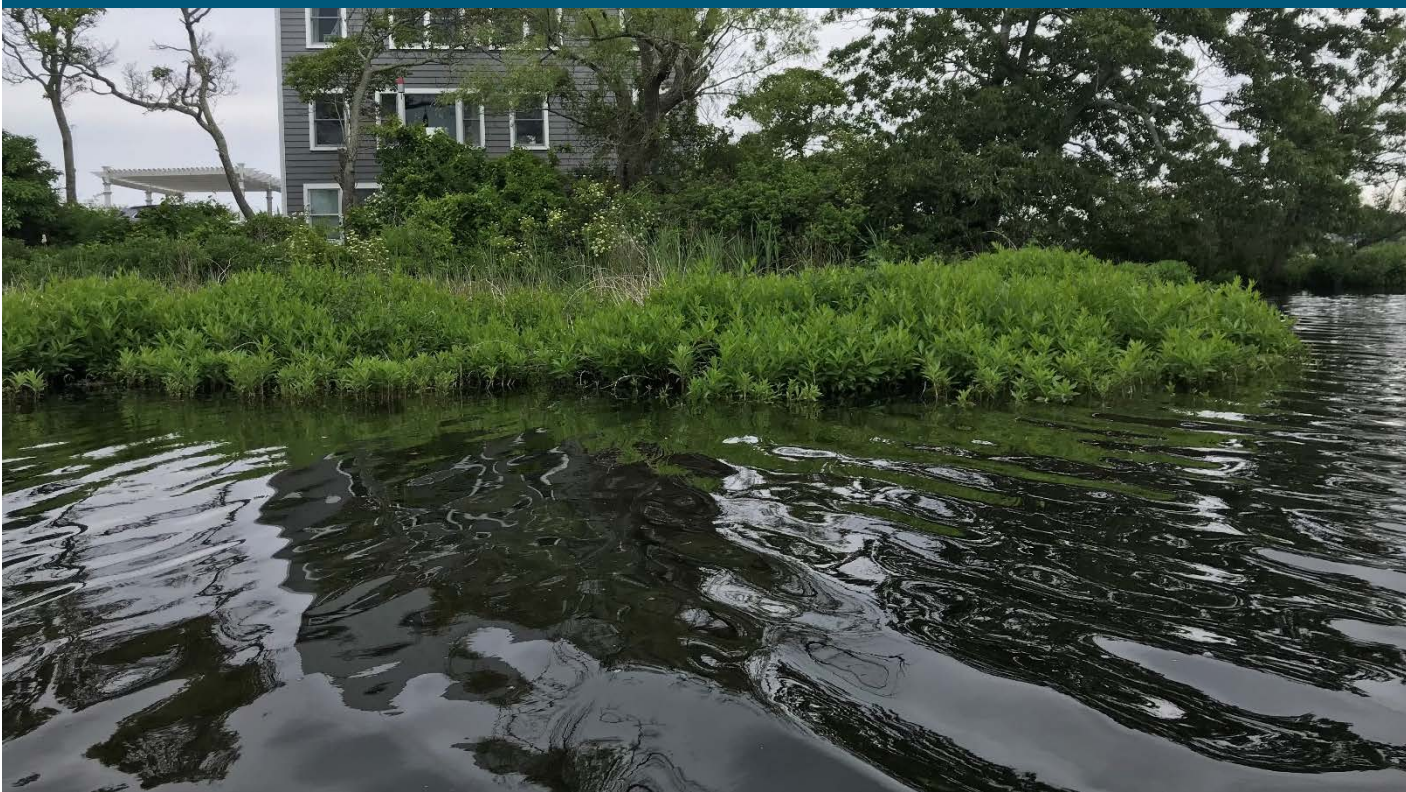


# Field Guide

to the

## Aquatic Macrophytes of Bartlett Pond

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Prepared for:



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Public Health Department**  
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**DRAFT**



# Overview

This field guide includes submerged, floating, and floating-leaved species observed by ESS Group, Inc. during comprehensive surveys of Bartlett Pond in 2019. Some of the more conspicuous emergent species observed in the reservoir system are also presented. Additionally, this field guide provides information on exotic invasive species that have been observed nearby and may be at higher risk for introduction to the pond.

Species profiles are presented in alphabetical order by scientific name with key identification features, habitat, and similar species noted. Photos and line drawings, when available, accompany each species account.

The observed distribution of each species in Bartlett Pond is mapped.

All line drawings courtesy of the United States Department of Agriculture USDA-NRCS Plants Database. Photographs are by ESS Group, Inc. or in the public domain, unless otherwise noted.

# Aquatic Plants of Bartlett Pond



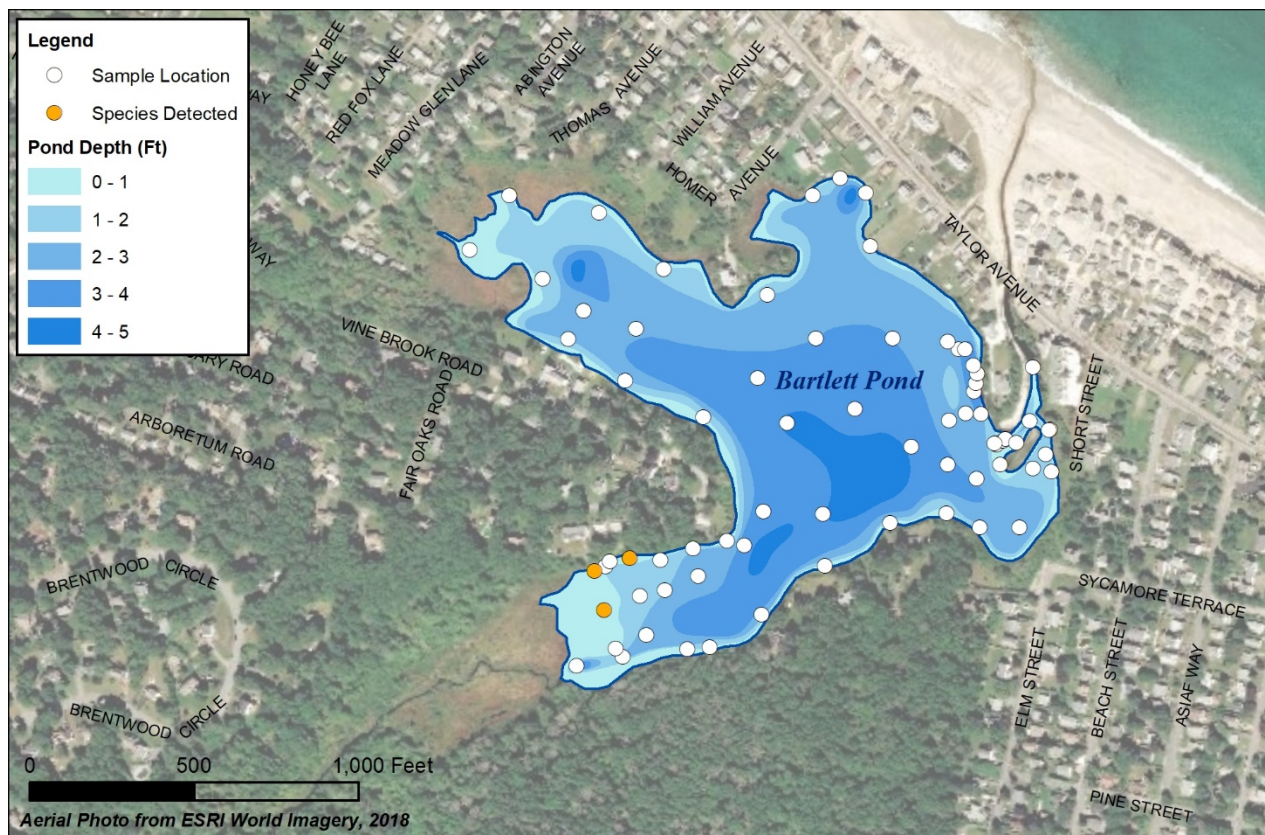
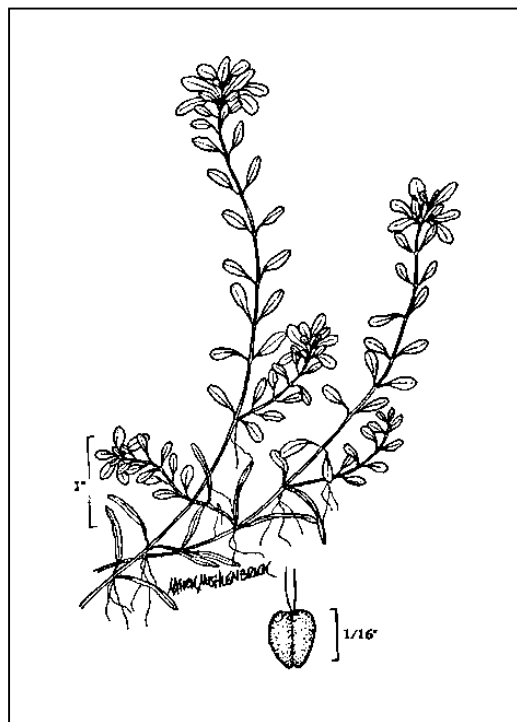
## *Callitriche heterophylla* – Water Starwort

**Key Features:** Opposite leaves either linear (submersed) or spatulate (floating). Highly variable.

**Habitat:** Muddy shores and shallow, protected waters of ponds and lakes.

**Growth Type:** Submerged/floating-leaved

**Similar Species:** *Potamogeton* spp., *Najas* spp.



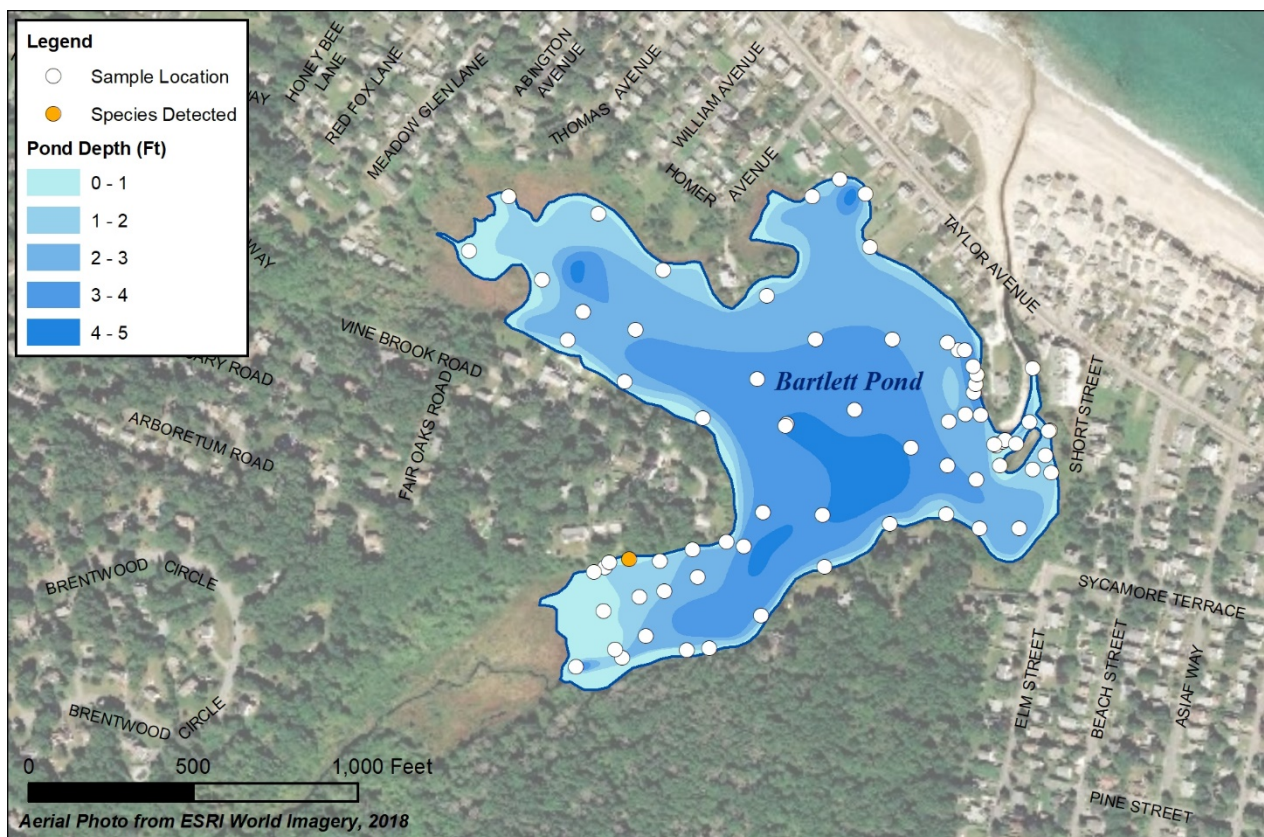
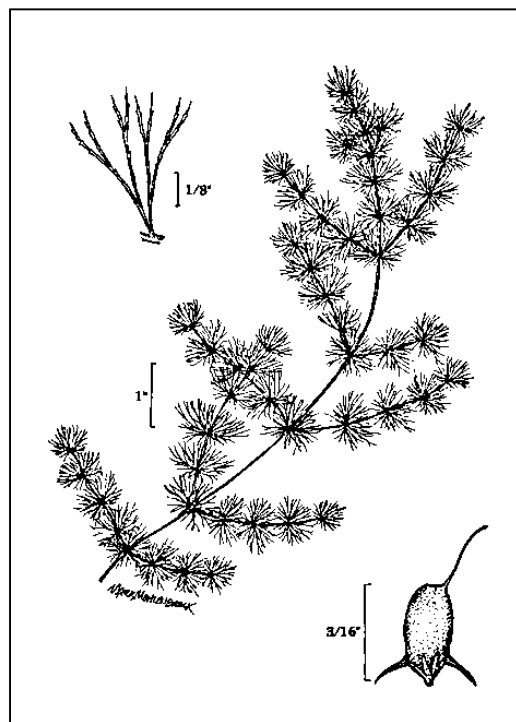
## *Ceratophyllum demersum* – Coontail

**Key Features:** Finely dissected, whorled leaves are branched. Leaves often cluster together near the stem tips giving them a look reminiscent of a raccoon tail. Plants are rootless.

**Habitat:** Ponds, lakes and other sluggish waters. Can grow to nuisance levels.

**Growth Type:** Submerged-floating

**Similar Species:** *Myriophyllum* spp.



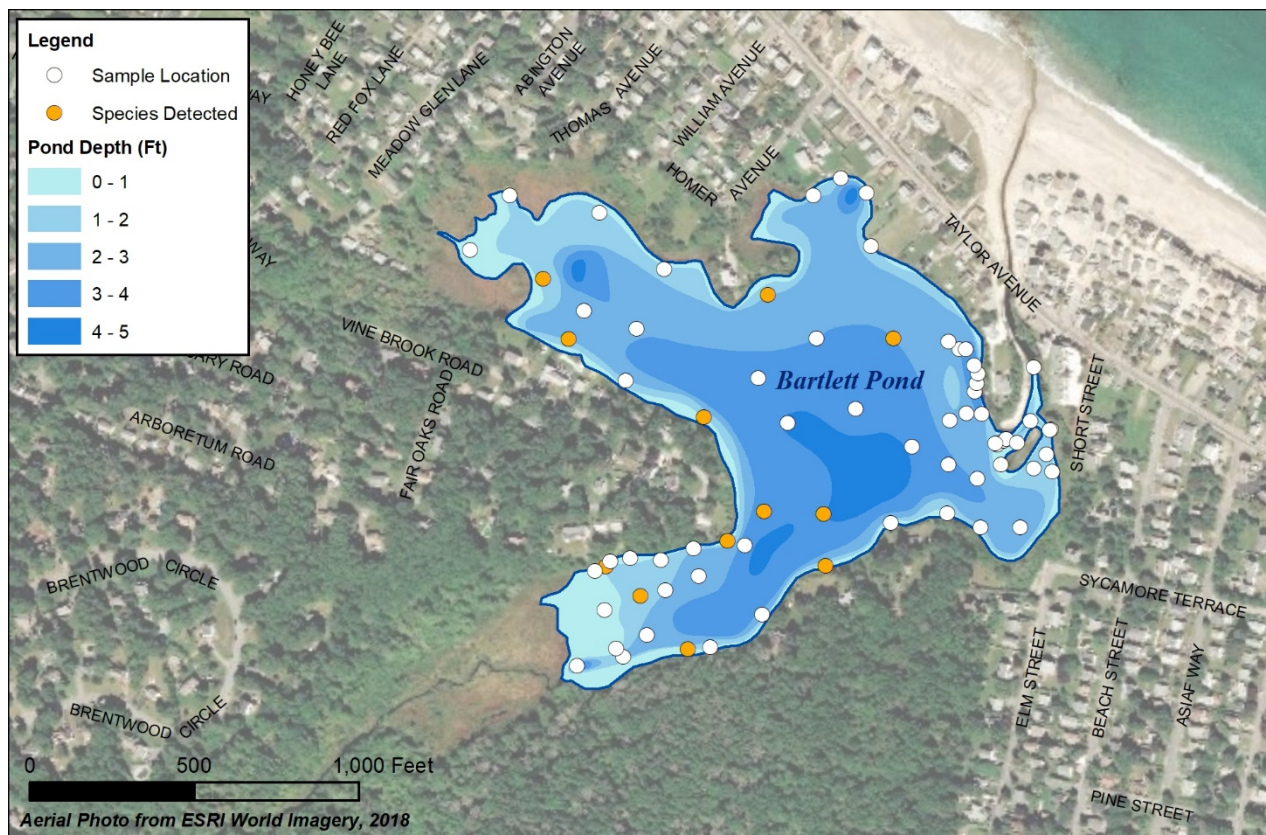
## *Chlorophyceae spp.* – Filamentous Green Algae

**Key Features:** Green, cotton-like masses that can either be free-floating or attached to rocks, plants, or sediments. May feel stringy and/or slimy. The fine green filaments have no flowers, stems, leaves, or roots.

**Habitat:** Deep to shallow lakes and ponds. Can grow to nuisance levels.

**Growth type:** Alga

**Similar Species:** None.



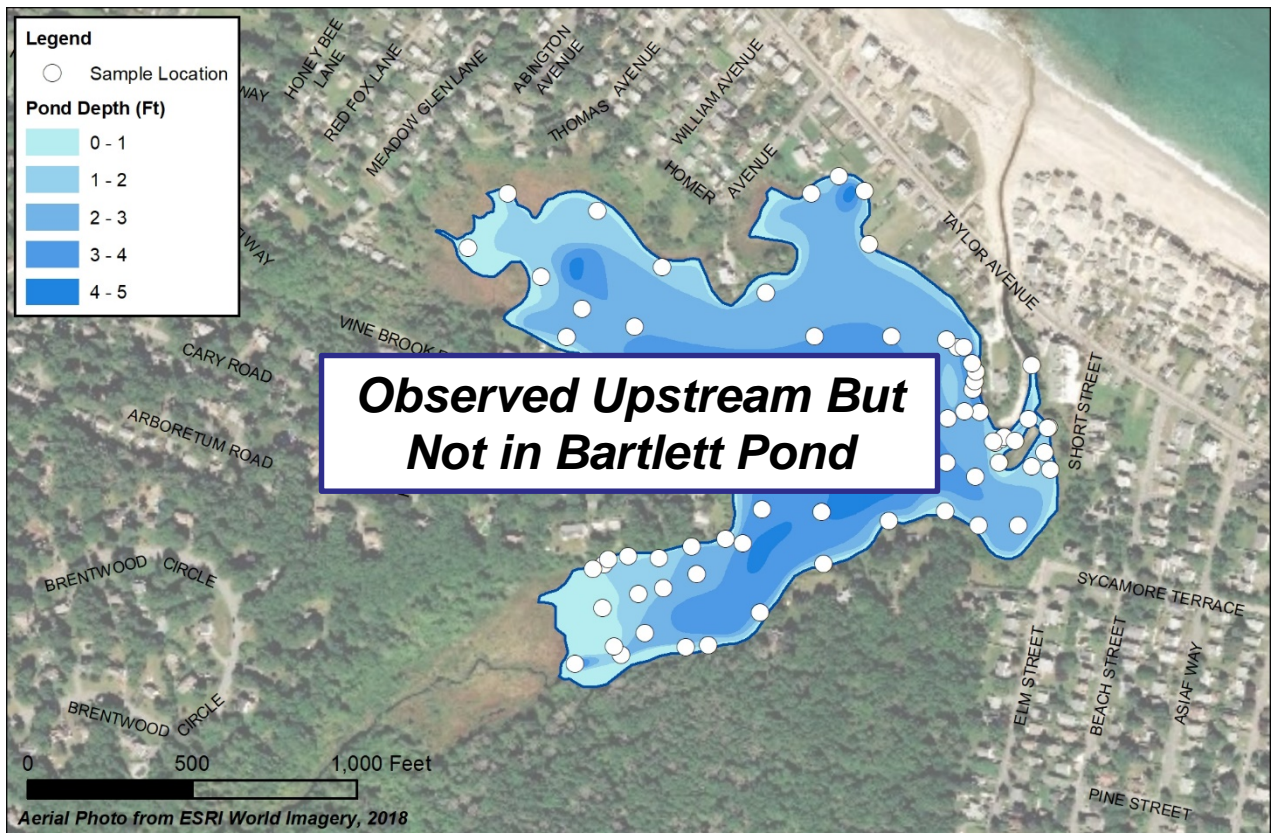
## *Eichhornia crassipes* – Water Hyacinth

**Key Features:** Thick, glossy, oval-shaped leaves float above the water surface and range from 10 to 20 cm across. Long, spongy, bulbous stems float on the water and may rise above the surface of the water as much as 3 feet. Feathery, freely hanging roots are purple-black. An erect stalk supports a single spike of 8-15 lavender to pink flowers. Each flower has six petals.

**Habitat:** Slow-moving waters of lakes and ponds. Can form dense, extensive monocultures.

**Growth Type:** Floating

**Similar Species:** None.



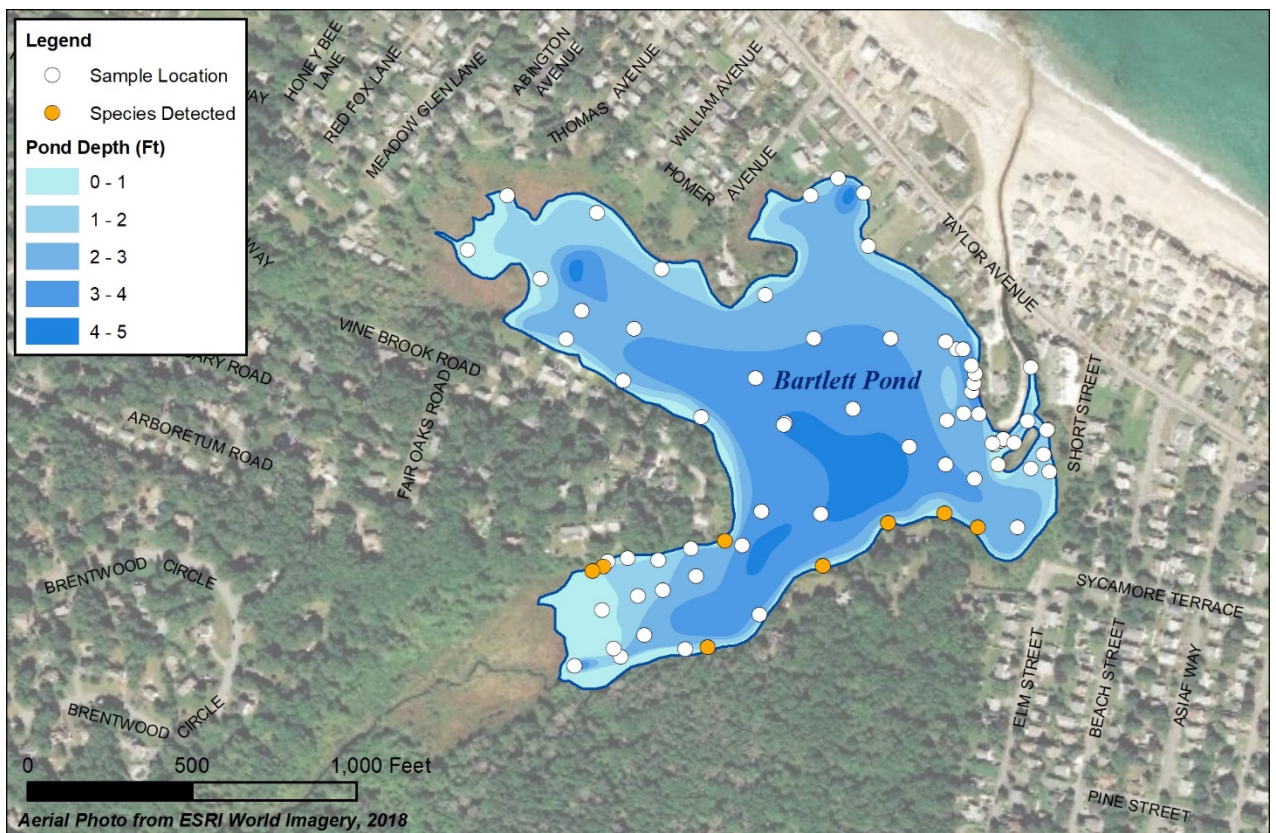
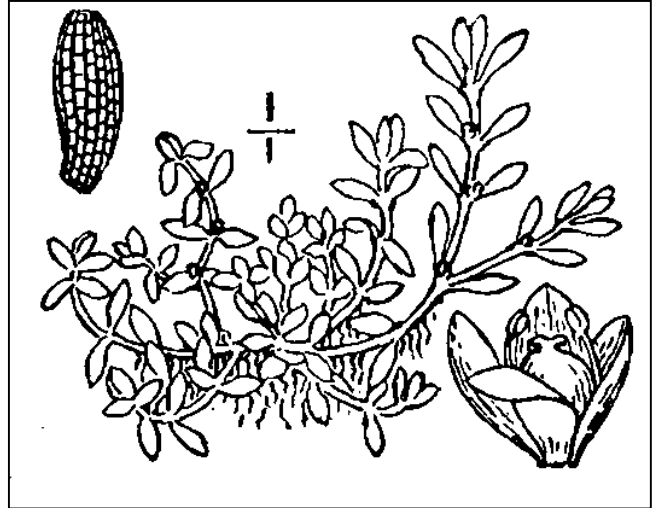
## *Elatine* spp. – Waterwort

**Key Features:** Tiny plant. Opposite leaves are small and rounded and each pair is offset from the next by 90 degrees.

**Habitat:** Often found growing in scattered patches on sand or gravel substrates in the shallow littoral zone.

**Growth Type:** Submerged (dominant), emergent (secondary)

**Similar Species:** *Gratiola aurea* (submersed form)



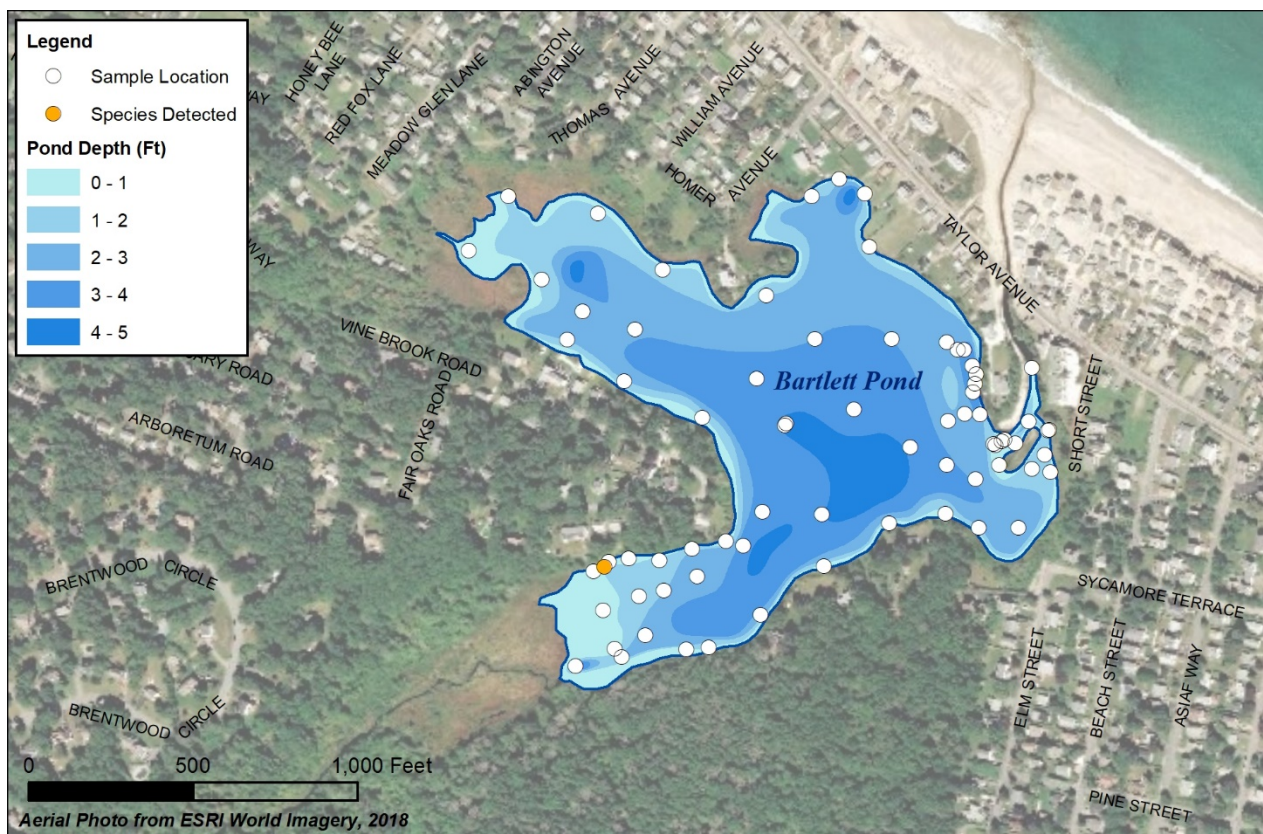
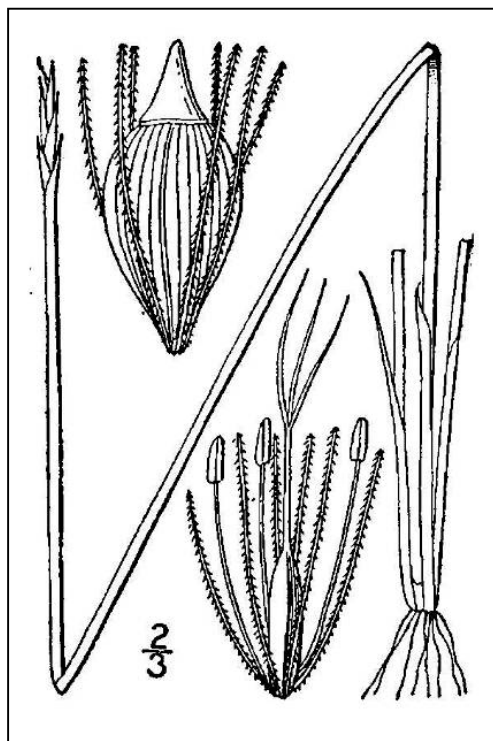
## *Eleocharis* spp – Spikerush

**Key Features:** Leaves are bladeless sheaths arising from clumps, rhizomes or stolons. Emergent stems may send up a solitary spikelet.

**Habitat:** Shallow waters and edges of ponds and lakes. Submersed forms may form monoculture or multi-species mats.

**Growth Type:** Submerged/emergent

**Similar Species:** *Scirpus* spp., *Juncus* spp.



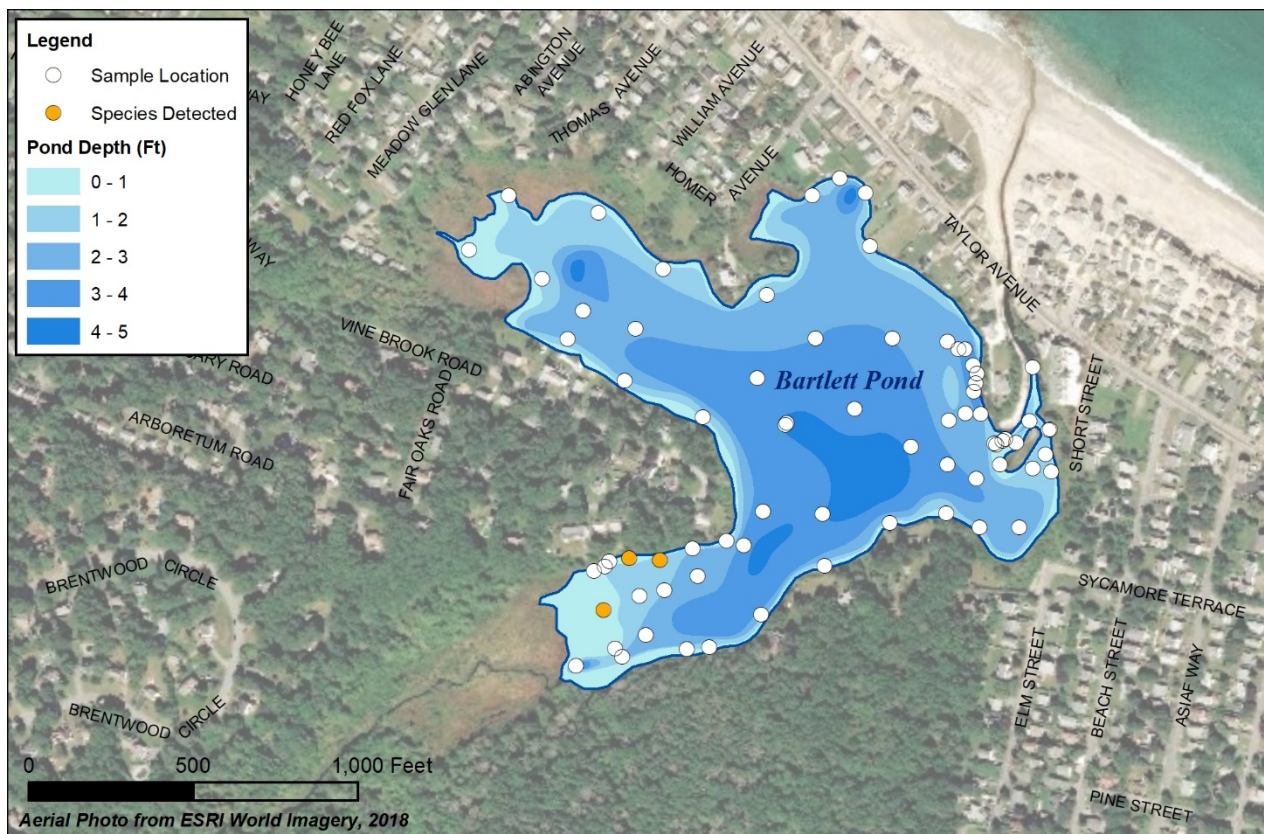
## *Elodea canadensis* – Canadian waterweed

**Key Features:** Whorls of 3 to 4 leaves with bunching near the stem tips. Leaves are relatively wide and blunt tipped. Small flowers occasionally found arising from long pedicels.

**Habitat:** Alkaline to circumneutral ponds, lakes and slow streams.

**Growth Type:** Submerged

**Similar Species:** *Elodea nuttallii*



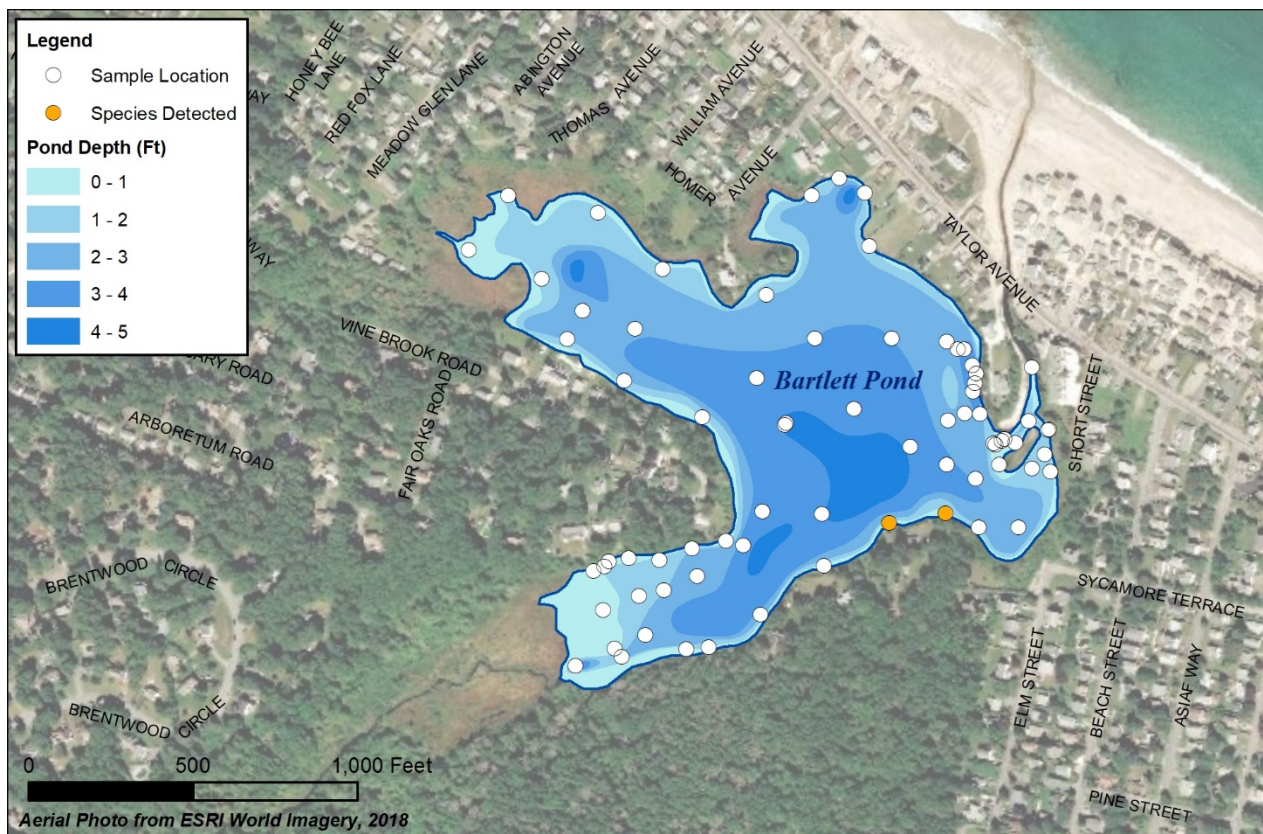
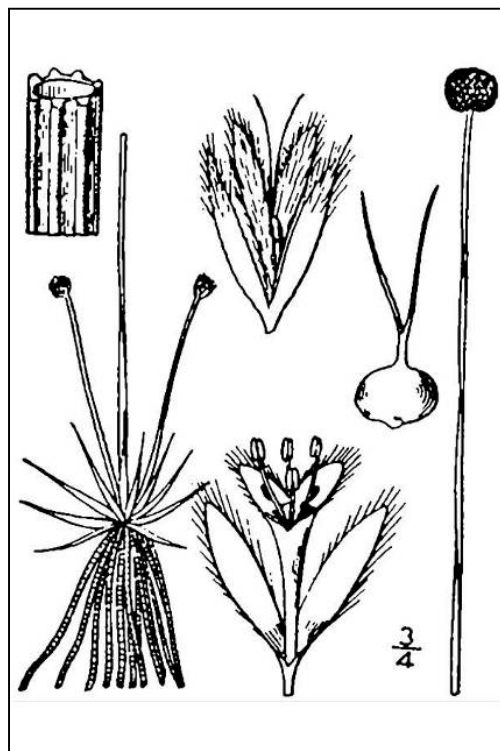
## *Eriocaulon aquaticum* – Sevenangle Pipewort

**Key Features:** Roots are septate (have fine lines running the circumference of the root). Clumped, pointed leaves. In July and August, buttonlike flower clusters may emerge from the water (see inset below).

**Habitat:** Shores and shallow edges of lakes and ponds.

**Growth Type:** Submerged

**Similar Species:** *Isoetes* spp., *Sagittaria* spp.



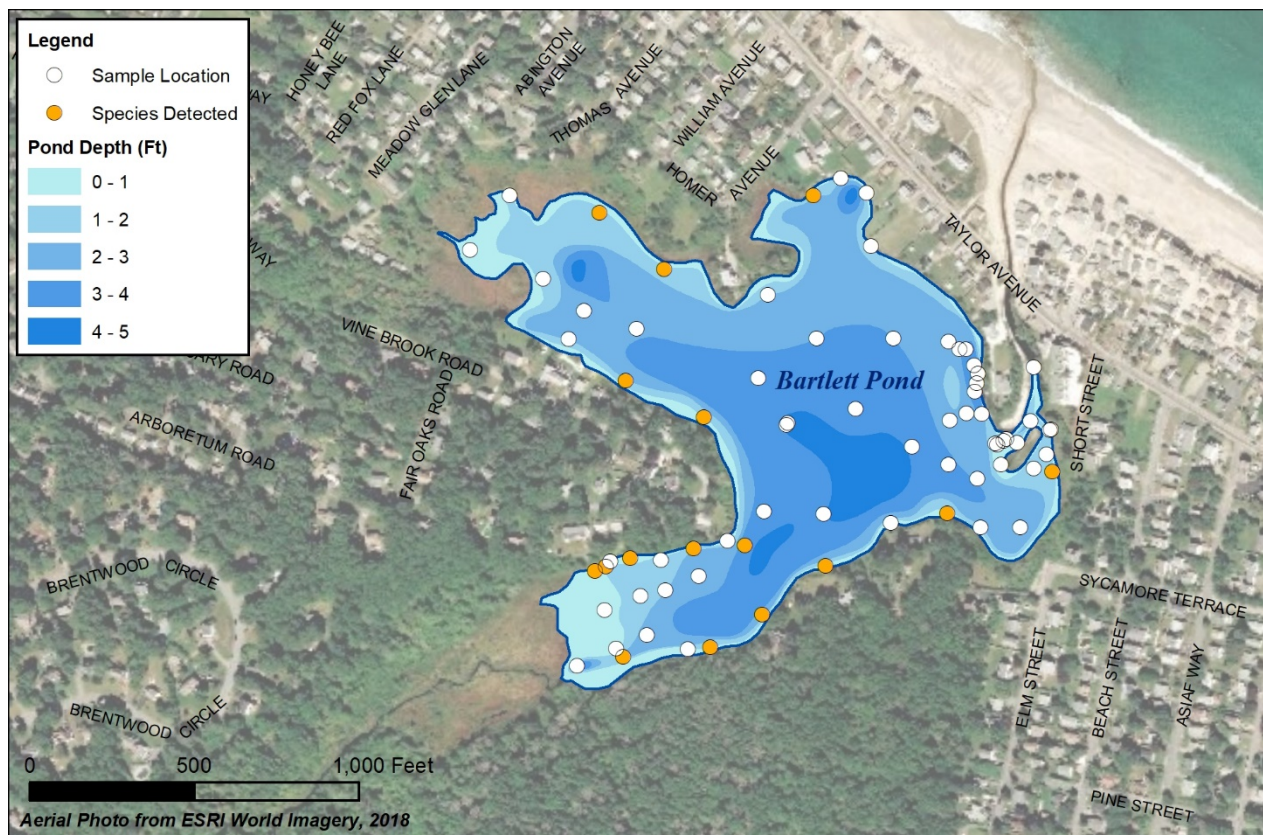
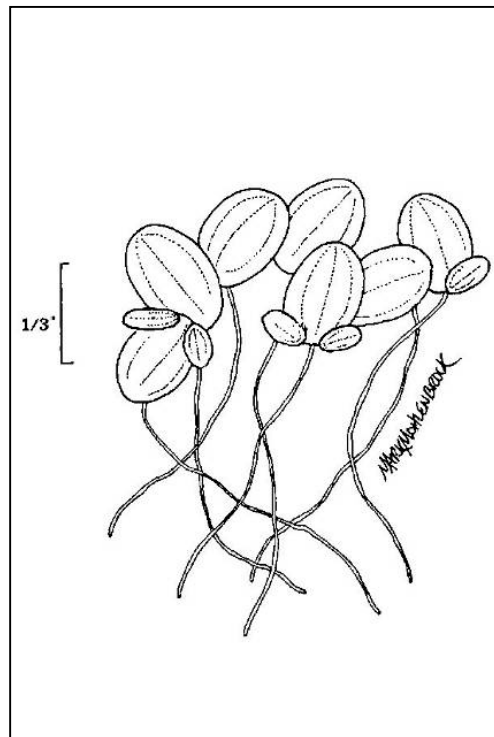
## Lemna spp. – Duckweed

**Key Features:** Small free-floating plant with up to five green leaves per plant. Each leaf has one root.

**Habitat:** The surface of ponds, lakes and other sluggish waters. Capable of rapid vegetative reproduction – can cover the surface of protected coves.

**Growth Type:** Floating

**Similar Species:** *Wolffia* spp., *Spirodela polyrrhiza*



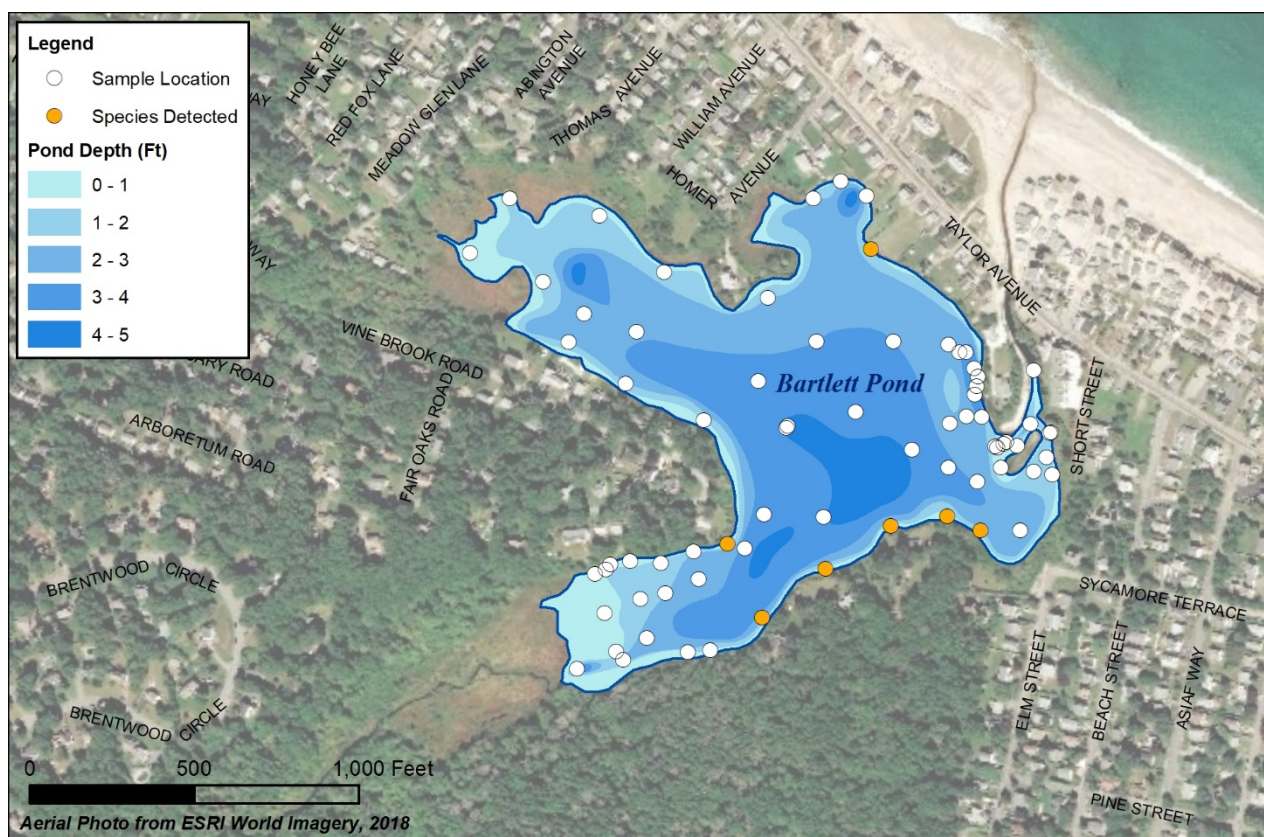
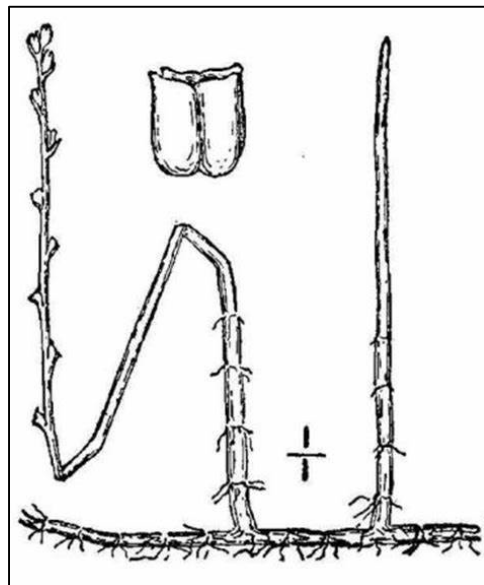
## *Myriophyllum tenellum* – Slender Water-Milfoil

**Key Features:** Long stems with small or no leaves. For each node there is one leaf attached.

**Habitat:** Shallow areas of ponds, lakes and other sluggish waters.

**Growth Type:** Submerged

**Similar Species:** *Eleocharis* spp, *Isoetes* spp.



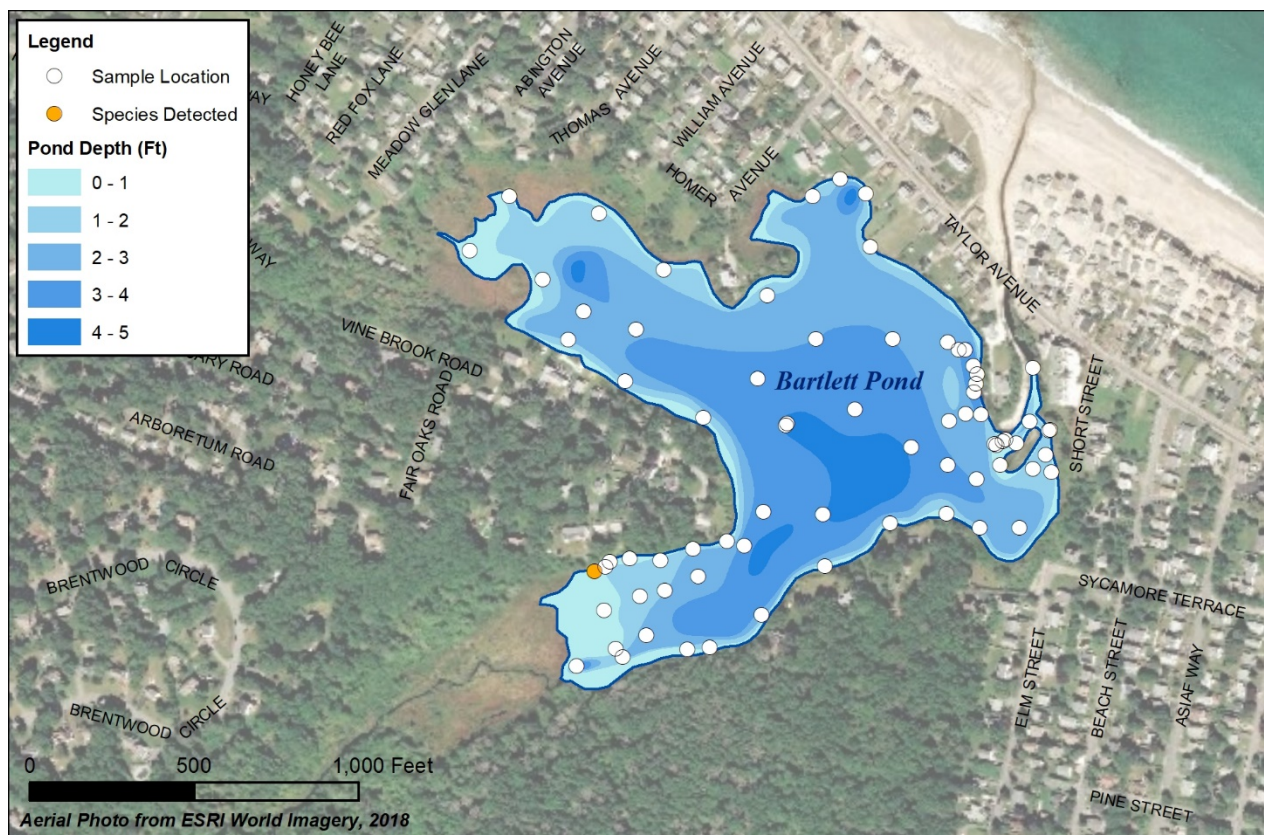
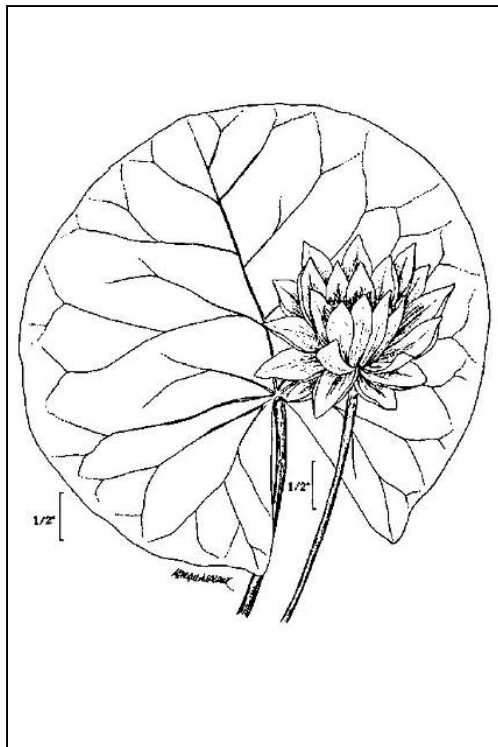
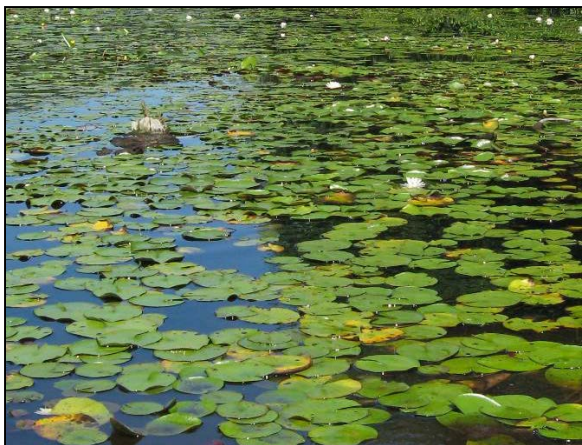
## *Nymphaea odorata* – White Water Lily

**Key Features:** Floating leaves 2"-18" wide with sharp lobes behind petiole. Veins appear to radiate more strongly from petiole than central midrib. Large white flowers appear throughout summer.

**Habitat:** Shallow waters of ponds, lakes and sluggish streams on organic substrates.

**Growth Type:** Floating-leaved

**Similar Species:** *Nelumbo lutea*, *Nymphaea odorata*, *Nymphoides peltata*



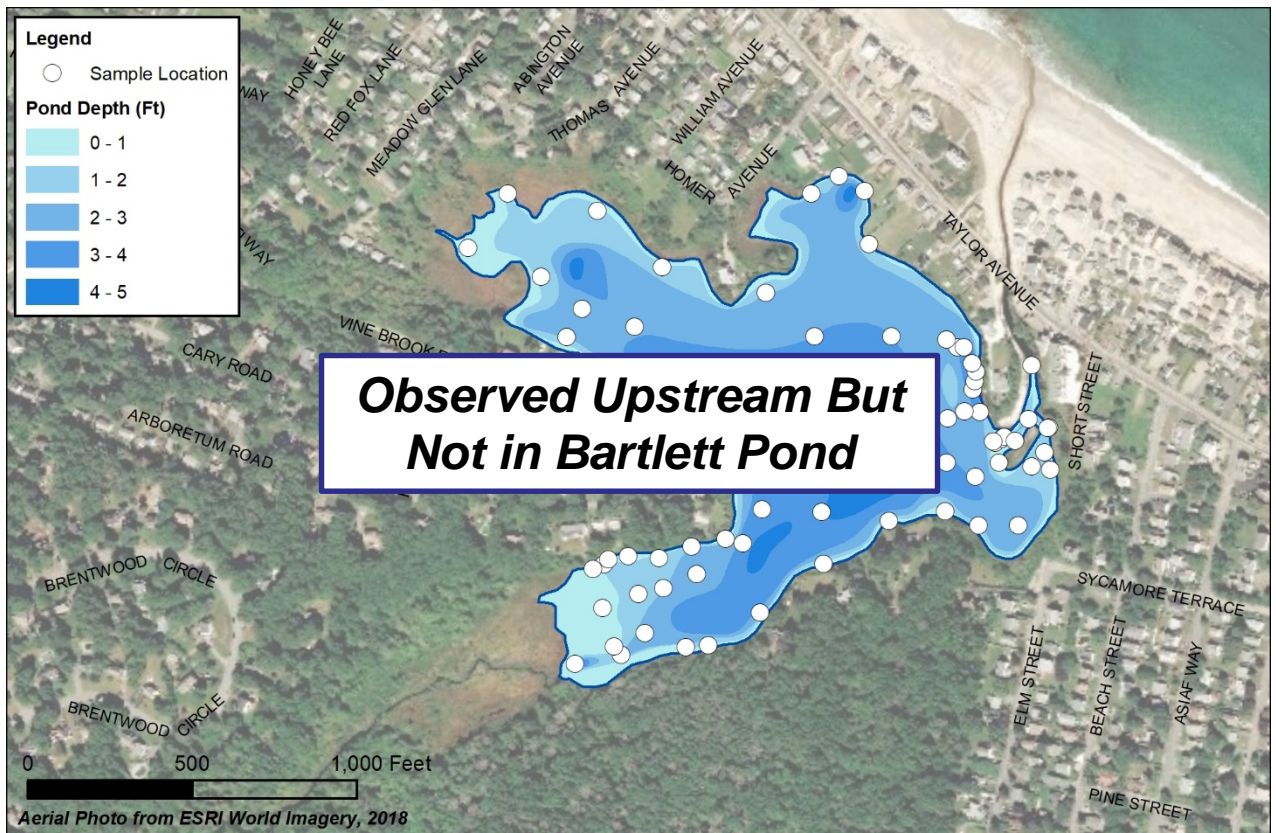
## *Pistia stratiotes*– Water Lettuce

**Key Features:** Thick, soft leaves form rosettes and float above the water surface and can grow up to 15 cm long. Feathery, freely hanging roots are light-colored. There are no leaf stalks and flowers are inconspicuous and clustered in the leaf axils.

**Habitat:** Slow-moving waters of lakes, ponds, and streams. Can form dense, extensive monocultures.

**Growth Type:** Floating-leaved

**Similar Species:** None.



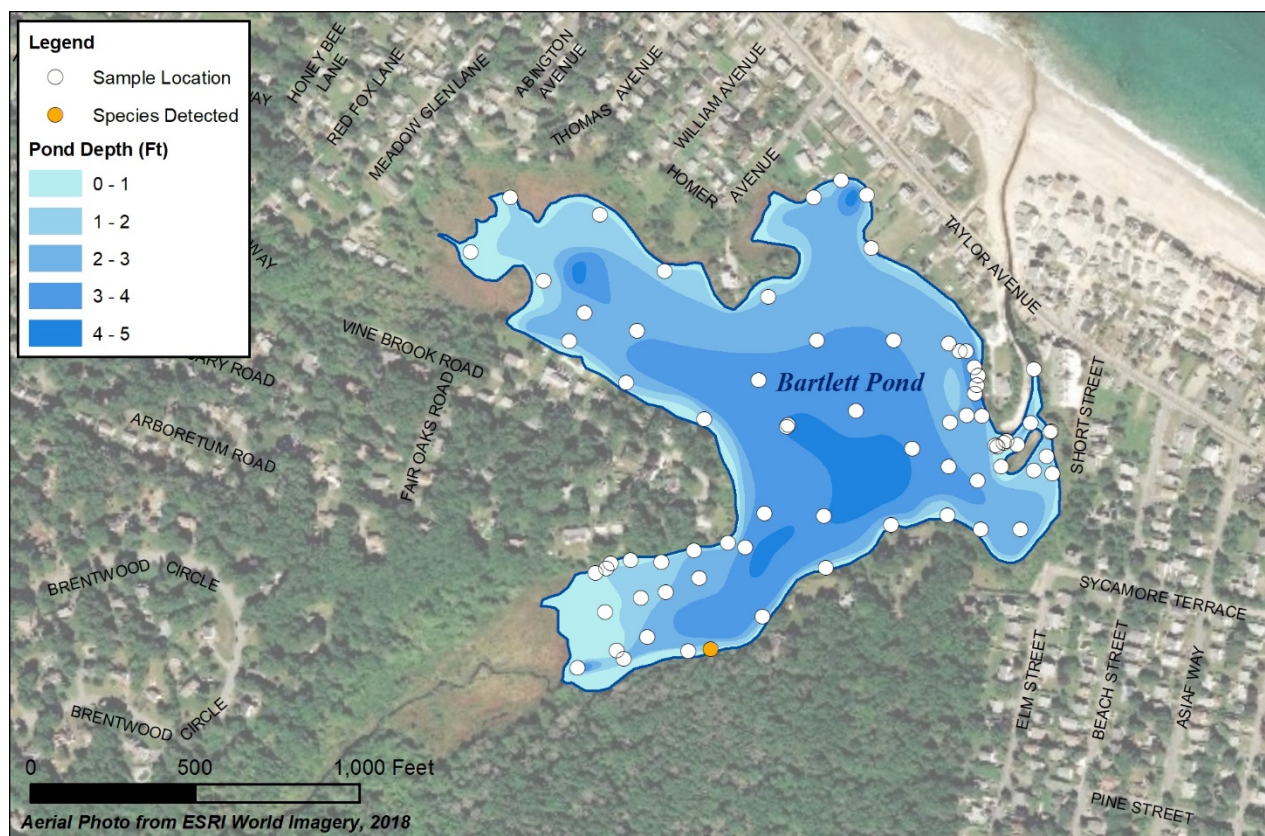
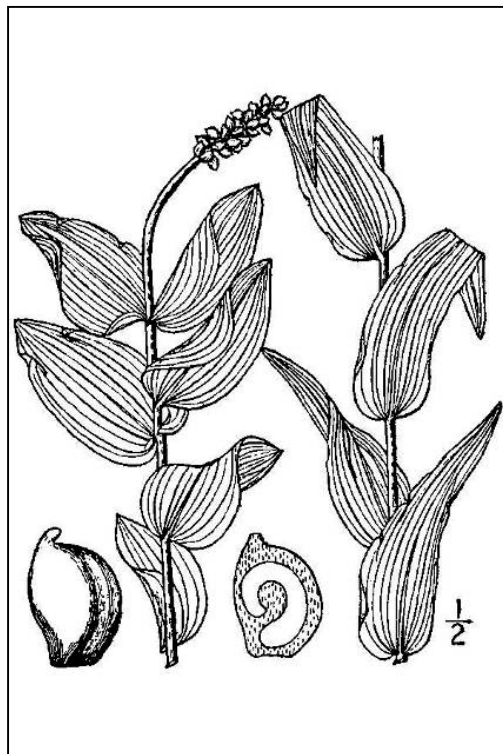
## *Potamogeton perfoliatus* – Clasping-Leaf Pondweed

**Key Features:** Leaves are circular to ovate and clearly clasp the stem. Leaf edges are wavy but entire (not serrated). Floating leaves are absent.

**Habitat:** Shallow waters of ponds and lakes.

**Growth Type:** Submerged

**Similar Species:** *Potamogeton crispus*



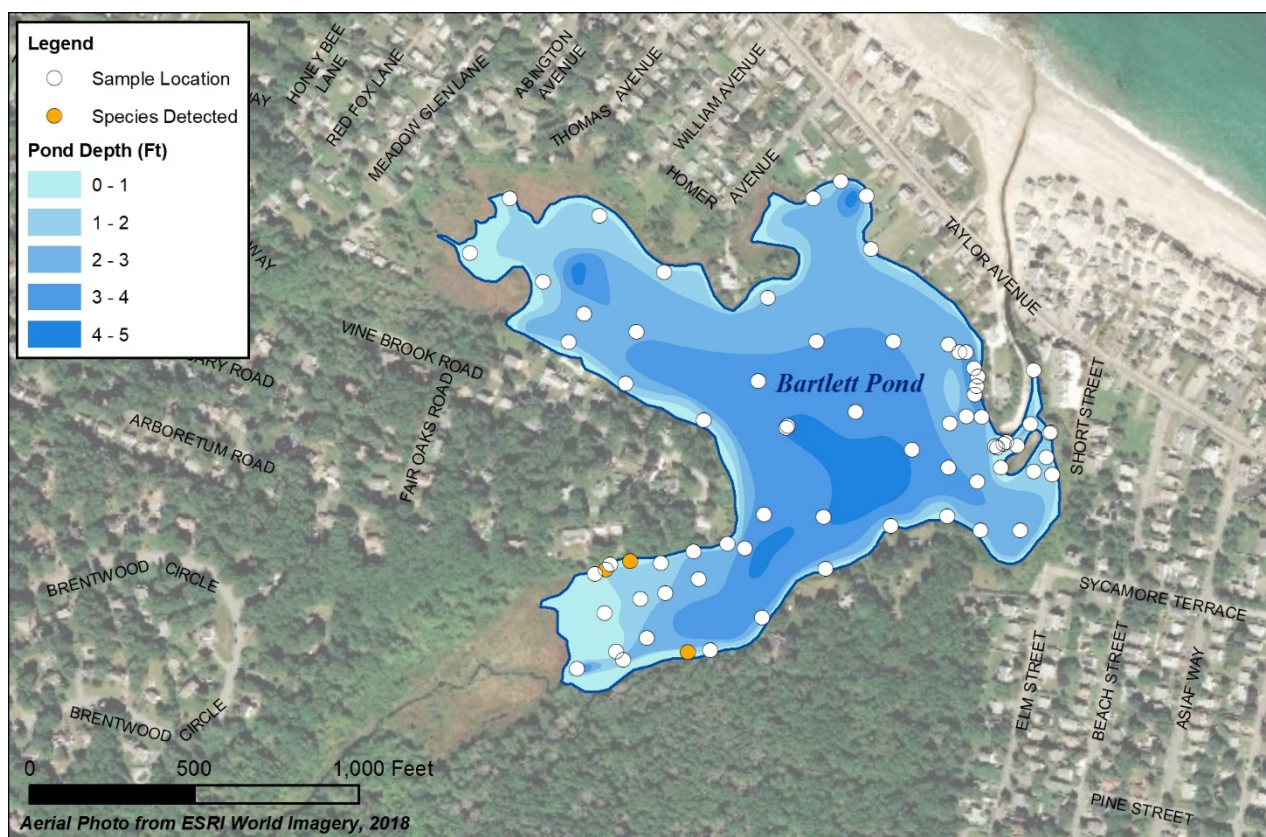
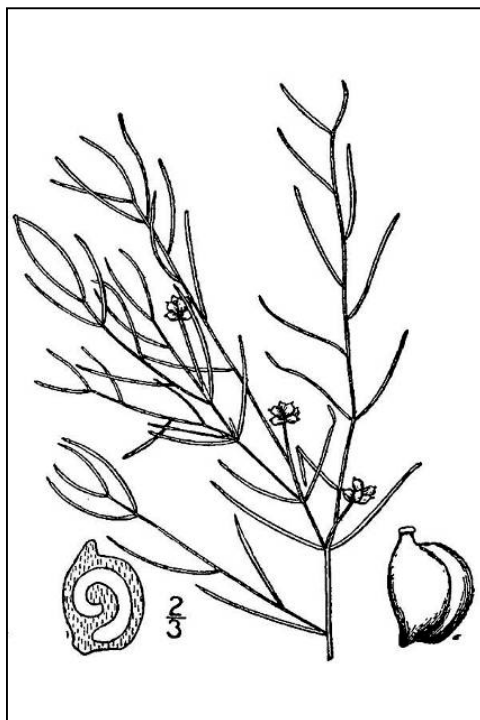
## *Potamogeton pusillus* – Thinleaf Pondweed

**Key Features:** No floating leaves. Submersed leaves are thin.

**Habitat:** Shallow waters of lakes and ponds.

**Growth Type:** Submerged

**Similar Species:** *Potamogeton bicipulatus*, *P. spirillus* (submersed leaves), *P. zosteriformis*



# Potential Invaders to Bartlett Pond

*Report if Observed*

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## *Egeria densa* – Brazilian Elodea

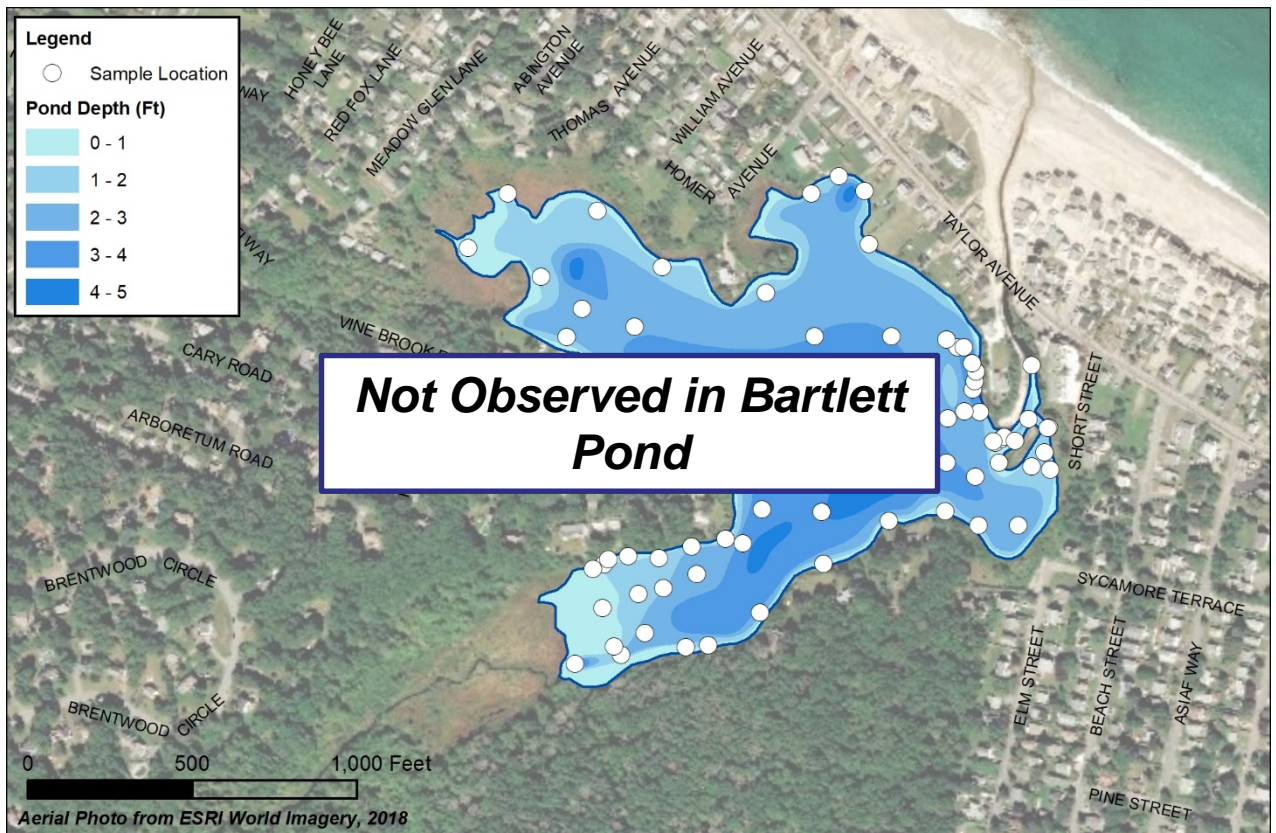
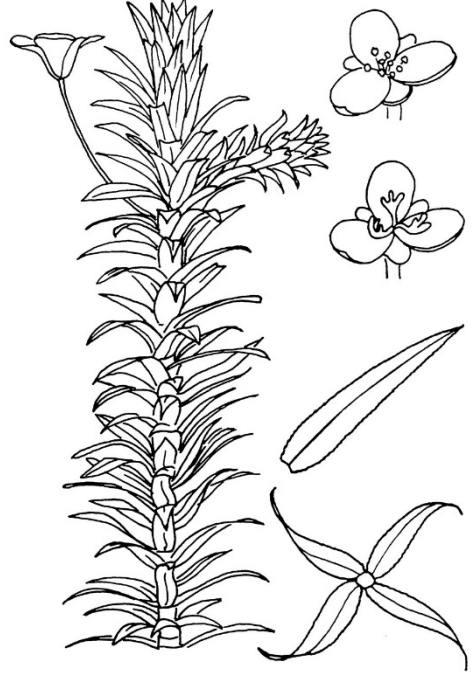
**Key Features:** Trailing stems up to 6 feet long, producing roots at intervals along the stem. Broad, pointed-leaves are whorled in groups of four to eight, with each leaf 1–4 cm long and 2–5 mm across. Flowers are 2–20 mm in diameter, with three broad, rounded, white petals.

**Habitat:** Grows in lakes and ponds in water up to 16 feet deep. Can form dense, extensive monocultures.

**Growth Type:** Submerged

**Similar Species:** *Elodea nuttallii*, *E. canadensis*.

Source: UFL/Center for Aquatic & Invasive Plants  
Gainesville, Florida



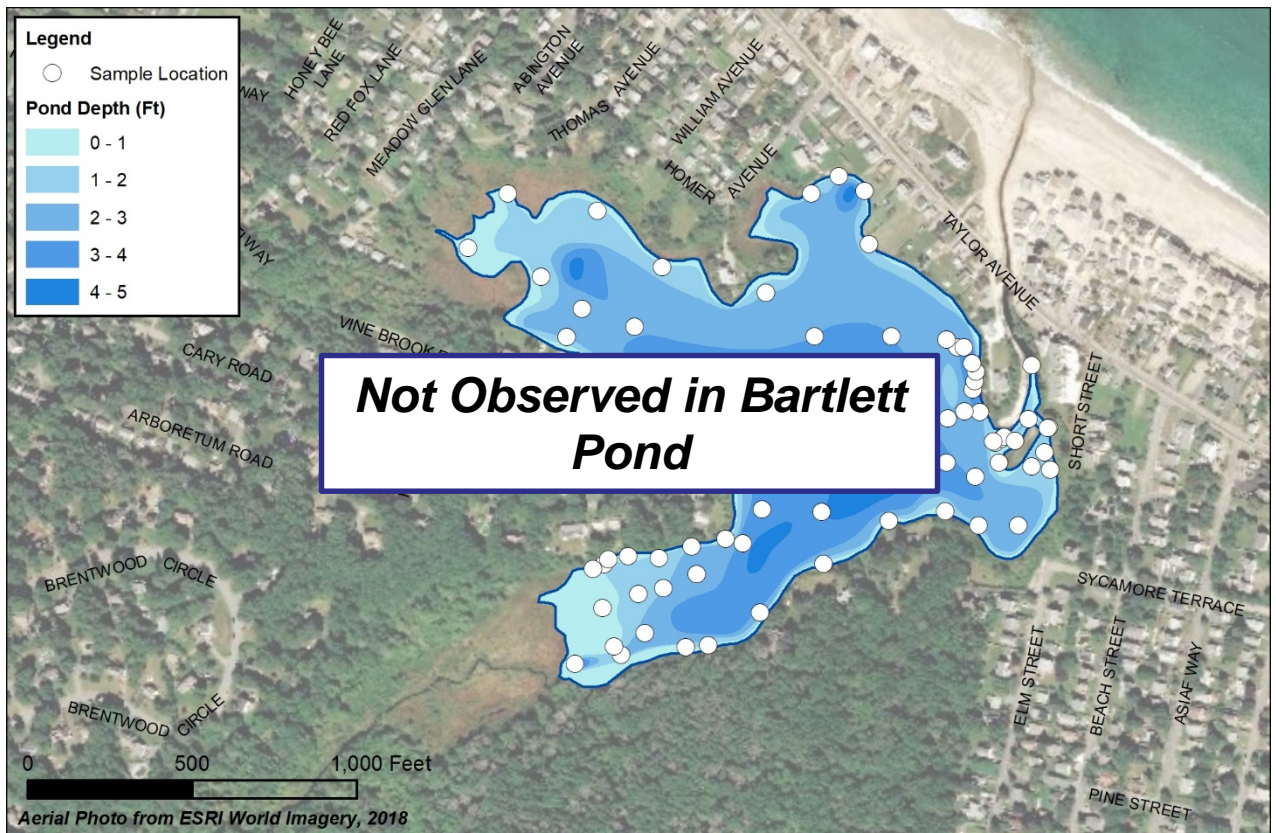
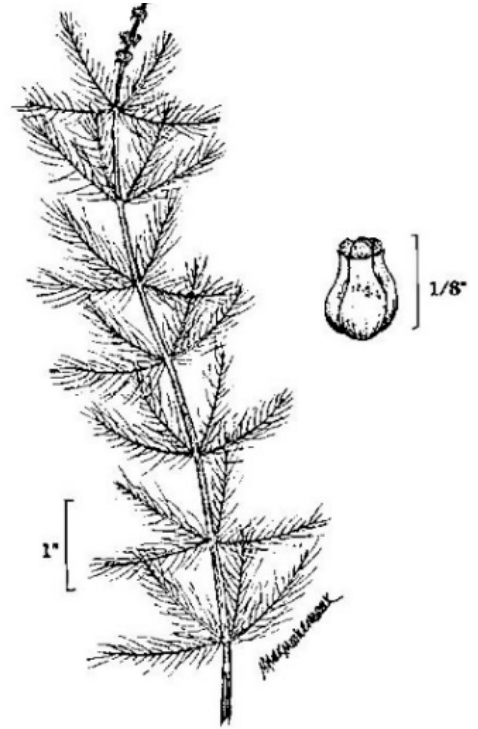
## *Myriophyllum aquaticum* – Parrot Feather

**Key Features:** Feathery leaves are arranged in whorls of 4-6 on submersed stems. Submersed leaves are 0.5 to 3.5 cm long and have 20 to 30 divisions per leaf. Emergent leaves are 2 to 5 cm long and have 6 to 18 divisions per leaf. Emergent stems and leaves can grow up to one foot above the water surface and resemble small fir trees (leaves darker green than submersed leaves). Small flowers or axils of emergent leaves are pinkish-white.

**Habitat:** Shallow edges and quiet waters of protected coves and stream outlets. Can form dense, extensive monocultures.

**Growth Type:** Submerged (dominant), emergent (secondary)

**Similar Species:** *Myriophyllum* spp.



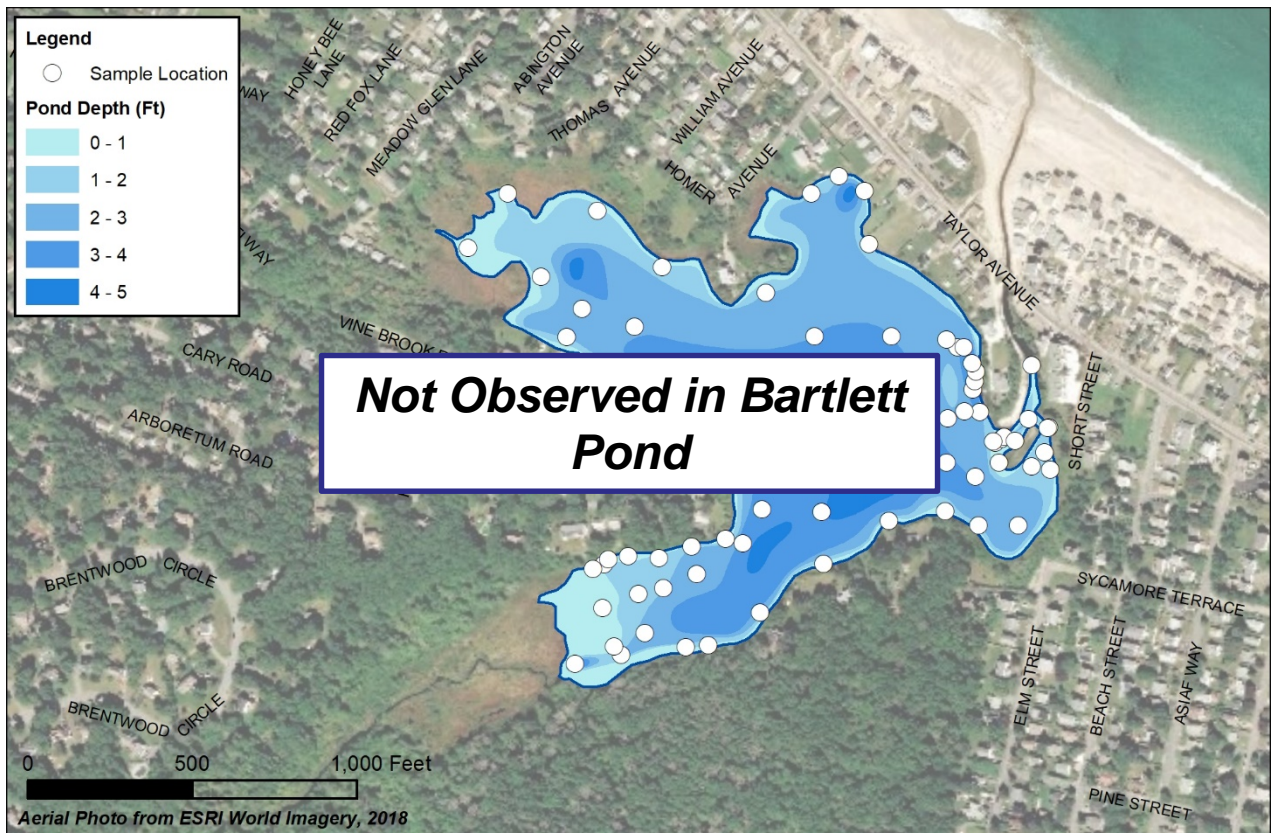
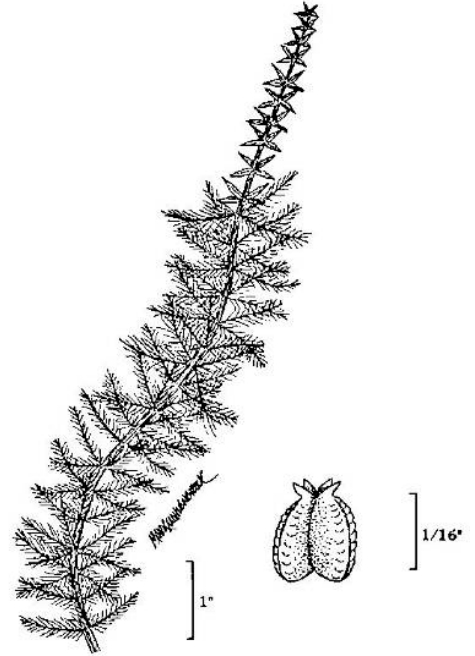
## *Myriophyllum heterophyllum* – Variable-leaf Milfoil

**Key Features:** Finely dissected, feathery leaves arranged in whorls of 4-6 on submersed stems. Emergent stems form comblike or serrated bracts that are larger than the flowers and look very different from the submersed leaves in August and September. Stems can grow more than 10 feet long.

**Habitat:** Shallow edges and quiet waters of protected coves and stream outlets. Can form dense, extensive monocultures.

**Growth Type:** Submerged

**Similar Species:** *Myriophyllum* spp.



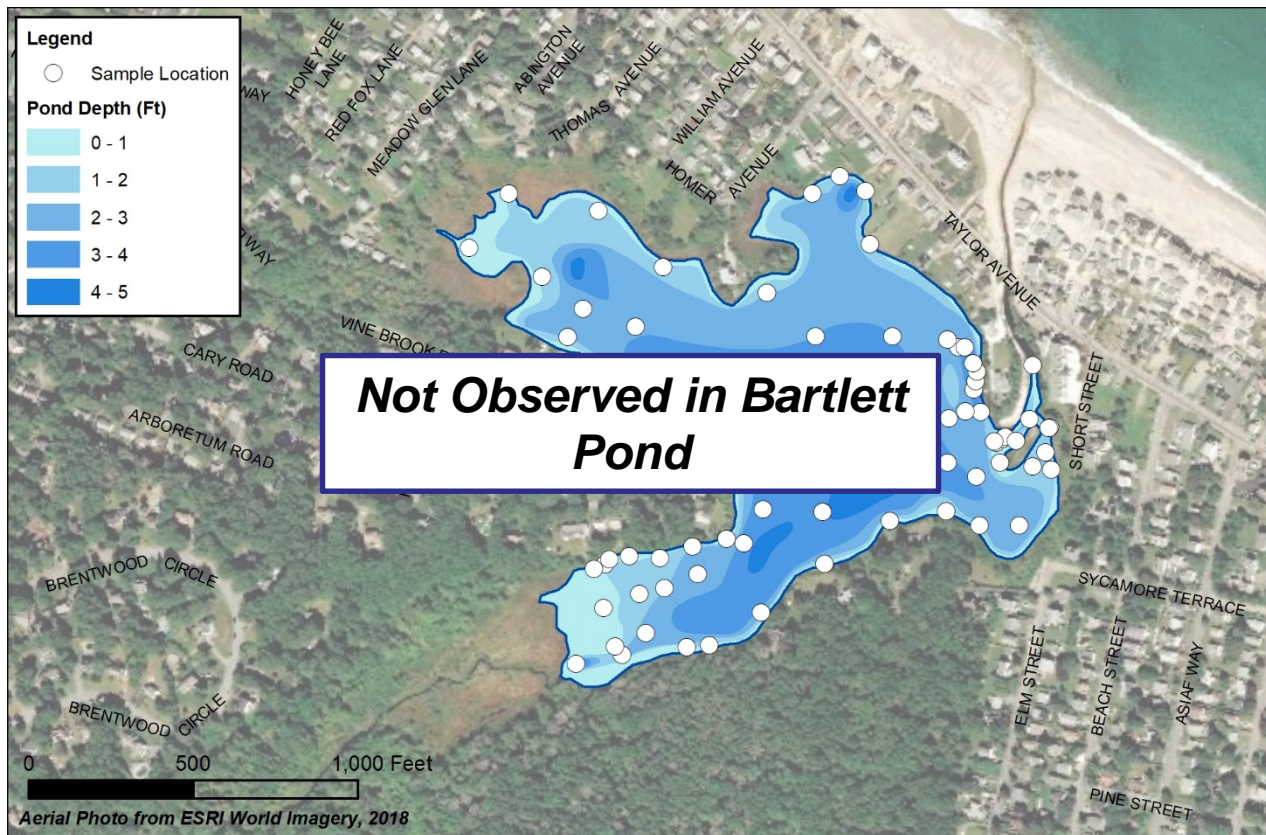
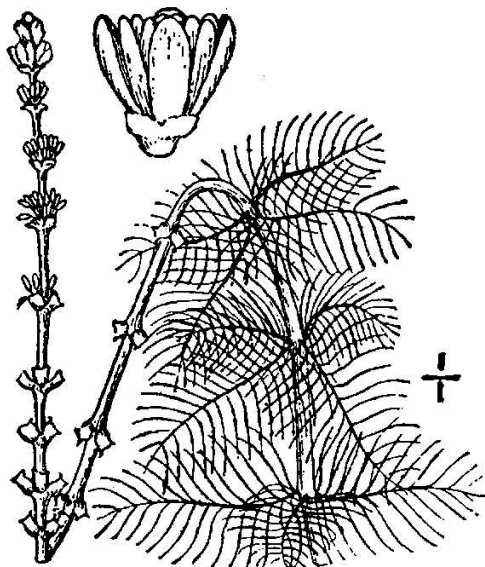
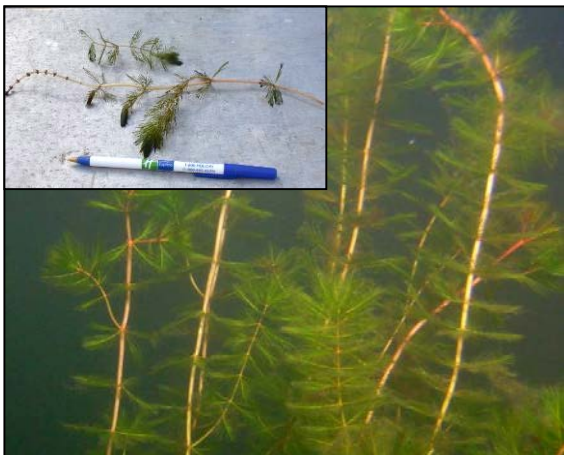
## *Myriophyllum spicatum* – Eurasian Milfoil

**Key Features:** Finely dissected leaves arranged in whorls of 3-6 on submersed stems. Leaves appear truncated, as if tips were clipped with scissors. Emergent stems with flowers larger than tiny bracts in August and September (inset below). Stems can grow more than 10 feet long.

**Habitat:** Ponds, lakes, and other sluggish waters. Can form dense, extensive monocultures.

**Growth Type:** Submerged

**Similar Species:** *Myriophyllum* spp.



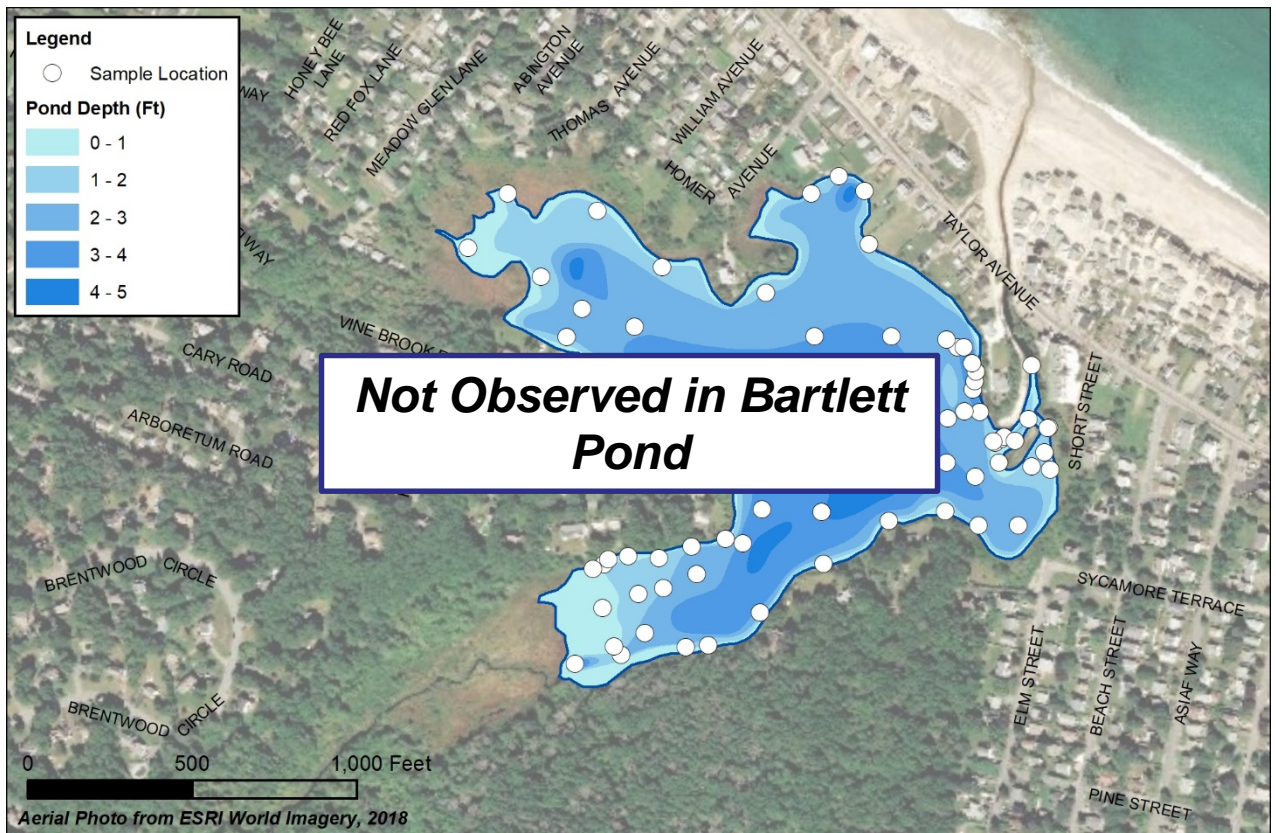
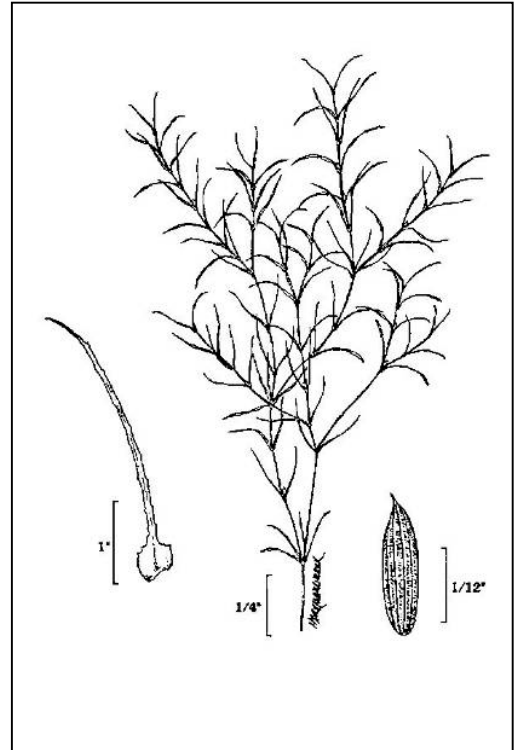
## *Najas minor* – Brittle Naiad

**Key Features:** Narrow, opposite leaves with prominent spines along each edge. Spines are small but clearly visible with the naked eye, making the leaf margins appear jagged. Stems are extensively branched and fragment easily.

**Habitat:** Ponds, lakes, and sluggish streams.

**Growth Type:** Submerged

**Similar Species:** *Najas* spp.



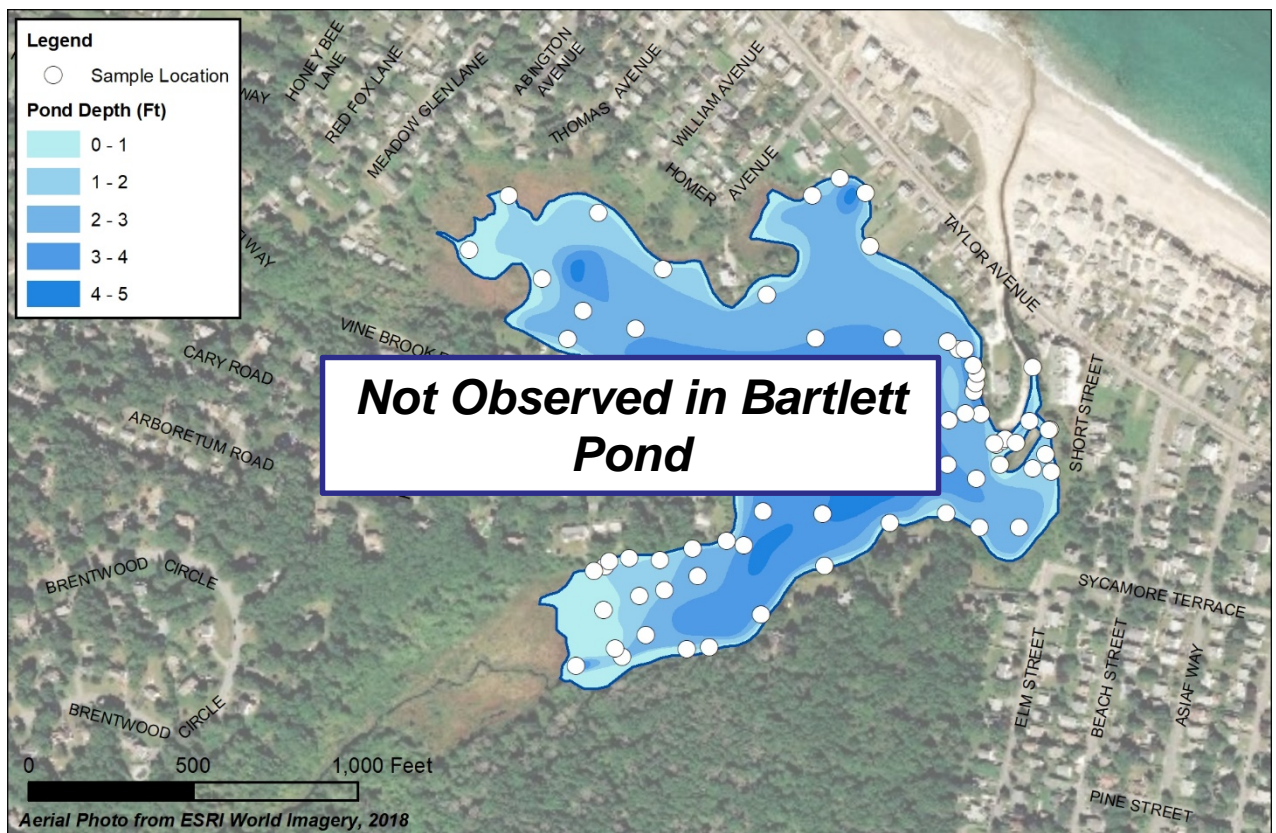
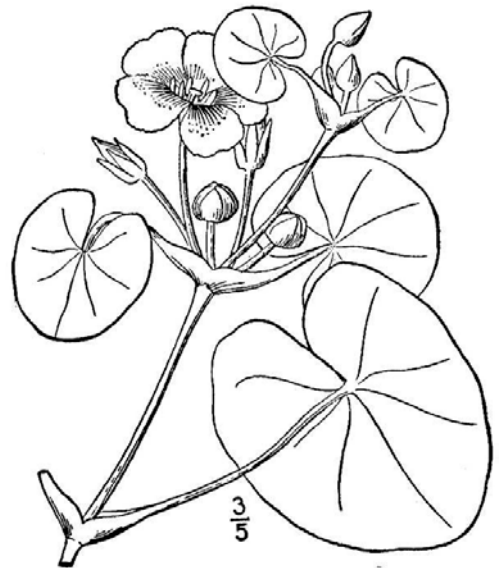
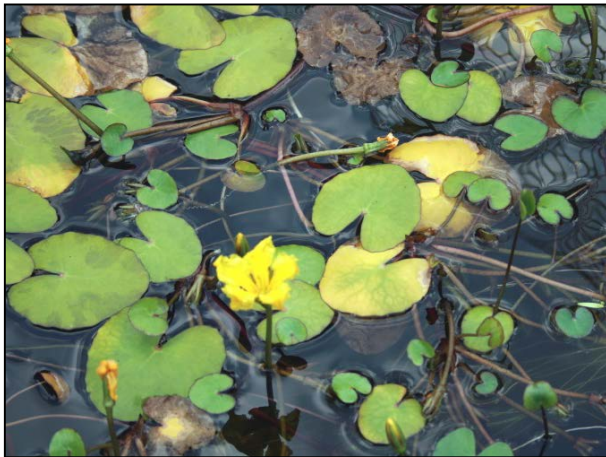
## *Nymphoides peltata* – Yellow Floating Heart

**Key Features:** Perennial, water lily-like plant that covers water surface with long-stalked heart-shaped leaves. Five-petaled yellow flowers occur on long stalks and rise a few inches above the water.

**Habitat:** Slow moving rivers, lakes, reservoirs, and ponds. Can form dense, extensive monocultures.

**Growth Type:** Floating-leaved

**Similar Species:** *Nuphar lutea variegata*, *Nymphaea odorata*, *Nymphoides cordata*.



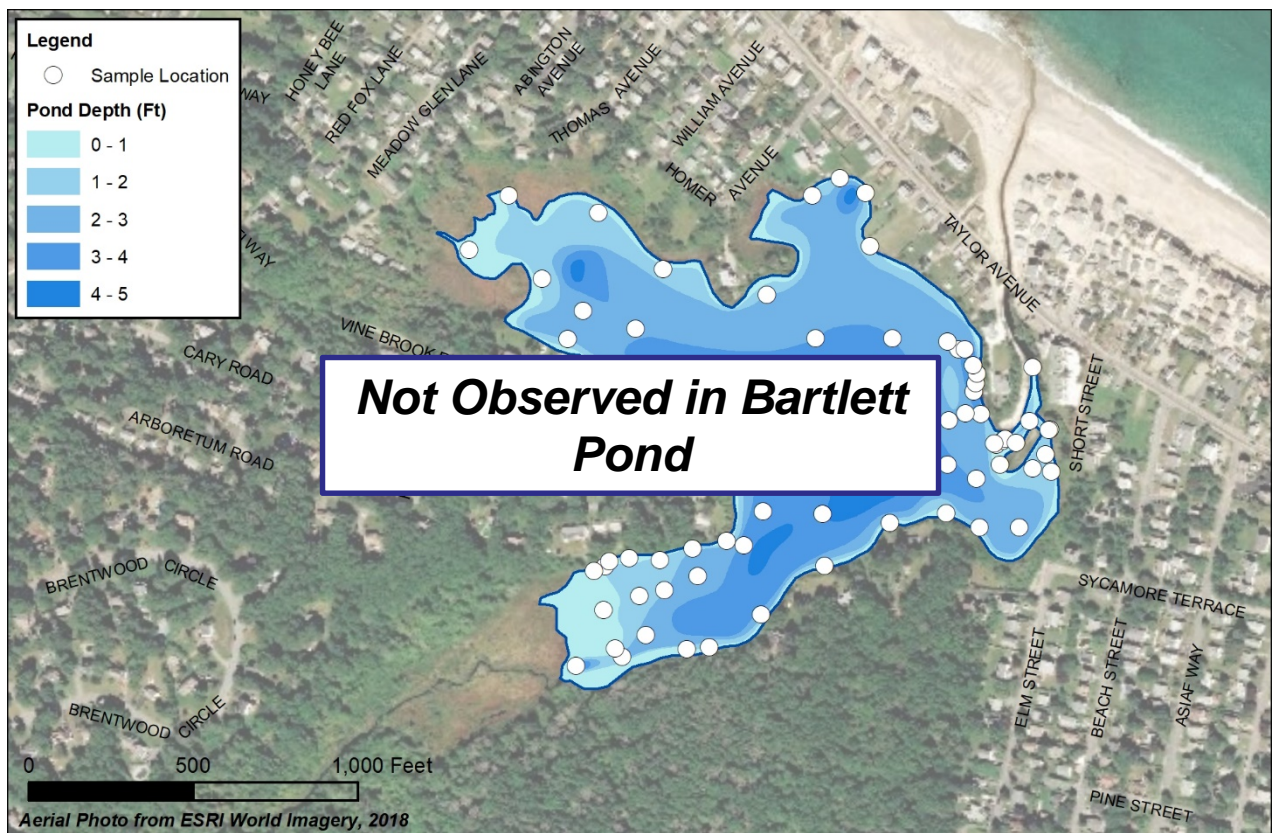
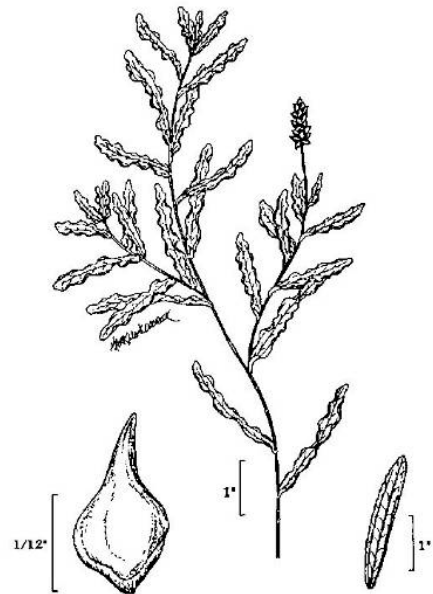
## *Potamogeton crispus* – Curly-leaf Pondweed

**Key Features:** Leaves are oblong, rounded at apex and are both wavy and serrated along the edges. Pine cone shaped turions may be present at the leaf axils and are very hard. Leaves do not clasp stem.

**Habitat:** Prefers ponds, lakes and streams with some alkalinity. Can form dense, long-stemmed monocultures early in the growing season (May to June).

**Growth Type:** Submerged

**Similar Species:** *Potamogeton perfoliatus*



## *Trapa natans* – Water Chestnut

**Key Features:** Floating leaves characterized by rosettes of shiny toothed leaves with swollen, air-filled petioles. Submersed leaves are finely divided and whorled around the stem. Floating seeds are set in the summer and are four-barbed and large (see inset).

**Habitat:** Shallow areas of lakes, ponds and sluggish streams. May quickly form dense monoculture beds.

**Growth Type:** Floating-leaved

**Similar Species:** None.

