



Natural Heritage & Endangered Species Program

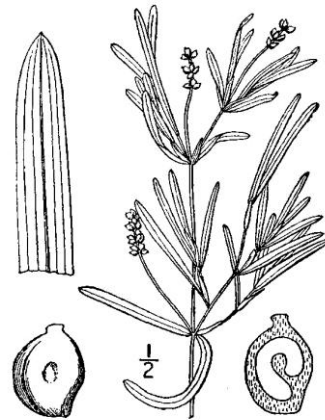
www.mass.gov/nhesp

Massachusetts Division of Fisheries & Wildlife

Fries' Pondweed *Potamogeton friesii* L.

State Status: **Endangered**
Federal Status: **None**

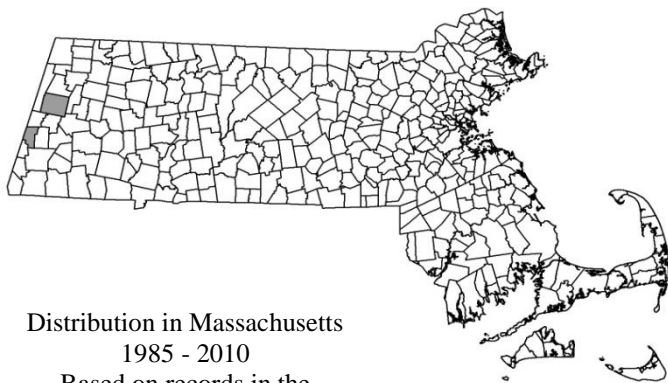
DESCRIPTION: Fries' Pondweed (*Potamogeton friesii*) is a delicate, submersed aquatic herb rooted to the substrate from erect, slightly compressed, stems 10 to 135 mm (up to 5 in.) long. Leaf blades are alternately arranged, linear, sessile, and with acute to apiculate (abruptly pointed) tips. Fries' Pondweed has no floating leaves; all leaves are submersed. At the base of each leaf is a sheath-like stipule, completely free from the blade, and a pair of small (0.7 mm), raised, green to goldish "nodal" glands. Flowers are inconspicuous and arranged in short cylindrical spikes held just above the water surface. Fruits are small (1.8–2.5 mm) and seed-like, olive-green to brown, with short (≤ 0.7 mm) erect beaks. The formation of soft, leafy winter buds, or turions, is common in leaf axils.



AIDS TO IDENTIFICATION: The identification of linear-leaved Pondweeds (*Potamogeton* spp.), in general, is difficult and requires careful microscopic (or hand lens) examination of leaves, stipules, nodes, winter buds, and fruit. Fries' Pondweed is identified by its slender

Fries' Pondweed: Illustration from: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols. Charles Scribner's Sons, New York. Vol. 1: 83.

Photo: Kristian Peters under the terms of the GNU Free Documentation License, from http://commons.wikimedia.org/wiki/File:Potamogeton_friesii.jpeg#file



Distribution in Massachusetts
1985 - 2010
Based on records in the
Natural Heritage Database

(1.2–3.2 mm wide), submersed, five (to seven) veined blades, 2.3 to 6.5 cm (~1–2.6 in.) in length; paired nodal glands; and unfused, whitish, coarsely fibrous stipules (0.5–2.0 cm; <1 in.) shredded at the tips. Individuals can be easily recognized by their distinctive turions. The turions are 1.5 to 5 cm (0.6–2 in.) long and 1.5 to 4 mm wide, with two to three reduced inner leaves positioned at right angles (90°) to the two to three outer leaves. The base of the outer leaves is corrugated, a feature also unique to the species.

SIMILAR SPECIES: Individuals of Fries' Pondweed closely resemble other, more common, narrow-leaved pondweeds that also lack floating blades. In the absence of turions for observation, Fries' Pondweed can be separated from Leafy Pondweed (*P. foliosus*) by the

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Massachusetts Division of Fisheries & Wildlife

1 Rabbit Hill Rd., Westborough, MA; tel: 508-389-6300; fax: 508-389-7890; www.mass.gov/dfw

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.

www.mass.gov/nhesp

latter species' fewer- veined (three to five) leaves, lack of nodal glands, and wavy-keeled fruits; and from Slender Pondweed (*P.pusillus*) by its fewer-veined (one to three) leaves and delicate, usually greenish, stipules.

HABITAT IN MASSACHUSETTS: Fries' Pondweed inhabits calcareous waters of lakes, ponds, and slow streams to 3 m (~10 ft.) deep. Plants found in association with Fries' Pondweed include Slender Pondweed (*Potamogeton pusillus*), Illinois Pondweed (*P. illinoensis*), Curly Pondweed (*P. crispus*), Flatstem Pondweed (*P. zosteriformis*), Big-leaved Pondweed (*P. amplifolius*), Sago Pondweed (*Stuckenia pectinata*), Water Crowfoot (*Ranunculus aquatilis*), Common Bladderwort (*Utricularia macrorhiza*), Water Stargrass (*Heteranthera dubia*), Northern Waterweed (*Elodea canadensis*), and Muskgrass (Stonewort) (*Chara* sp.).

RANGE: Fries' Pondweed occurs from Newfoundland west to Alaska, and south to Utah, Indiana, and Pennsylvania.

POPULATION STATUS IN MASSACHUSETTS: Fries' Pondweed is listed under the Massachusetts Endangered Species Act as Endangered. All listed species are protected from killing, collecting, possessing, or sale and from activities that would destroy habitat and thus directly or indirectly cause mortality or disrupt critical behaviors. This species is currently known from Berkshire County and is historically known from Middlesex County.

THREATS AND MANAGEMENT

RECOMMENDATIONS: As Fries' Pondweed occurs in open waters, alteration in the hydrologic regime, water quality, or erosion and sedimentation rates could have an impact on a population. Competition from invasive aquatic species could also reduce the available habitat of Fries' Pondweed. Mechanical or non-specific chemical control of invasive species is a threat as well. All active management of state-listed plant populations (including invasive species removal) is subject to review under the Massachusetts Endangered Species Act, and should be planned in close consultation with the Massachusetts Natural Heritage & Endangered Species Program.

Fruiting time in Massachusetts

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

REFERENCES:

Crow, G.E., and C. B. Hellquist. 2000. *Aquatic and Wetland Plants of North America*. Vol. 2. University of Wisconsin Press, Madison.

Updated 2015

A Species of Greatest Conservation Need in the Massachusetts State Wildlife Action Plan

Please allow the Natural Heritage & Endangered Species Program to continue to conserve the biodiversity of Massachusetts with a contribution for 'endangered wildlife conservation' on your state income tax form, as these donations comprise a significant portion of our operating budget.