

FIELDGUIDE



to the aquatic plants of Mirror Lake

August 2019

Prepared by:

Geosyntec
consultants

Prepared for:

Mirror Lake
Protective
Association





mirror lake

This Field Guide to the Aquatic Plants of Mirror Lake has been developed to assist in efforts to conduct regular aquatic vegetation monitoring at Mirror Lake.

New Hampshire lakes and ponds host a great variety of aquatic plants. If you find a plant in Mirror Lake which is not included in this field guide, there are a number of more comprehensive field guides that can be used as a reference for species identification. Some recommended references include the following:

- Aquatic Plants & Algae of New Hampshire's Lakes and Ponds. New Hampshire Department of Environmental Services. (Available online at: www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-05-30.pdf)
- G.E. Crow and C.B. Hellquist. 2000. Aquatic and Wetland Plants of Northeastern North America. The University of Wisconsin Press.
- Fassett, N.C. 1940. A Manual of Aquatic Plants. The University of Wisconsin Press.

This field guide is based on the results of an aquatic vegetation survey of Mirror Lake conducted by Geosyntec Consultants in August 2019. Emergent wetland plants were recorded only if they were rooted in standing water within the perimeter of Mirror Lake. The species identified during the survey are listed in the table on the following page.

Funding for this Field Guide was provided by a grant from the New Hampshire Department of Environmental Services with funding from the US Environmental Protection Agency under Section 319 of the Clean Water Act.

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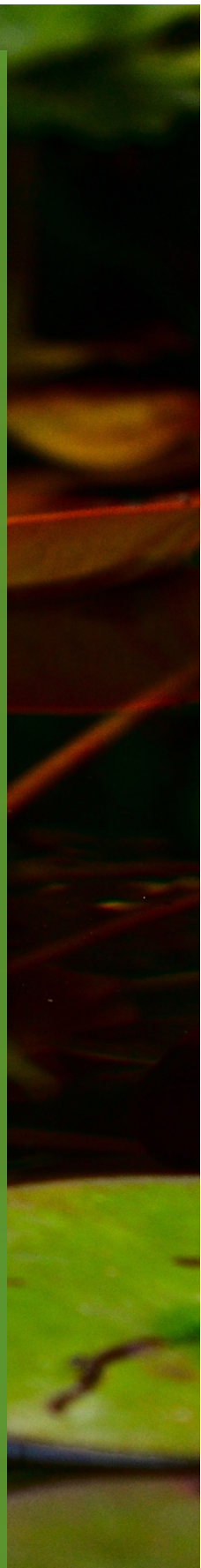
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Musk Grass (*Chara vulgaris*)

Musk grasses have a distinct musky odor and are brittle when crushed between two fingers. Similar-looking vascular plants such as Bushy Pondweeds (*Najas* spp.) and Coontail (*Ceratophyllum demersum*) do not produce an odor when crushed.



Illustration from: G.E. Crow and C.B. Hellquist. 1982. Aquatic Vascular Plants of New England. New Hampshire Agricultural Experiment Station.

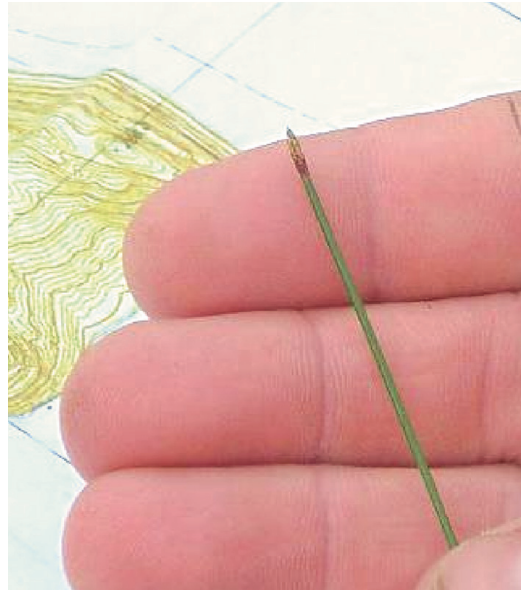
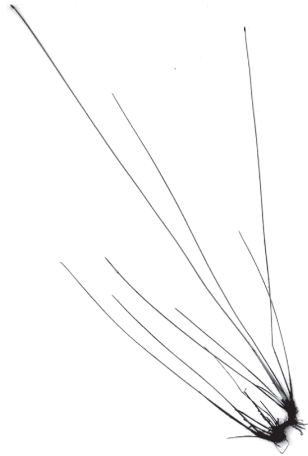
Waterwort (*Elatine minima*)

This tiny plant is typically found growing in shallow water. Its leaves are rounded at the tip and up to 4 mm long.



Spike Rush (*Eleocharis robbinsii*)

The soft green stems of this plant often grow clumped together with oval shaped spikelets forming at the tips.



Waterweed (*Elodea canadensis*)

This *Elodea* species has leaves with blunt tips that whorl around the stem (3 or 4 leaves per whorl). This plant can be confused with the *Najas* species, which have opposite leaves rather than whorled leaves.



Illustration from: Crow, G.E. and Hellquist, C.B. 1982. Aquatic Vascular Plants of New England. New Hampshire Agricultural Experiment Station.



Quillwort (*Isoetes* sp.)

The leaves of this plant become narrower from the base toward the sharply pointed tip. This plant looks similar to Pipewort, but does not have cross lines on its roots.

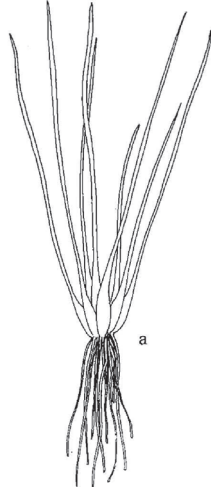


Illustration from: G.E. Crow and C.B. Hellquist. 2000. Aquatic and Wetland Plants of Northeastern North America. The University of Wisconsin Press.

Bushy Pondweed (*Najas flexilis*)

Bushy Pondweed can be distinguished from other *Najas* species by the pointed tips of its oppositely arranged leaves.

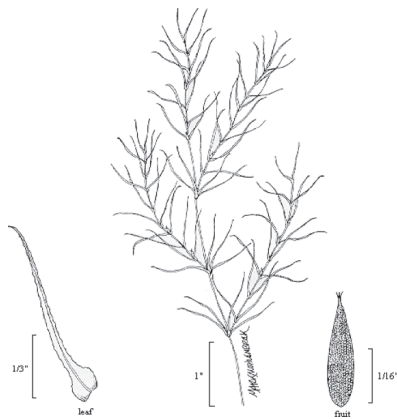


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. Aquatic Vascular Plants of New England. New Hampshire Agricultural Experiment Station.



Big-leaf Pondweed (*Potamogeton amplifolius*)

This common pondweed species is distinguished by its large, curved submersed leaves which are typically 3-7 cm wide.

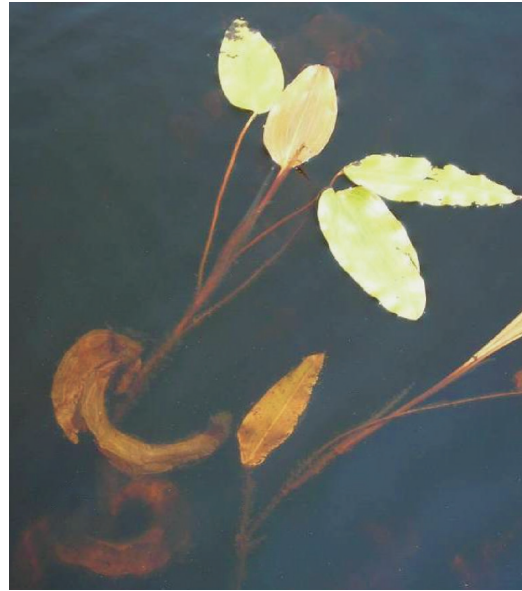


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. Aquatic Vascular Plants of New England. New Hampshire Agricultural Experiment Station.

Snailseed Pondweed (*Potamogeton bicupulatus*)

This pondweed has submersed and floating leaves that are spirally arranged. The floating leaves, although not always present, have 3-7 veins.



Illustration from: Britton & Brown's Illustrated Flora of the Northern United States and Canada, 2nd ed.



Ribbonleaf Pondweed (*Potamogeton epihydrus*)

The floating leaves of this pondweed, when present, are up to 3.5" long and up to 1.75" wide. The submersed leaves look wilted and have a lightly colored stripe down the center.

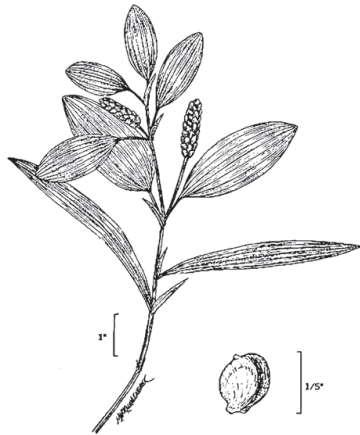


Illustration from: USDA-NRCS PLANTS Database / USDA NRCS. *Wetland flora: Field office illustrated guide to plant species.*

Purple Bladderwort (*Utricularia purpurea*)

The branches of this bladderwort form clusters with bladders located at the tips. When in bloom, the flowers are purple.

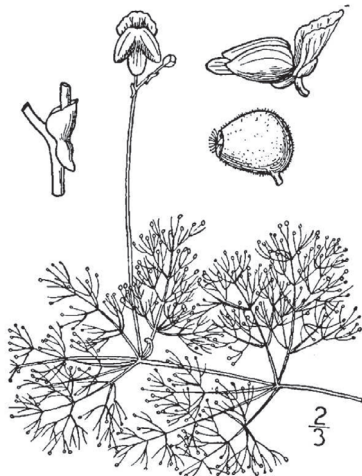


Illustration from: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 3: 226.

Wild Celery (*Vallisneria americana*)

Wild celery has ribbon-like leaves with bluntly rounded tips. A distinct light green stripe runs down the center of the leaves, which is most visible when the leaf is held up to light.

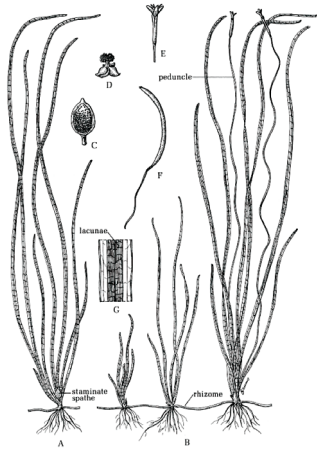


Illustration from: G.E. Crow and C.B. Hellquist. 1982. Aquatic Vascular Plants of New England. New Hampshire Agricultural Experiment Station.

Tapegrass (*Vallisneria americana*)

Plants are long, limp, flat, with ribbon like leaves and an obvious band down the middle of the leaf called a lacunae band



Watershield (*Brasenia schreberi*)

There is a jelly-like substance on the underside of this plant's oval-shaped leaves and also on the plant's stem. The leaves are 2"-3" long and there may be dull colored red flowers present.

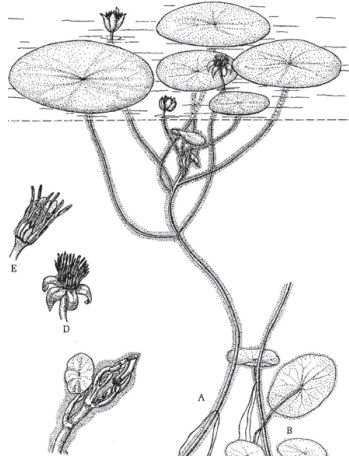


Illustration from: G.E. Crow and C.B. Hellquist. 2000. *Aquatic and Wetland Plants of Northeastern North America*. The University of Wisconsin Press.

Duckweeds (*Lemna* species)

Plants are tiny, appearing like an algae scum on the surface, but are obvious as small plants; they lack an obvious stem and have a single, flat oval leaf; can have no root or a simple hanging root.



Yellow Water Lily (*Nuphar* spp.)

Yellow water lilies have yellow flowers and large floating leaves with rounded lobes that frequently overlap.

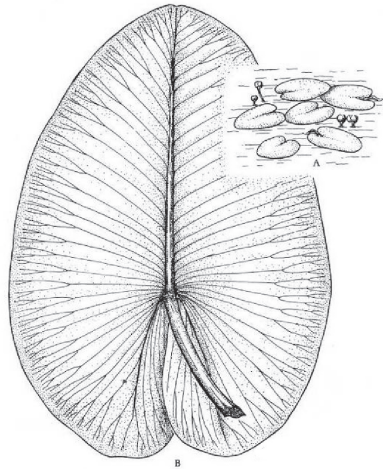


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.

White Water Lily (*Nymphaea odorata*)

White water lilies have white flowers and floating leaves with pointed lobes that rarely overlap.

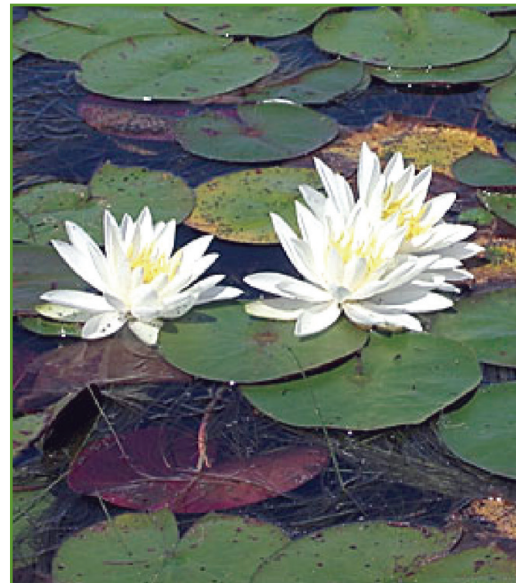
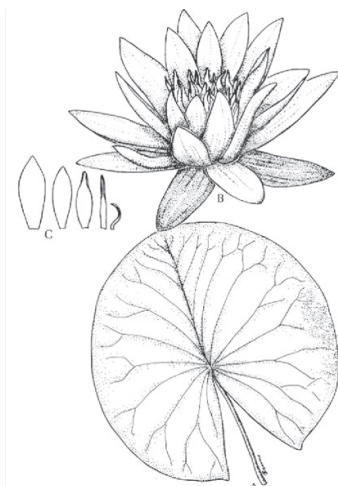


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station



FLOATING LEAF SPECIES

Little Floating Heart (*Nymphoides cordata*)

This plant has heart-shaped leaves roughly the size of a silver dollar and small white flowers. Its roots can be found bunched on the stem just below the surface of the water.



Illustration from: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 3: 18.

Floating-Leaf Pondweed (*Potamogeton natans*)

Submersed leaves are narrow (1-2 mm wide, 10-20 cm long), often disintegrating with age, tapering to an obtuse tip. Floating leaves are oval shaped and 3-10 cm long.



Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.

aquatic plants of mirror lake

Water Willow (*Decodon verticillatus*)

This emergent shrub can grow up to 6 feet tall and has purple flowers when in bloom.

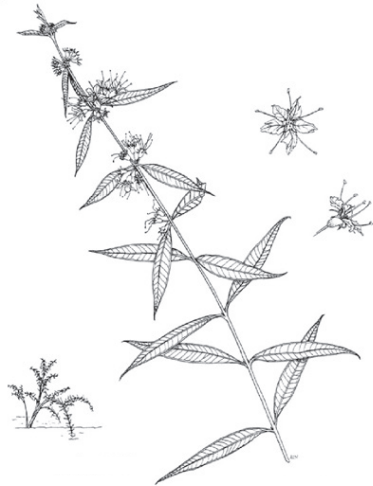


Illustration from: IFAS, Center for Aquatic Plants, University of Florida, Gainesville, 1996

Three Way Sedge (*Dulichium arundinaceum*)

Stem is jointed, round and hollow. Leaves radiate at three angles and cluster at the top while the bottom is bare stem.



Pipewort (*Eriocaulon septangulare*)

The most prominent feature of this plant is its white roots that have cross lines on them. At the end of the Pipewort's stalk there often is a button-like white flower that emerges.

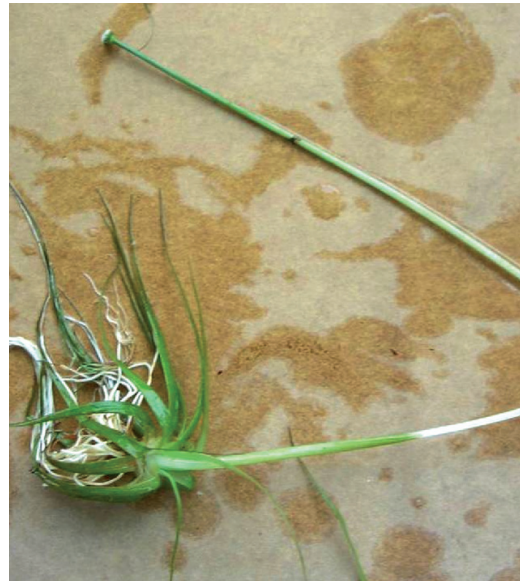
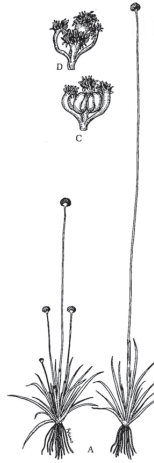


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.

Waterweed (*Elodea nuttallii*)

This *Elodea* species has leaves with pointed tips that whorl around the stem (3 or 4 leaves per whorl). This plant can be confused with *Elodea canadensis*, which has leaves with blunt tips, and with *Najas* species that have opposite leaves rather than whorled leaves.

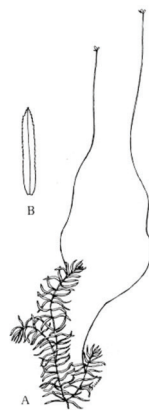


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.

Jewelweed (*Impatiens capensis*)

Bright orange flower is pouch-like with alternately arranged oval-shaped leaves.



Lobelia (*Lobelia cardinalis*)

Simple alternate leaves and two-lipped bright red tubular flowers with five lobes.



Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.



Creeping Primrose (*Ludwigia palustris*)

Stems are usually prostrate, creeping, branched and mat-forming. Elliptic leaves tapered at the base.



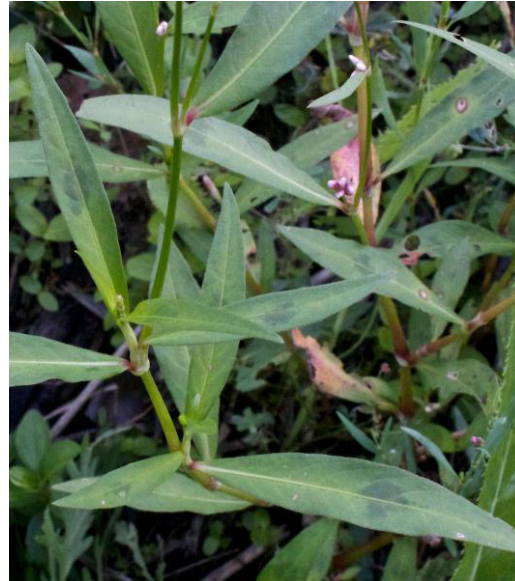
Swampcandle (*Lysimachia terrestris*)

Flowers are star shaped and yellow. Petals have red dots at the base.



Smartweeds (Polygonum)

Swollen stem joints with alternate long, linear, pointed leaves.
Flowers are pink or white and spike-like.



Pickereelweed (Pontederia cordata)

This perennial emergent plant can grow up to 4' tall. The leaves are waxy and can vary in size and shape. The violet flowers grow at the end of a vertical spike



Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.



Soft-Stem Bulrush (*Scirpus validus*)

This Elodea species has leaves with pointed tips that whorl around the stem (3 or 4 leaves per whorl). This plant can be confused with *Elodea canadensis*, which has leaves with blunt tips, and with *Najas* species that have opposite leaves rather than whorled leaves.

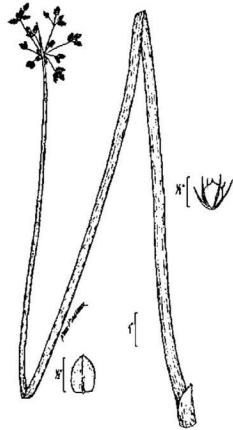


Illustration from: USDA, NRCS. 2011. The PLANTS Database (<http://plants.usda.gov>, 29 June 2011). National Plant Data Team, Greensboro, NC 27401-4901 USA.

Burr-reed (*Sparganium* sp.)

Bur-reed is an emergent wetland plant that typically grows up to two feet tall. Its bright green, strap-like leaf blades grow up to 1 inch wide. Its spherical flower heads are green in early season, becoming brown and bur-like later.



Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.

Steeple Bush (*Spiraea tomentosa*)

Upright, slender wand-like plants with pink flowers.



Cattail (*Typha latifolia*)

Cattails are easily identified by their tall, sword-shaped leaves and fruiting spikes. Broad-leaved Cattail is distinguished from Narrow-leaved Cattail by its broader leaves and fruiting spikes that don't have a separation between the male and female sections.

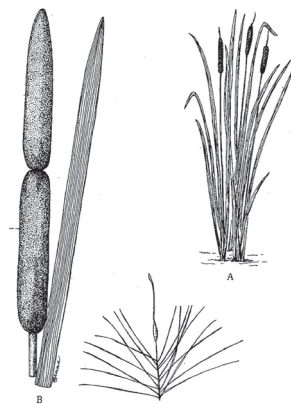
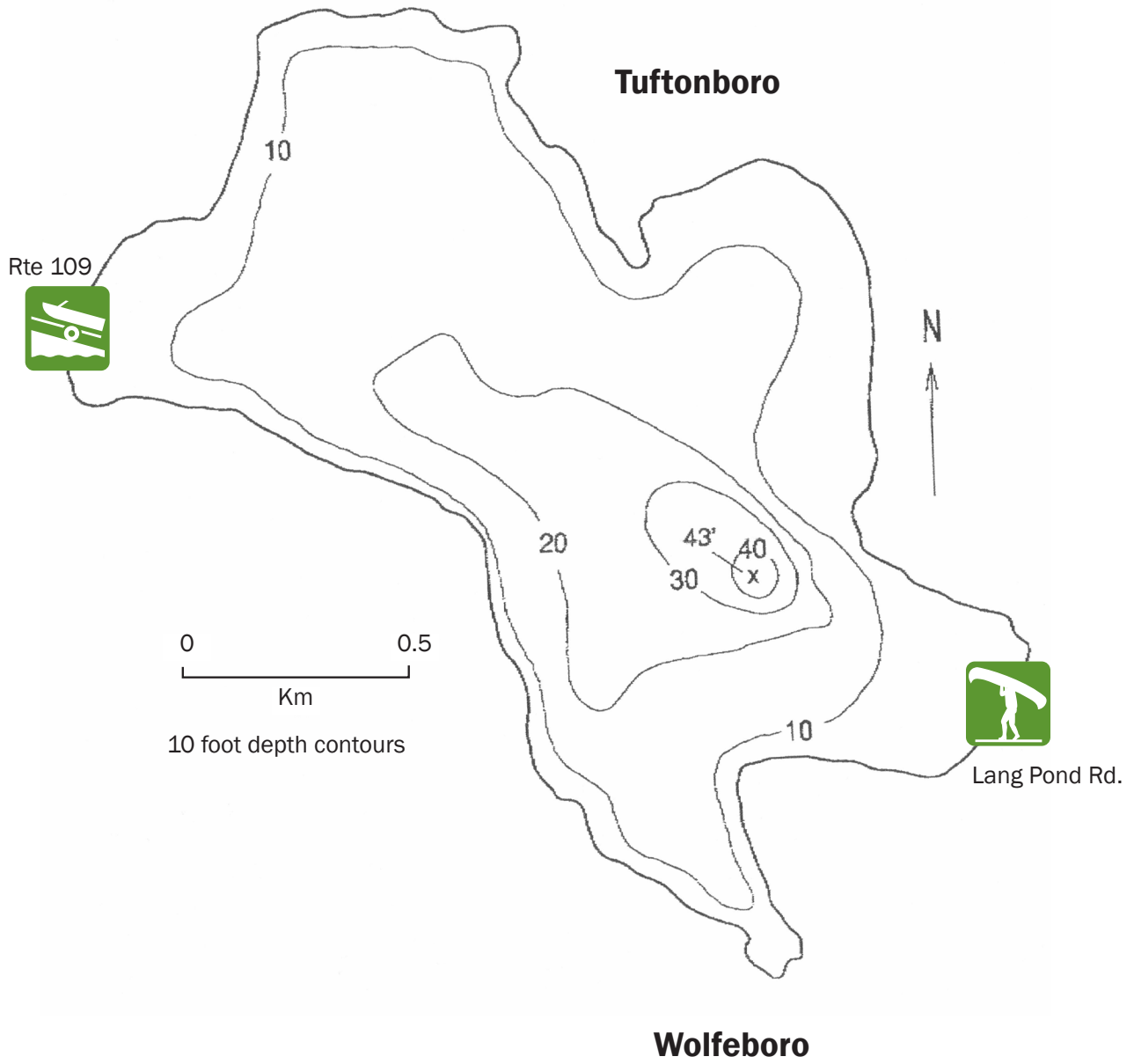


Illustration from: Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England*. New Hampshire Agricultural Experiment Station.



Map of Mirror Lake



PLEASE HELP US STOP THE SPREAD OF THESE NINE EXOTIC AQUATIC PLANTS ALREADY IN NH WATERBODIES!



A. Smagula, NHDES

Variable Milfoil
Myriophyllum heterophyllum



A. Smagula, NHDES

Fanwort
Cabomba caroliniana



C.B. Hellquist, MA/CLA

Eurasian Water-Milfoil
Myriophyllum spicatum



A. Smagula, NHDES

Brazilian Elodea
Egeria densa



K. Hahnel, ME DEP

Curly-leaf Pondweed
Potamogeton crispus



A. Bove, VT DEP

European Naiad
Najas minor



K. Warren, NH DES

Water Chestnut
Trapa natans



A. Smagula, NH DES

Purple Loosestrife
Lythrum salicaria



A. Smagula, NHDES

Common Reed
Phragmites australis

PLEASE HELP US PREVENT THE INTRODUCTION OF THESE FIVE EXOTIC AQUATIC PLANTS NOT YET IN NEW HAMPSHIRE!



I.F.A.S. Center for Aquatic Plants

Parrot Feather
Myriophyllum aquaticum



C.B. Hellquist

Yellow Floating Heart
Nymphoides peltata



I.F.A.S. Center for Aquatic Plants

Hydrilla
Hydrilla verticillata

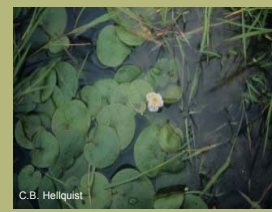


C.B. Hellquist

Flowering Rush
Butomus umbellatus



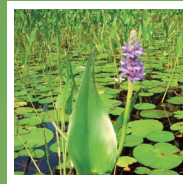
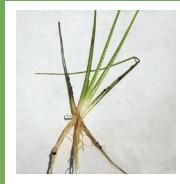
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C.B. Hellquist

European Frogbit
Hydrocharis morsus-ranae

Cover photos by Amy Smagula and Jason Smith



Mirror Lake

