Weak Rush

Juncus debilis fruits

Photo credits: *Stephen M. Young*

Scientific Name *Juncus debilis* Gray

Family Name Juncaceae Rush Family

Did you know?
This is one of the smallest species of Juncus in the state, reflected in the species name meaning "weak." Many populations may be undiscovered because of its resemblance to Juncus brachycarpus, Juncus acuminatus and Juncus subcaudatus.

Summary

Protection Endangered in New York State, not listed federally.

This level of state protection means: listed species are those with: 1) 5 or fewer extant sites, or 2) fewer than 1,000 individuals, or 3) restricted to fewer than 4 U.S.G.S. 7 ? minute topographical maps, or 4) species listed as endangered by U.S. Department of Interior.

Rarity G5, S1

A global rarity rank of G5 means: This species is demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
A state rarity rank of S1 means: This plant is endangered/critically imperiled in New York because of extreme rarity (typically 5 or fewer populations or very few remaining individuals) or is extremely vulnerable to extirpation from New York due to biological factors.

Conservation Status in New York

There are four existing populations but only one of them is of good quality. The other three have less than 60 plants each and are under some threat by human disturbance. There are five historical occurrences but most of them are too vague for targeted searches.

Short-term Trends

Short-term trends are not well known since only one population has been revisited in recent years and the plants were extirpated by changes in habitat. This plant occurs in habitats that could undergo change in a short time.

Long-term Trends

This plant has only ever had five or fewer occurrences in New York at any one time. Some historical occurrences are too vague to know whether they still exist and others are from locations where the habitat probably no longer exists. As some locations are lost and others are discovered the plant will probably continue to exist in small numbers in the state.

Conservation and Management

Threats

One population is around a lake where it can be trampled by people fishing and walking.

Conservation Strategies and Management Practices

Make sure the plants are protected from human impacts.

Research Needs

Research is needed to discover what limits the distribution of this plant in New York since there are many wet shorelines where it could live.

Habitat

Juncus debilis has been collected from a rather broad variety of habitats in New York, including red maple swamps, mudflats, shallow emergent marshes, and coastal plain pond shores. More information on the habitat requirements of this small and possibly overlooked species in the state is needed (New York Natural Heritage Program 2007). Wet places, shores, etc. (Fernald 1970). Moist sandy soil (Gleason & Cronquist 1991).

Associated Ecological Communities

Shallow Emergent Marsh
A marsh meadow community that occurs on soils that are permanently saturated and seasonally flooded. This marsh is better drained than a deep emergent marsh; water depths may range from 6 in to 3.3 ft (15 cm to 1 m) during flood stages, but the water level usually drops by mid to late summer and the soil is exposed during an average year.

Other Probable Associated Communities

Brackish intertidal mudflats
Coastal plain pond shore
Red maple-hardwood swamp

Associated Species

Black Bentgrass (*Agrostis gigantea*)
Densetuft Hairsedge (*Bulbostylis capillaris*)
Pennyslvania Bittercress (*Cardamine pensylvanica*)
Shallow Sedge (*Carex lurida*)
Broom Sedge (*Carex scoparia*)
Fox Sedge (*Carex vulpinoidea*)
American Hornbeam (*Carpinus caroliniana*)
Canadian Horseweed (*Conyza canadensis*)
Fern Flatsedge (*Cyperus filicinus*)
Creeping Spike-rush (*Eleocharis palustris*)
Late-flowering Thorough-wort (*Eupatorium serotinum*)
Slender Flattop Goldenrod (*Euthamia caroliniana*)
Catchweed Bedstraw (*Galium aparine*)
Canada Manna-grass (*Glyceria canadensis*)
Golden Hedge-hyssop (*Gratiola aurea*)
American Water-pennywort (*Hydrocotyle americana*)
Sharp-fruit Rush (*Juncus acuminatus*)
Canada Rush (*Juncus canadensis*)
Forked Rush (*Juncus dichotomus*)
Common Rush (*Juncus effusus*)
Grass-leaved Rush (*Juncus marginatus*)
Brown-fruited Rush (*Juncus pelocarpus*)
Square-stem Monkeyflower (*Mimulus ringens*)
Sensitive Fern (*Onoclea sensibilis*)
Switchgrass (*Panicum virgatum*)
Swamp Smartweed (*Persicaria hydropiperoides*)
Dotted Smartweed (*Persicaria punctata*)
Polygonum sagittatum
Woolgrass Bulrush (*Scirpus atrovirens*)
Hardhack Spiraea (*Spiraea tomentosa*)
Marsh Fern (*Thelypteris palustris*)

Identification Comments

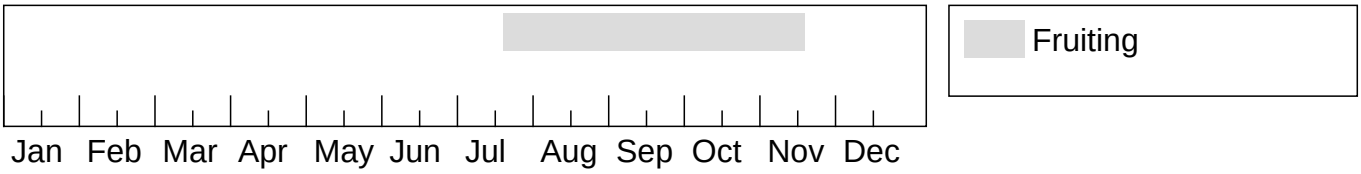
Weak Rush is a tufted, grass-like perennial. Its stems are erect, round, smooth, and only 10 to 25 cm tall and 1-2mm wide. There are 1-3 dark green to purplish leaves along the stem, from 1 to 12.5 cm long and .5 to 1.5 mm wide. The flowers are borne in 3 to 35 heads on widely-spreading branches, each head with from 2-10 (20) flowers. As with all rushes, each flower has 6 tepals (reduced petal-like structures); in J. debilis these are green to straw-colored, up to 2.3 mm long, and have pointed tips. The fruit are capsules 2.8 to 3.7 mm long, exceeding the length of the perianth (tepals).

Best Life Stage for Identifying This Species

This species is best identifed when mature fruit are present.

The Best Time to See

The fruits on this species ripen in late July or early August and can persist into the fall.



The time of year you would expect to find Weak Rush in New York.

Similar Species

Juncus acuminatus and J. brachycarpus each have tepals which are much longer than the fruit. J. subcaudatus has seeds .7 to 2.6 mm long, each with a tail and a white translucent veil, while those of J. debilis are only .3 to .4 mm long and lack tails or veils (FNA 2000).

Taxonomy

Kingdom Plantae
└─ **Phylum** Anthophyta
└─ **Class** Monocots (Monocotyledoneae)
└─ **Order** Juncales
└─ **Family** Juncaceae (Rush Family)

Synonyms

Juncus acuminatus var. debilis ((A. Gray) Englem ex A. Gray)
Juncus diffusissimus (Buckl.)

Additional Resources

Links

Flora of North America
http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=222000119
USDA Plants Database
http://plants.usda.gov/java/nameSearch?mode=sciname&keywordquery=JUNCUS+DEBILIS
New York Flora Atlas
http://atlas.nyflora.org/result.asp
NatureServe Explorer
http://natureserve.org/explorer/servlet/NatureServe?searchName=JUNCUS+DEBILIS
Google Images
http://images.google.com/images?q=JUNCUS+DEBILIS

Best Identification Reference

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