

BRITTLE NAIAD

What is brittle naiad?

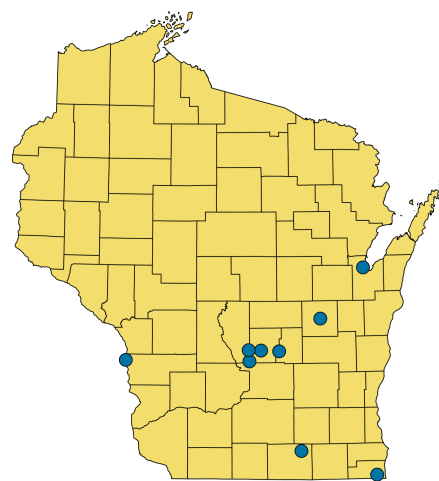


Photo: Paul Skawinski, *Aquatic Plants of the Upper Midwest*

Brittle naiad (*Najas minor*) is an aquatic plant native to Europe, northern Africa, and western Asia. It was introduced to North America in the early 20th century and is primarily found in the Northeast, South, and Midwest regions within the United States. The first verified report of brittle naiad in Wisconsin was from Storrs Lake, Rock Co. in 2007. Brittle naiad has submersed, opposite leaves that are typically $\frac{1}{4}$ to $1\frac{1}{2}$ inches long and $\frac{1}{16}$ inch wide. The leaves are generally recurved and have visible spines along the edges. Brittle naiad primarily reproduces via small seeds, although it can also reproduce via fragmentation.

Where is brittle naiad found?

Brittle naiad has been verified in 7 inland Wisconsin lakes as well as portions of Lake Michigan and the Mississippi River. It is tolerant of turbid and eutrophic (i.e., high nutrient) conditions.



Wisconsin lakes & rivers with verified brittle naiad populations as of 2022.

How does it spread?

Brittle naiad seeds and fragments can move between waterbodies by hitchhiking on boats, trailers, and other recreational equipment. Seeds may also be spread by waterfowl.

How does brittle naiad differ from spiny naiad?

Brittle naiad (left) closely resembles another naiad species that is present in Wisconsin: spiny naiad (*Najas marina*; right). Spiny naiad also has visible spines along the leaf margins. It can be distinguished from brittle naiad by the additional presence of spines on the underside on the leaves, as well as along the stem.

Photos: Paul Skawinski, *Aquatic Plants of the Upper Midwest*



Brittle naiad (*Najas minor*)



Spiny naiad (*Najas marina*)



What are the impacts of brittle naiad?

In some waterbodies, brittle naiad can form large mats that can impede recreational activities, like fishing, boating, and swimming. It can also outcompete native plants, especially native naiads (*Najas* spp.). However, aquatic plant point-intercept data collected on Wisconsin lakes with brittle naiad have documented consistently low population levels of this species since its first discovery (Fig. 1).

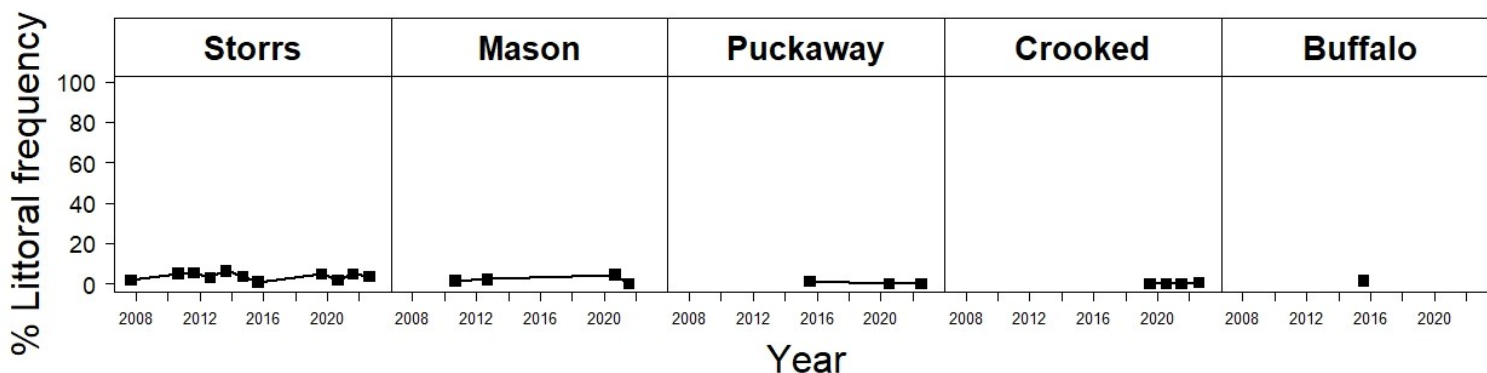


Figure 1: Percent littoral frequency of brittle naiad (*Najas minor*) in 5 inland Wisconsin lakes from 2008-2022.

What can be done to manage brittle naiad?

Implementing simple aquatic invasive species prevention steps can reduce impacts from invasive species even when other management options are unavailable. The best way to keep a lake free of brittle naiad is to prevent its establishment. All recreational users of a lake should make sure that their boat and equipment are free of any plant fragments and turions before travelling between waterbodies.

If brittle naiad is causing a navigational impairment, it can be mitigated through mechanical cutting, raking, or hand-harvesting. However, brittle naiad produces many tiny seeds that remain in the sediment after control efforts. It can also reproduce through plant fragments created by cutting or raking. Therefore, brittle naiad is unlikely to be eradicated through mechanical control. An approved Chapter NR 109 permit is required for the use of mechanical control for aquatic plants in a Wisconsin waterbody.

Herbicides that are approved for aquatic use in Wisconsin and are labeled to control naiads include 2,4-D, diquat, endothall, flumioxazin, and fluridone. However, due to the large seed bank (i.e., the stored seeds within the sediment) that brittle naiad can produce, the longevity of chemical control is likely to be very short-term, and complete eradication is very unlikely. An approved Chapter NR 107 permit is required for the use of herbicides in a Wisconsin waterbody to control aquatic plants.

The Clean Boats, Clean Waters program provides an opportunity for lake groups concerned about brittle naiad spread to educate recreational users about prevention methods; learn more about the program and how you can get involved [here](#).

Reporting invasive species is important in containing their spread. You can find instructions for reporting an invasive species finding to the Wisconsin Department of Natural Resources [here](#).

For more information:

Brittle Naiad, Wisconsin Department of Natural Resources: dnr.wisconsin.gov/topic/Invasives/fact/BrittleNaiad

Brittle Water nymph (*Najas minor*), United States Geological Survey, Nonindigenous Aquatic Species Database: nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1118



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