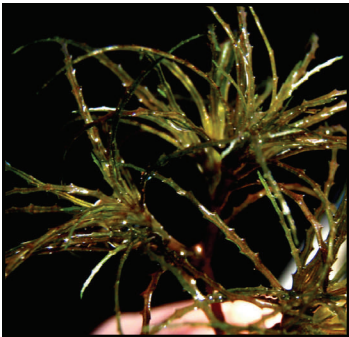


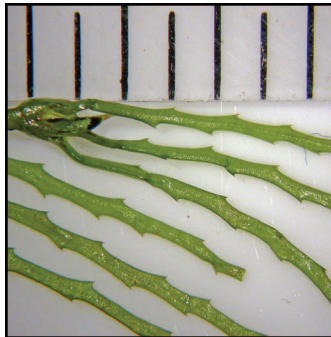


FACT SHEET

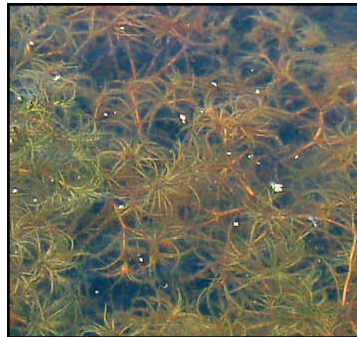
Freshwater Aquatic Invasive Species in Rhode Island Spiny Naiad



Spiny naiad leaves form "tufts" at the growing tip



Leaves are serrated (dashes indicate $\frac{1}{16}$ inch lines on a ruler)



Plants may float at the surface



Spiny naiad plants carpet the bottom of a lake

Species Description and General Information

Spiny naiad (*Najas minor*) is a submersed aquatic plant that is found in slow-moving streams, ponds and lakes. It is tolerant of turbidity and eutrophic conditions. Spiny naiad also may be referred to as slender, brittle, European or bushy naiad. The heavily-branched stems of the plant may reach up to 4 feet in length. Leaves are opposite, alternate or whorled around the stem and form "tufts" at the growing tip, giving the plant a bushy appearance. Spiny naiad leaves are thin, strap-shaped, 1-1.5in long, serrated and arch backwards. Leaves are stiff and maintain their shape out of the water. Spiny naiad may be confused with native slender naiad. However, the serrations (spines) on spiny naiad are visible to the naked eye, whereas spines on slender naiad are only visible under significant magnification. Flowers, which emerge from leaf axils leaves during spring and summer, along with one-seeded fruits that appear in the fall, are very inconspicuous. Spiny naiad is an annual but can spread by fragmentation during the growing season.

Why is Spiny Naiad Considered a Nuisance Species?

Once introduced, spiny naiad spreads rapidly and may completely cover the lake bottom, out-competing native plant species for space. It may grow along with other invasive plants, or form dense monotypic (single species) stands. If this plant becomes dominant, it may create conditions that are detrimental to native fish and waterfowl. Spiny naiad may also interfere with recreational activities such as boating, swimming and fishing.

How Did Spiny Naiad Become Established in Rhode Island?

Spiny naiad is native to Europe, and was first introduced to the United States in the 1930s. It has since spread rapidly throughout the Midwest and east coast. Movement to new water bodies has been attributed to natural flow throughout watersheds, migrating waterfowl, boating and fishing activities. The brittleness of this plant allows it to break easily into fragments that may become attached to boats, trailers or equipment. The small seeds can easily become attached to waterfowl or taken up in the bilge water of boats. As a result, spiny naiad infestations can spread very quickly.

What Methods Can Be Used to Control Spiny Naiad?

Because of its ability to spread through fragmentation, physical control is generally not recommended. Hand-pulling may be effective for short-term relief for small patches if all fragments are collected. By law, the manual removal of submerged aquatic vegetation is restricted to that area adjacent to, but no more than fifteen feet from, existing or permitted docks, beaches or swimming areas under the RI Fresh Water Wetlands Regulations (Rule 6.02). Manual plant removal outside this area or physical control of larger patches via mechanical cutting or harvesting may require a DEM wetlands permit (for more information, contact the Water Quality and Wetlands Restoration Team noted below).

Chemical control may be effective for large populations. The DEM Division of Agriculture licenses the applicators that can apply the regulated herbicides to treat invasive plants. Each herbicide treatment requires a specific permit from the Division of Agriculture to ensure proper use. The most appropriate means of selecting a specific treatment plan is to consult a lake manager or licensed herbicide applicator, who can provide targeted treatment options and estimate associated costs. A more detailed survey of the entire water body will likely be needed to assess the severity of the infestation and develop the most effective and cost efficient long-term management plan.

Please Help Prevent the Spread of Spiny Naiad in Rhode Island!

Learn to identify invasive plant species and be on the lookout for new plants in your lake. It is much easier to manage a small patch of invasive plants than an entire lake covered with plants, so early detection is key! Identification resources are available on the RIDEM website at <http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/aisindex.htm>.

RIDEM also encourages the use of clean boat hygiene practices. Boats (trailers and motors too) should be inspected for plant fragments before launching in the water and after boats have been hauled out of the water. See posted reminders at state boat ramps.

For more information also see:

- Guide to Understanding Freshwater Aquatic Plants, RIDEM
<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/pdfs/aquaplnt.pdf>
- Aquatic Invasive Species in Rhode Island
<http://www.dem.ri.gov/programs/benviron/water/quality/surfwq/aisindex.htm>
- RI DEM Herbicide permit application
<http://www.dem.ri.gov/programs/bnatres/agricult/pesticide.htm>
- RI DEM Water Quality and Wetland Restoration Team
<http://www.dem.ri.gov/programs/benviron/water/wetlands/pdfs/wqwrteam.pdf>
- RI DEM Wetlands permit application
<http://www.dem.ri.gov/programs/benviron/water/permits/fresh/index.htm>
- The URI Watershed Watch Program
www.uri.edu/ce/wq/ww
- The Rhode Island Natural History Survey
<http://www.rinhs.org/>

