

WATER CHESTNUT

Trapa natans

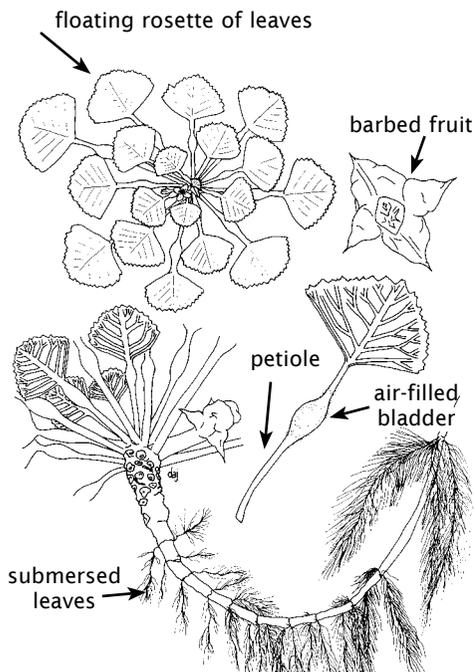
NOT NATIVE TO MAINE - INVASIVE

Habitat: Water chestnut grows in the floating-leaf and submersed plant community. It thrives in the soft sediments of quiet, nutrient rich waters in lakes, ponds and streams. The plant is well adapted to life at the water's edge, and prospers even when stranded along muddy shores.

Description: Water chestnut has two distinct leaf types. The floating leaves are somewhat triangular (or fan shaped) in form, with conspicuously toothed margins along the outside edges. The upper surface of the leaf is glossy, the undersides covered with soft hairs. The leaves are arranged in a loose, radiating pattern or rosette and joined to the submersed stem by long leaf stems, or petioles (up to 15 cm long). Spongy inflated bladders in the petioles provide buoyancy for the rosette. The rosettes are anchored to the sediments on stems reaching lengths of up to 5 meters. The first submersed leaves to emerge are alternate, linear and entire, but these give way as the plant develops to feather-like finely divided, leaf-like roots (or root-like leaves—there is ongoing debate as to which is correct). The upper leaf-roots contain chlorophyll, causing them to be greener. When water levels drop, those lower down anchor the plant to sediments. Small white flowers appear above the rosettes in mid to late July, each emerging from its own stalk from the axils of the floating leaves. When the fruits form they submerge and dangle beneath the rosette. The fruits are woody and nut-like, typically with four sharp barbs.



Water chestnut has two distinct leaf types



Water chestnut (*Trapa natans*)



Small white flowers occur among floating leaves



Fruits have four sharp barbs

Origin and US Range: Water chestnut is native to Europe, Asia and tropical Africa. It is cultivated in Asia and other parts of the world where the fruit is eaten. It was brought to this country in the late 1800s as a showy botanical garden specimen and later escaped to become a noxious aquatic invader. Nearby populations occur in New Hampshire, Connecticut, Massachusetts, New York, Vermont and Rhode Island.



Annual Cycle: Unlike most aquatic plants, water chestnut is a true annual. Plants sprout anew each year from seeds overwintering in the sediments. Submersed stems grow rapidly to the surface, where the floating rosettes form and the flowers and fruits develop. During the growing season rosettes may become detached and float to new areas. Water chestnut flowers from July to September. The fruit, or nuts, begin to appear by late summer. Each water chestnut seed can produce 15 to 20 new rosettes and each rosette can generate up to 20 seeds. At the end of the growing season, frost kills the plants and decomposition is rapid. The nuts fall and sink into the sediment where they over-winter and sprout in the spring. The nuts may remain viable for up to 12 years but most germinate within 2 years. The nuts have sharp barbs that readily attach to boating gear and wildlife and are easily dispersed by natural and human processes.

Look Alikes: Water chestnut is not easily confused with other aquatic plants.