

EUROPEAN NAIAD

SPINY NAIAD

Najas minor

NOT NATIVE TO MAINE - INVASIVE

Habitat: European naiad is found in the submersed plant community, growing in ponds, lakes, and slow moving streams in depths up to 5 meters. Preferring sand and gravel, the plants thrive in a wide range of substrates. European naiad is tolerant of turbidity and eutrophic (nutrient rich, productive) conditions.

Description: Unlike most aquatic plants, European naiad is a true annual. Seedlings grow from slender roots, developing stems up to 2.5 meters long that often branch profusely near the top. The leaf arrangement is not strict, and leaves may appear to be opposite, sub-opposite, in whorls or clumps. The leaves are small (rarely more than 3.5 cm long) and very slender (0.3 – 0.5mm wide), strap-shaped, pointed and serrated. Unlike all native naiads whose leaf serrations or spines are virtually invisible to the unaided eye, the leaf serrations of European naiad, though tiny, can usually be observed without magnification. Visible serrations, therefore, provide a key characteristic for identifying this invader. A second characteristic that

distinguishes European naiad from two of Maine's three native naiad species—including the most common by far, *Najas flexilis*—is the abruptly protruding (as opposed to gently flaring) blocky or fan-shaped leaf base. The upper margin of the leaf base is finely toothed or fringed in appearance. You may need to carefully pull the leaf away from the stem and use a hand lens to see the base clearly. (Note: The leaf base of a third native species, *Najas gracillima*, is also blocky and toothed, however the occurrence of this species in Maine is rare.) Like all naiads, the flowers are small, inconspicuous, and borne in the leaf axils. The seeds are purplish, 1.5 to 3.0 mm long, spindle shaped and slightly curved, with rectangular indentations arranged in distinct longitudinal rows.



slender serrated
leaves are variously
arranged

European naiad (*Najas minor*)

Origin and Range: European naiad is native to Europe. It is thought to have been introduced to the US some time in the early 1900s and is now present in much of the Eastern United States including the nearby states of New Hampshire, Massachusetts, Vermont, and New York.



Annual Cycle: A true annual, European naiad grows anew from seeds each spring. Seeds form in the leaf axils from July through September. Although European naiad can reproduce by fragmentation during the growing season, the primary means of reproduction appears to be by seed. It is estimated that a productive, one-acre infestation will produce tens of millions of seeds per season. During the late summer or early fall, the stems of European naiad become brittle, and break up. Seeds remain attached in the leaf axils, and wind and water currents disperse the fragments.

Look Alikes: May be confused with native naiads, some fine-leaved pondweeds, and some stoneworts.



Arching leaves form "tufts" toward the growing tip

