Natural and Cultural Resources

NHB finds, tracks, and facilitates the protection of New Hampshire's rare plants and exemplary natural communities

Mission is mandated by the NH Native Plant Protection Act (1987) RSA 217-A

“...to protect and conserve native plants”



# STATE ENDANGERED AQUATIC PLANTS

horned pondweed (*Zannichellia palustris*)  
sago pondweed (*Stuckenia pectinata*)  
northern slender pondweed (*Stuckenia filiformis*)  
sclerolepis (*Sclerolepis uniflora*)  
quill-leaved sagittaria (*Sagittaria teres*)  
wapato (*Sagittaria cuneata*)  
water-plantain spearwort (*Ranunculus ambigens*)  
flatstem pondweed (*Potamogeton zosteriformis*)  
Vasey's pondweed (*Potamogeton vaseyi*)  
small slender pondweed (*Potamogeton pusillus* ssp. *pusillus*)  
white-stem pondweed (*Potamogeton praelongus*)  
knotty pondweed (*Potamogeton nodosus*)  
leafy pondweed (*Potamogeton foliosus*)  
thin-leaved alpine pondweed (*Potamogeton alpinus*)  
tiny cowlily (*Nuphar microphylla*)  
water marigold (*Bidens beckii*)  
pale duckweed (*Lemna valdiviana*)  
star duckweed (*Lemna trisulca*)  
river bank quillwort (*Isoetes riparia* var. *canadensis*)  
large-spored quillwort (*Isoetes lacustris*)  
Engelmann's quillwort (*Isoetes engelmannii*)  
featherfoil (*Hottonia inflata*)  
common mare's tail (*Hippuris vulgaris*)  
water stargrass (*Heteranthera dubia*)  
sharp-flowered mannagrass (*Glyceria acutiflora*)  
pygmy weed (*Crassula aquatica*)

## 26 State Endangered Aquatic Plant Species



Featherfoil (*Hottonia inflata*)

# STATE THREATENED AQUATIC PLANTS

- reversed bladderwort (*Utricularia resupinata*)
- awlwort (*Subularia aquatica* ssp. *americana*)
- large bur-reed (*Sparganium eurycarpum*)
- sessile-fruited arrowhead (*Sagittaria rigida*)
- bluntleaf pondweed (*Potamogeton obtusifolius*)



Reversed bladderwort

# WHAT'S RARE IN NH?

- ▶ To reduce these lists to a subset of species likely to be present in a given town, visit <https://www.nh.gov/nhdfl/documents/town-lists.pdf>



State Endangered: common mare's tail

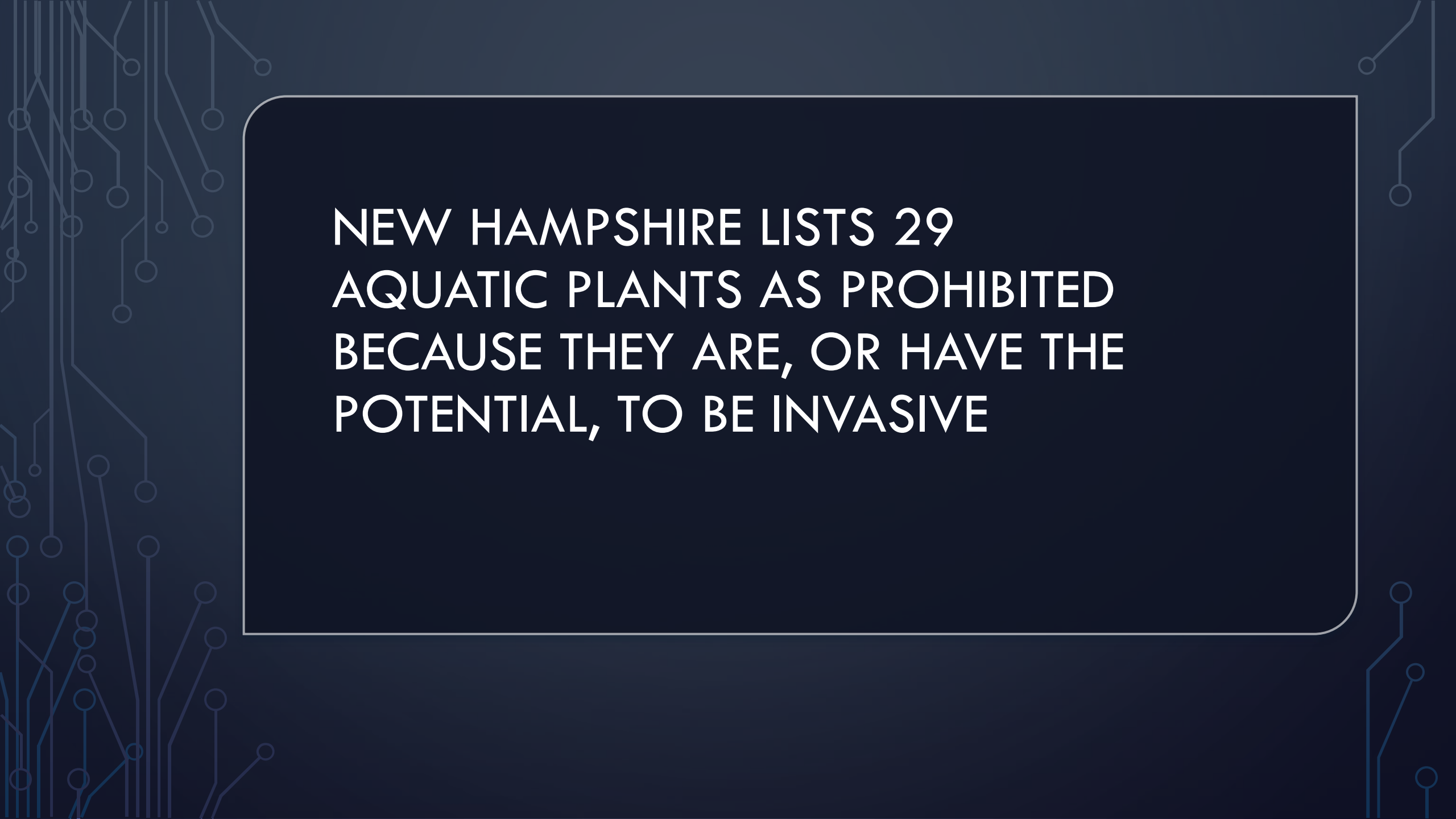


The image features a dark blue gradient background. In the four corners, there are white, stylized circuit-like patterns consisting of lines and small circles, resembling a network or data flow diagram. The central text is in a bold, white, sans-serif font.

# THE BAD PLANTS

# INVASIVE AQUATIC PLANTS ARE BAD!

- ▶ Invasive– A species that is non-native and that causes economic harm, ecological harm, and harm to human health.
  - ▶ Important---not all non-native species are invasive



**NEW HAMPSHIRE LISTS 29  
AQUATIC PLANTS AS PROHIBITED  
BECAUSE THEY ARE, OR HAVE THE  
POTENTIAL, TO BE INVASIVE**



**EMERGENT AQUATIC INVASIVES**



Giant arrowhead

Common reed

Water fern

Double flowering arrowhead

Flowering rush

Hairy willow herb

Dwarf cattail

Water spinach

Reed sweet grass/manna grass

Purple loosestrife

Water forget-me-not

Yellow iris

Mini cattail

Swamp stonecrop



African oxygen weed



Yellow floating heart



Water chestnut



European frogbit

# FLOATING INVASIVES



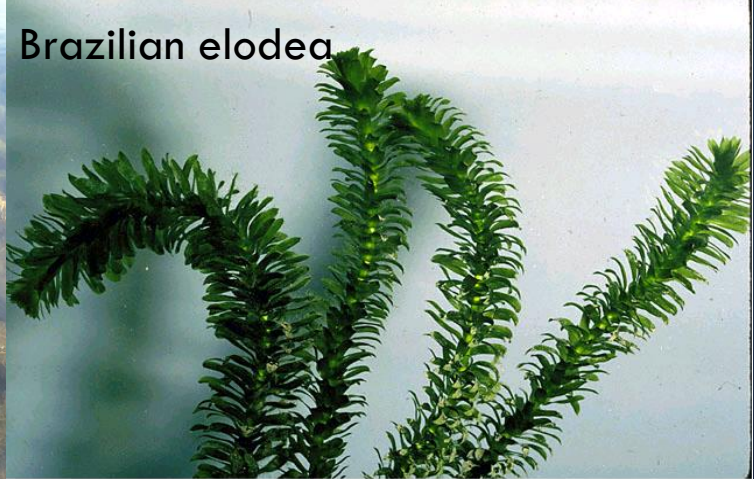
Brittle naiad



Parrot feather



Variable milfoil



Brazilian elodea

# SUBMERGENT INVASIVES



Ambulia



Eurasian milfoil



Fanwort



Curly leaf pondweed



Hydrilla



East Indian hydrophila



## THE NEW BADDIE ON THE BLOCK

- Water violet (a.k.a. *Hottonia palustris*)
- Not a state listed
- invasive - yet

The background is a dark blue gradient. In the four corners, there are white, stylized circuit-like patterns consisting of lines and small circles, resembling a network or data flow diagram.

# THE ~~UGLY~~ ODD-LOOKING PLANTS



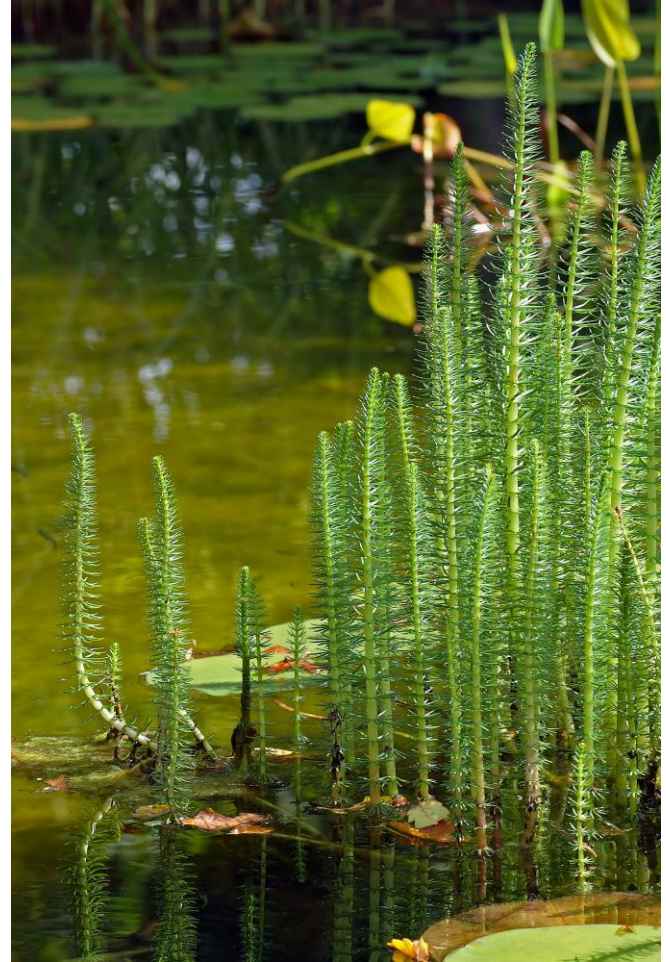


AMERICAN  
FEATHERFOIL –  
*HOTTONIA INFLATA*

*NATIVE & RARE*

# MARES TALE (*HIPPURIS VULGARIS*)

*Native & rare*





# TURTLEHEAD (*CHELONE SP.*)

*Native & uncommon*



# SUNDEW (*DROSERA ROTUNDIFOLIA*)

*Native & fairly common*

# PITCHER PLANT (*SARRACENIA PURPUREA*)

*Native & fairly common*

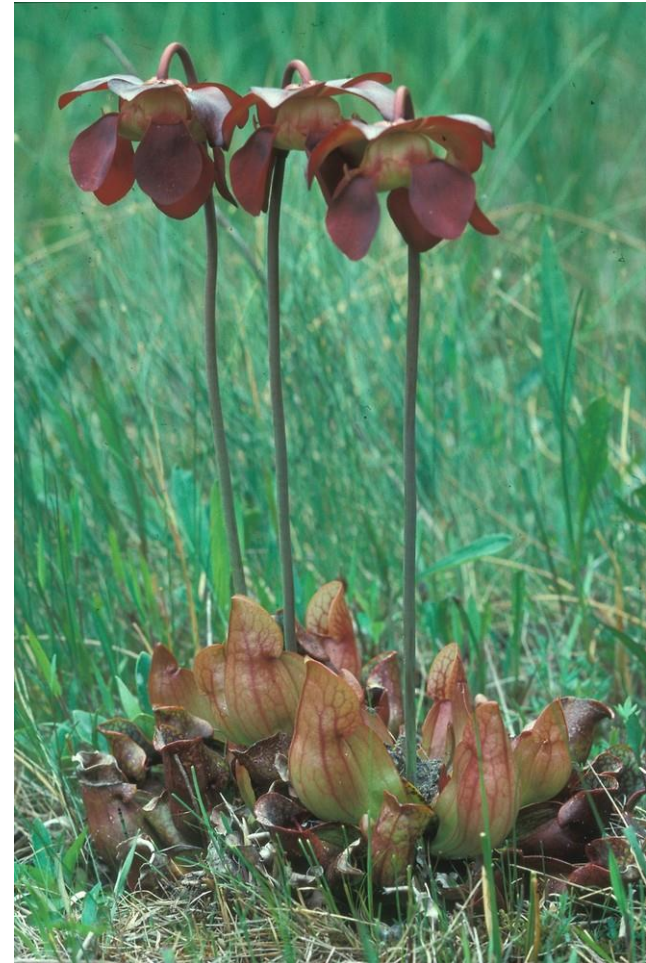
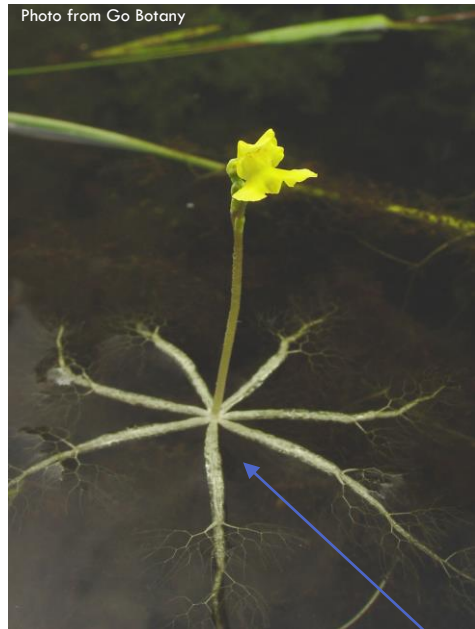


Photo from Go Botany



*Utricularia inflata*  
Newer invasive



*Utricularia radiata*  
Common native

# BLADDERWORTS WITH FLOATS?!

Note that whorl is less branched and less dense than on *U. inflata*



Top side of plant



Underside of plant with spiny seed



Bouquet for a geeky bride-to-be?

# WATER CHESTNUT (TRAPA NATANS)

INVASIVE



**GIANT SALVINIA  
(SALVINIA MOLESTA)**

**POTENTIAL INVASIVE**

Photo from Forestry Images



WATER  
HYACINTH  
(*EICHHORNIA  
CRASSIPES*)



shutterstock.com • 1133358452

POTENTIAL INVASIVE

The image shows a dense patch of water lettuce plants (Pistia stratiotes) floating on a dark, reflective water surface. The plants have small, rounded, green leaves. A central white text box with a thin black border contains the title. On the left and right sides of the text box, there are stylized white circuit board traces with circular nodes, extending outwards. The overall composition is a top-down view of the aquatic plants.

WATER LETTUCE  
(*PISTIA STRATIOTES*)

POTENTIAL INVASIVE

Photo from Center for Aquatic and Invasive Plants

The image features a dark blue gradient background. In the four corners, there are white, stylized circuit-like patterns consisting of lines and small circles, resembling a network or data flow diagram. The central text is in a clean, white, sans-serif font.

# THE BEAUTIFUL PLANTS



BEAUTY IS IN THE EYE OF THE BEHOLDER

- MARGARET WOLFE HUNGERFORD





Pickerelweed

## BEAUTIFUL PLANTS HOW?

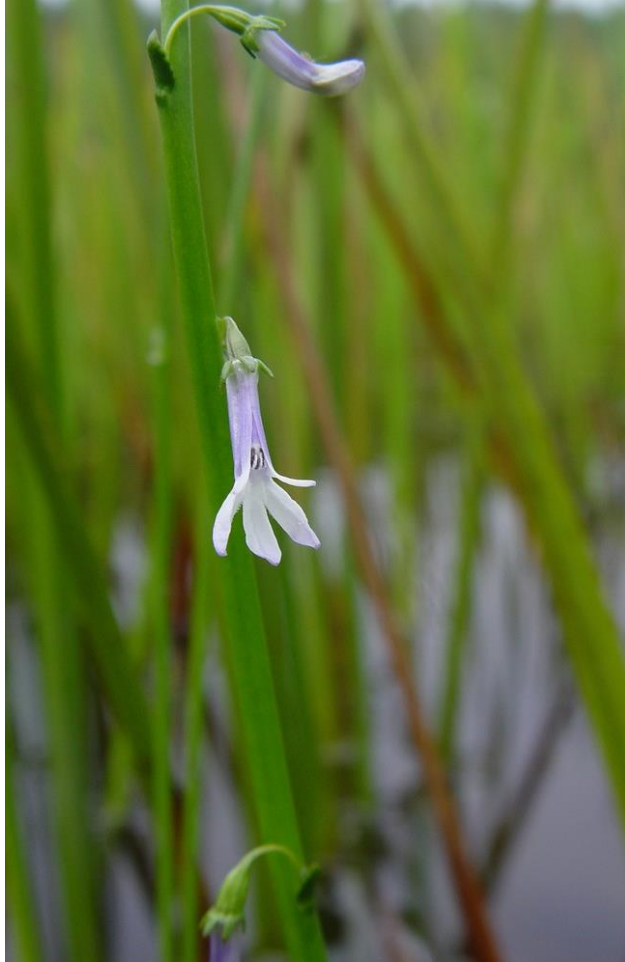
- Plants that are colorful or pretty or uniquely shaped
- The diversity and array formed by a number of plants
- The habitat created by the plant(s)
- The overall landscape created by the plants
- The feeling we get as we explore among the plants, discovering the treasures they hold



# CARDINAL FLOWER

(*LOBELIA  
CARDINALIS*)

*Native & scattered,  
usually along river banks*



# WATER LOBELIA (LOBELIA DORTMANNNA)

*Native & in high quality lakes*

BLUE FLAG IRIS  
*IRIS VERSICOLOR*

*Native & common*





**BUTTON BUSH  
(*CEPHALANTHUS  
OCCIDENTALIS*)**

*Native & common*



Wildflower.org



PINK  
FLOWERING  
WATER  
SMARTWEED  
(POLYGONUM)

*Native & scattered*



# YELLOW WATER LILY (*NUPHAR*)

*Native & very common*



# WHITE WATER LILY

(*NYMPHAEA  
ODORATA*)

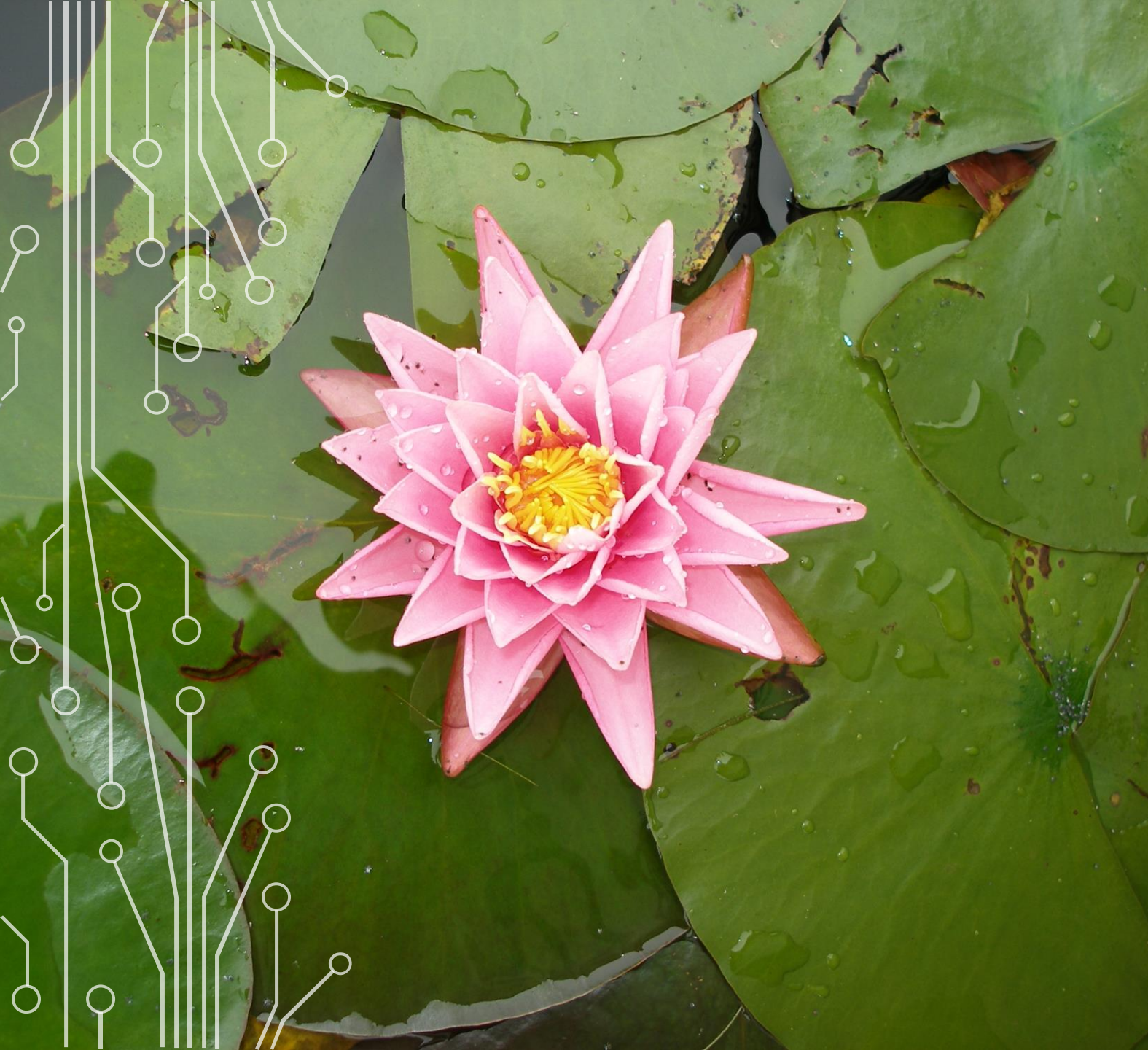
*Native & very common*



# SWAMP CANDLE (*LYSIMACHIA*)

*Native & common on lake edges*





PINK WATER LILY

NOT NATIVE

PLEASE DON'T  
PLANT



THANK YOU!



Amy P. Smagula, Limnologist & Exotic Species Program Coordinator

New Hampshire Department of Environmental Services

[Amy.Smagula@des.nh.gov](mailto:Amy.Smagula@des.nh.gov)

