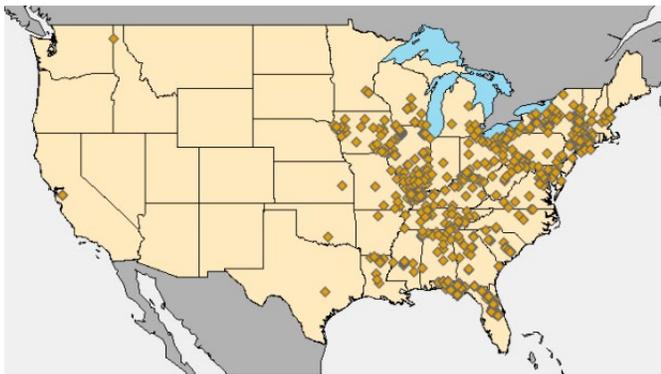




Aquatic Nuisance Series: Brittle Naiad

Brittle naiad (*Najas minor*) is an invasive aquatic annual native to Europe and Asia. It also goes by the name bushy pondweed and brittle water nymph. It is well established in northern New Jersey and has been observed in many lakes across the eastern United States.



*Distribution of *Najas minor* in the United States. Map from GBIF Secretariat (2018).*

Brittle naiad will grow early in the season, giving it an edge over native species. It can also tolerate poor water clarity as well as slightly brackish water. While brackish (moderately salty) conditions are not typical in our freshwater lakes, New Jersey is researching how road salt can affect the salinity of lakes and this may give brittle naiad a greater advantage over native species.

Description and Habitat

Brittle naiad grows in depths from a foot or two down to 6 feet and beyond. It will typically reach a height of four feet. Its small, highly branched stems give it the ability to form dense colonies that can crowd out native plants and even displace the fish in its area. Brittle naiad is so aggressive that even invasive aquatic plants such as Eurasian milfoil can be crowded out.

The leaves are highly toothed (3 – 12 teeth) and can be just over an inch long and just under a quarter-inch wide. Flowers are found during the summer, in the leaf axis. It has fruits and seeds. Waterfowl will use it as a food source, further aiding in its spread.

Fish also love it, but their role in spreading it is less clear.

Brittle naiad prefers calm water and has been found in slow-moving streams. It will establish itself in the Spring, but its max growth will occur in the summer with new seed in August. By the early fall, it will break up quickly, usually ahead of most native species. Once gone, only seeds remain to pop up once again in the spring. They have a prolific seed set with over 10 million seeds in 1 acre.



Image from Lower Hudson PRISM

The plant gets its name from the tendency of its branches to break easily. Its fragments can potentially produce new plants, especially if they contain fruits.

Management and Control

Brittle Naiad can be very difficult to control and certain management activities can increase its population in the lake. Because of its tendency to break apart and the ability of those fragments to produce new plants, pulling by mechanical means is not recommended.

Before any action is taken to reduce brittle naiad, it is important to make sure the target really is the nuisance plant. Its bushy appearance and visibly toothed leaves are two distinctive features. There are native naiads and even macroalgae that can be mistaken for brittle naiad and these should be left alone.

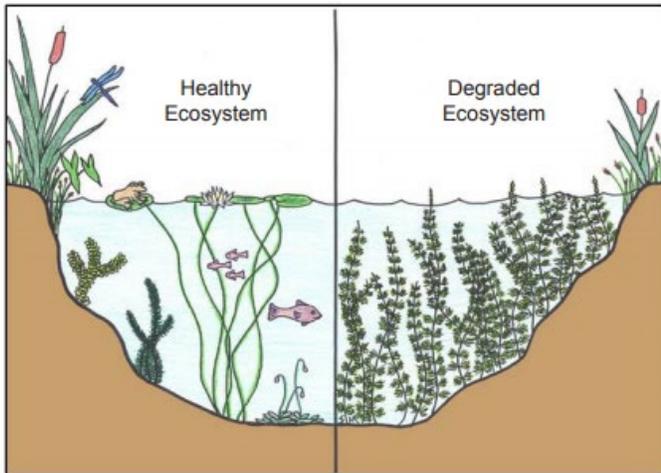


Photo courtesy of Vermont DEP

Habitat Control

Like all invasive plants, the best method of control is prevention. It is always a good policy to make sure boats are thoroughly cleaned before they enter your lake. This is especially important for brittle naiad as it can easily take hold just from some fragments.

Carp will eat brittle naiad, but their ability to control the growth over an entire lake has yet to be proven.

Chemical Options

Various chemicals will work to reduce brittle naiad. It may be appropriate to use chemicals in an isolated outbreak, but caution is advised. Brittle naiad really starts to take over an area just as native plants are starting to establish. Care should be taken to make sure any treatment does not harm the native vegetation.

Since brittle naiad peaks during the summer, there is a greater risk that a mass die off of the plant will deplete the lake's dissolved oxygen. If treating a heavily infested lake, one should consider doing

sections at separate times and also the use of aeration to help keep oxygen levels high enough to prevent a fish kill.

The active ingredients that have been successful in treating brittle naiad include:

- Copper with Diquat (Rated: Good)
- Diquat (Rated: Excellent)
- Endothall (Rated: Excellent)
- Furidone (Rated: Excellent)
- Flumioxazin (Rated: Excellent)
- Penoxsulam (Rated: Good)

These ratings are based upon the U.S. Army Corps of Engineers aquatic herbicide trials.

Before coming up with a plan to chemically treat brittle naiad, consideration should be given to help native plants fill in the void. Without this, it is very likely that the plant will return year after year.



Clump of brittle naiad. Leslie J. Mehrhoff, University of Connecticut

Additional Resources

<http://fingerlakesinvasives.org/wp-content/uploads/2013/12/FacsheetsBrittleNaiad.jpg>

<https://www.fws.gov/fisheries/ans/erss/highrisk/ERSS-Najas-minor-FINAL-February2019.pdf>

<https://aquaplant.tamu.edu/management-options/brittle-naiad/>