



Natural Heritage & Endangered Species Program

Massachusetts Division of Fisheries & Wildlife
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Subulate Bladderwort

Utricularia subulata L.

State Status: **Special Concern**

Federal Status: **None**

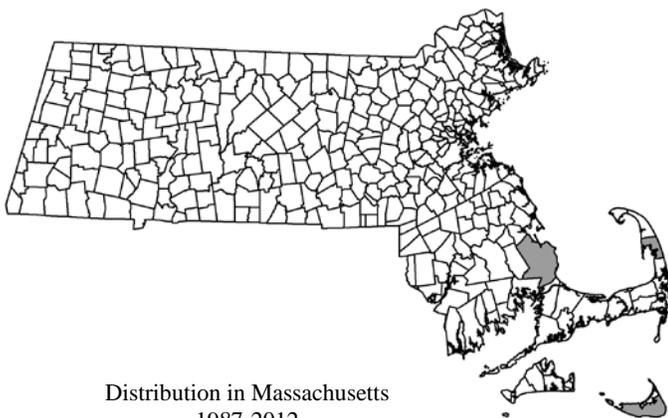
Description: Subulate Bladderwort is a tiny semi-aquatic plant composed of a subterranean system of delicate, unbranched, bladder-bearing (traps for invertebrates) stems from which thread-like, leafless flower scapes emerge 4 to 18 cm (1.5-6 in.) above the substrate. Small, uncut, leaf-like branchlets may also be present, borne on the underground stems. The tiny yellow flowers, commonly 2 to 4 per stalk, appear from early June to late summer. They have a bilabiate (two-lipped) corolla, the upper lip smaller and rounded, the lower one large, broad and shallowly 3-lobed with a short spur pressed beneath it. More often, however, the flowers lack any well-developed petals and look simply like fruiting capsules. These cleistogamous ("hidden") flowers are fertilized without the flower ever expanding. A colony of them looks like tiny hatpins stuck in the sand or mud.



Richard A. Howard Image Collection, courtesy of Smithsonian Institution.

Range: Southeastern Massachusetts and southern Nova Scotia represent the northern limit of this species' range which extends south along the coastal states to Florida, westward to Texas, inland to Arkansas and Tennessee, and then skips to northern Indiana and southern Michigan. It also found throughout South America, tropical Africa, Madagascar, Thailand, and Borneo.

Similar Species: Subulate Bladderwort is similar to two other yellow-flowered bladderworts, the Fibrous Bladderwort (*U. fibrosa*) and the Two-flowered Bladderwort (*U. biflora*). Both are larger overall and have floating or creeping branches with many finely dissected leaves and scattered bladders, separately or together, while Subulate Bladderwort has only underground bladders and few, if any, simple (undivided) leaves. Subulate Bladderwort is usually found stranded away from current water levels, whereas the other two are usually emergent at the water's edge.



Distribution in Massachusetts
1987-2012

Based on records in Natural Heritage Database

Habitat in Massachusetts: This species primarily grows in wet, sandy to peaty soils on the margins of shallow Coastal Plain freshwater ponds which undergo pronounced seasonal fluctuations in water level. These permanent bodies of water were created from buried blocks of glacial ice and are found scattered throughout the glacial outwash which was deposited over much of southeastern Massachusetts. A rich community of specially adapted species, many rare and threatened, is able to thrive because the encroachment of trees and shrubs is prevented by the recurring high water levels in these ponds. Subulate Bladderwort is also found in boggy depressions and on peaty scrapes where saturated and sunny conditions are also conducive to the growth of certain low, herbaceous species. Commonly found growing with Subulate Bladderwort are Thread-leaved Sundew (*Drosera filiformis*), Yellow-eyed Grass (*Xyris difformis*), Bog Buttons (*Eriocaulon septangulare*), White Beak-sedge (*Rhynchospora alba*), and Redroot (*Lachnanthes caroliana*), another listed plant species which happens to reach its northern range limit at the same location as Subulate Bladderwort.

Population Status: Subulate Bladderwort is listed as a Species of Special Concern in Massachusetts. It is also considered rare in Delaware, Indiana, Maryland, Michigan, Missouri, New York, Oklahoma, Rhode Island, Tennessee, Virginia, and Nova Scotia. It existed historically in Pennsylvania, but is currently presumed to be extirpated from that state. Extensive populations of Subulate Bladderwort occur at several Massachusetts sites and at three of the eight currently known stations it is protected. Historically (prior to 1984) it was more prevalent, documented from 21 sites in the state. However, through recent development and recreational use of many of the region's coastal ponds, this species' habitat has significantly decreased.

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