



Natural Heritage & Endangered Species Program

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Massachusetts Division of Fisheries & Wildlife

Northeastern Bulrush *Scirpus ancistrochaetus* Schuyler

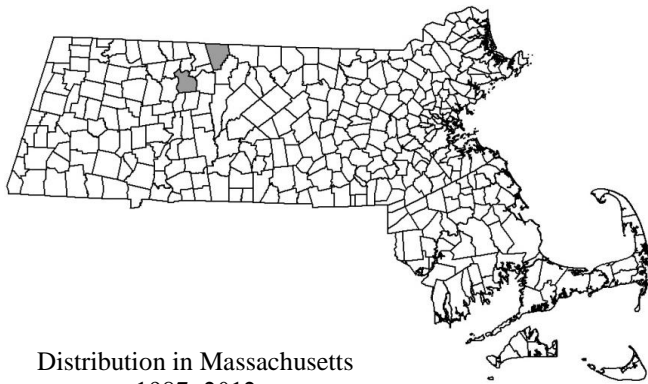
State Status: **Endangered**
Federal Status: **Endangered**

DESCRIPTION: Northeastern Bulrush is a leafy tufted perennial sedge (family Cyperaceae), known throughout its range from a variety of wetland types with fluctuating water levels. This species is globally rare and is listed under the federal Endangered Species Act as Endangered.

Growing sometimes over a meter in height (~3.3 ft), the reproductive culms have five to nine leaves, 7 to 13 mm wide. The basal sheaths are green to brown. The inflorescence has drooping rays bearing sessile clusters of 2 to 18 spikelets. Bulrushes generally have oval to egg-shaped spikelets, bearing numerous flowers subtended by scales. In Northeastern Bulrush, the ovary has three styles, and the fruit (an achene) has six bristles at the base; these are straight and stout, with thick retrorse (downward pointing) barbs that cover 60% to 90% of the length. The bristles are largely concealed by the scales.



(Left) The inflorescence of Northeastern Bulrush with drooping rays. (Top right) Sessile clusters of egg-shaped spikelets with concealed bristles. (Bottom right) The distinctive achene with six bristles bearing thick, retrorse barbs over most of the length. Photos by Jennifer Garrett (NHESP).



Distribution in Massachusetts
1987–2012

Based on records in
the Natural Heritage Database

AIDS TO IDENTIFICATION: Though experts can identify vegetative plants, it is best to have reproductive culms present; a technical key should be consulted. In appropriate habitat, leafy-stemmed bulrushes should be examined for the following characteristics:

- Most rays drooping and bearing sessile spikelets
- Six straight bristles (not contorted or woolly), mostly concealed by the scales
- Bristles that are stout with relatively wide, retrorse barbs over more than 60% of the length

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

Massachusetts Division of Fisheries & Wildlife

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SIMILAR SPECIES: Wool-grass (*Scirpus cyperinus*) frequently co-occurs with Northeastern Bulrush, but it can easily be differentiated by its long woolly bristles, which conspicuously exceed the scales. A few other bulrush species, however, have concealed (non-woolly) bristles. In contrast to Northeastern Bulrush, Wood Bulrush (*S. expansus*) and Barber-poll Bulrush (*S. microcarpus*) have basal sheaths that are reddish; Mosquito Bulrush (*S. hattorianus*) and Dark-green Bulrush (*S. atrovirens*) have bristles with barbs that cover less than 60% of their length; and Georgia’s Bulrush (*S. georgianus*) has up to three bristles, which are typically smooth or with barbs only at the very top. Further, these five species generally have more spreading to upright rays.

POPULATION STATUS IN MASSACHUSETTS: Northeastern Bulrush 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. It is currently known from Franklin County.

RANGE: Northeastern Bulrush is known from most states from Vermont and New Hampshire south to Virginia. It has not been documented in Connecticut, Rhode Island, New Jersey, or Delaware, and is presumed extirpated from Quebec.

HABITAT: Throughout its range this species is known from a variety of wetland habitat types but common attributes include organic soils, fluctuating water levels, full sun, and mesotrophic to oligotrophic water chemistry. Though Northeastern Bulrush can occupy well-inundated wetlands, reproductive plants are typically observed at sites with saturated soils or shallow water. In Massachusetts, one population occupies a kettlehole-type depression with a floating boggy mat, and another occupies an emergent marsh on the edge of an impounded pond. Associated species include Rice Cut-grass (*Leersia oryzoides*), Wool-grass, manna-grasses (*Glyceria* spp.), Soft-stem Bulrush (*Schoenoplectus tabernaemontani*), Sweet Gale (*Myrica gale*), Leatherleaf (*Chamaedaphne calyculata*), Buttonbush (*Cephalanthus occidentalis*), and sphagnum mosses (*Sphagnum* spp.).

Northeastern Bulrush is more common in Vermont; the nearest populations occupy the shallow water portions of beaver flowages and seasonally inundated perched hemlock swamps. At beaver flowage sites, populations become most robust within a few years following beaver abandonment, when water levels draw down and expose open soil. As succession proceeds, and competition from robust marsh species increases, Northeastern Bulrush populations decline and may disappear; the seed bank can persist, however, and following another cycle of flooding and drawdown, plants can re-appear. The populations at perched hemlock swamps are typically very small. They occupy the outer edges of the swamp, in areas with lower competition, and are best observed in low water years.

THREATS/MANAGEMENT

RECOMMENDATIONS: Northeastern Bulrush requires fluctuating water levels, so any activity that may alter the hydrologic regime could pose a threat. It does not compete well with dense vegetation, and is expected to be particularly vulnerable to invasions of exotic wetland plants such as Common Reed (*Phragmites australis*) and Purple Loosestrife (*Lythrum salicaria*). Sites should be monitored closely for invasions and management actions should be implemented immediately if exotic invasive species are observed in the habitat. Access to the habitat by off-highway vehicles should be prohibited. All population management actions within state-listed species habitat are subject to review under the Massachusetts Endangered Species Act, and should be planned in consultation with the NHESP.

Mature Achenes Present in Massachusetts

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

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REFERENCES:

- Lentz, K.A. 1998. Effects of intraspecific competition and nutrient supply on the endangered northeastern bulrush, *Scirpus ancistrochaetus* Schuyler (Cyperaceae). *The American Midland Naturalist* 142:47–54.
- Lentz, K.A., and W.A. Dunson. 1999. Distinguishing characteristics of temporary pond habitat of endangered northeastern bulrush, *Scirpus ancistrochaetus*. *Wetlands* 19:162–167.
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- U.S. Fish and Wildlife Service. 2008. Northeastern Bulrush (*Scirpus ancistrochaetus*) 5-Year Review: Summary and Evaluation. Pennsylvania Field Office, State College, PA.
- U.S. Fish and Wildlife Service. 1993. Northeastern bulrush (*Scirpus ancistrochaetus*) recovery plan. Hadley, Massachusetts.

Updated 2015

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