



**Natural Heritage
& Endangered Species
Program**

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Massachusetts Division of Fisheries & Wildlife

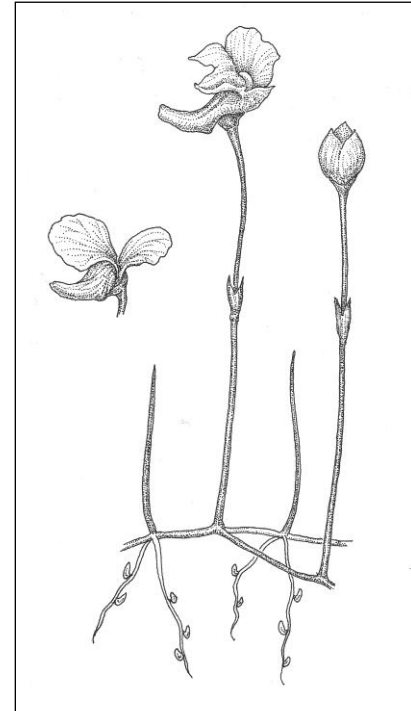
**Resupinate Bladderwort
*Utricularia resupinata***

B.D. Greene ex Bigelow

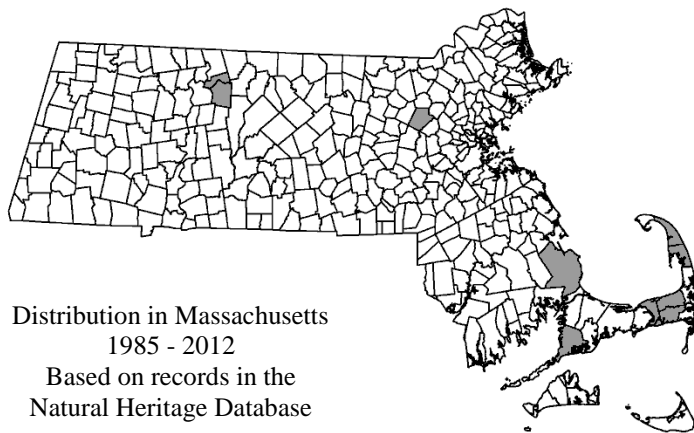
State Status: **Threatened**

Federal Status: **None**

DESCRIPTION: Resupinate Bladderwort is a carnivorous aquatic species in the Bladderwort family (Lentibulariaceae). It is found in shallow to moderately deep waters (up to 3 m or more) of sandy ponds. The stems are thread-like and creep on or just below the substrate, producing tiny three-parted leaves. The center segment of each leaf is erect and looks like a tiny blade of grass, with one or more cross-septa. The two lateral segments of each leaf grow downward into the substrate, are white in color, and look superficially like roots. These root-like leaves bear tiny bladders that open abruptly when disturbed and suck in passing prey, which are digested to provide nutrients for the plant. Bladderworts do not have true roots. Flowering occurs when water levels drop sufficiently to strand plants on shore or in very shallow water; for some populations this occurs only in very dry years. Flowers are showy, purple, and occur singly at the tips of upright, unbranched flower stalks that are typically less than 15 cm long (occasionally up to ~ 30 cm). The flower is subtended by a tubular bract, and flower parts are fused into two lips, with a prominent spur protruding from the lower lip. Bladderwort species reproduce both sexually by seed and asexually by producing compact, starch-filled "winter buds" (turions) that detach from the parent plant and disperse.



*Resupinate Bladderwort has single purple flowers at the top of unbranched flower stalks, cross-septa on erect leaf segments, and tiny bladders on downward growing lateral segments.
Illustration by Elizabeth Farnsworth.*



Distribution in Massachusetts
1985 - 2012
Based on records in the
Natural Heritage Database

AIDS TO IDENTIFICATION: It is not necessary to uproot Resupinate Bladderwort for positive identification. In flower, this species is identified by:

- A single purple flower at top of leafless stalk
- A tubular bract below the flower that surrounds the flower stalk
- Leaf cross-septa visible with a hand lens
- A single terminal seed capsule

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.

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SIMILAR SPECIES: Two other bladderworts have growth forms and habitat affinities similar to those of Resupinate Bladderwort. Horned Bladderwort (*U. cornuta*) is common and may be found with Resupinate Bladderwort. Subulate Bladderwort (*U. subulata*) is uncommon and listed under the MA Endangered Species Act as Special Concern. Most botanists do not distinguish these three species when fertile material is lacking, although the leaf cross-septa of Resupinate Bladderwort are diagnostic. Resupinate Bladderwort is unique in having bracts below the flower that are fused into a cup-like structure that surrounds the flower stalk. Other bladderwort species have bracts that appear as green scales below the flowers.

POPULATION STATUS IN MASSACHUSETTS: Resupinate Bladderwort is listed under the Massachusetts Endangered Species Act as Threatened. 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. Resupinate Bladderwort is currently recorded from Franklin, Middlesex, Plymouth, and Barnstable Counties. There are additional historical records from Berkshire, Hampshire, Hampden, and Essex Counties.

RANGE: Resupinate Bladderwort occurs on the coastal plain from the Atlantic Provinces of Canada south to Florida and Alabama, and from Nova Scotia and Quebec west to the Great Lakes States, and south to Pennsylvania, Indiana and Illinois.

HABITAT: Resupinate Bladderwort grows submerged in sandy-bottomed ponds, most often occurring on the coastal plain. Flowering plants are only found along the edges of ponds when water levels have dropped to expose normally submerged habitat. In these areas, plants are typically found where there is thin peat or mud overlying wet sand.

THREATS AND MANAGEMENT

RECOMMENDATIONS: The flat, sandy pondshore areas that are prime habitat for Resupinate Bladderwort sometimes experience heavy recreational use; monitoring of populations in such sites is needed to develop management guidelines. Best management practices should be followed to prevent nutrient enrichment of ponds from lawn fertilizers, faulty septic systems, and other sources. Competition from native or

non-native aquatic species may potentially threaten populations of Resupinate Bladderwort, though this has not been well-documented. All active management of rare 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.

Flowering in Massachusetts

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

Fruiting in Massachusetts

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

REFERENCES:

Crow, G.E., and C.B. Hellquist. 1985. Aquatic Vascular Plants of New England: Part 8. Lentibulariaceae. New Hampshire Agricultural Experiment Station Bulletin 528. Durham, NH.

Crow, G.E., and C.B. Hellquist. 2000. *Aquatic and Wetland Plants of Eastern North America: Volume 1. Pteridophytes, Gymnosperms and Angiosperms: Dicotyledons*. The University of Wisconsin Press, Madison.

Haines, A. 1994. Key to the genus *Utricularia* in Maine based on vegetative characteristics. *Maine Naturalist* 2: 47-49.

Haines, A. 2011. *Flora Novae Angliae – a Manual for the Identification of Native and Naturalized Higher Vascular Plants of New England*. New England Wildflower Society, Yale Univ. Press, New Haven, CT.

Scribailo, R.W., M.S. Alix, and S.A. Namestnik. 2011. Historical notes and new records for the rare Atlantic coastal plain species *Utricularia resupinata* (Lentibulariaceae) in Indiana. *Rhodora* 113: 32-46.

Updated 2015

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