

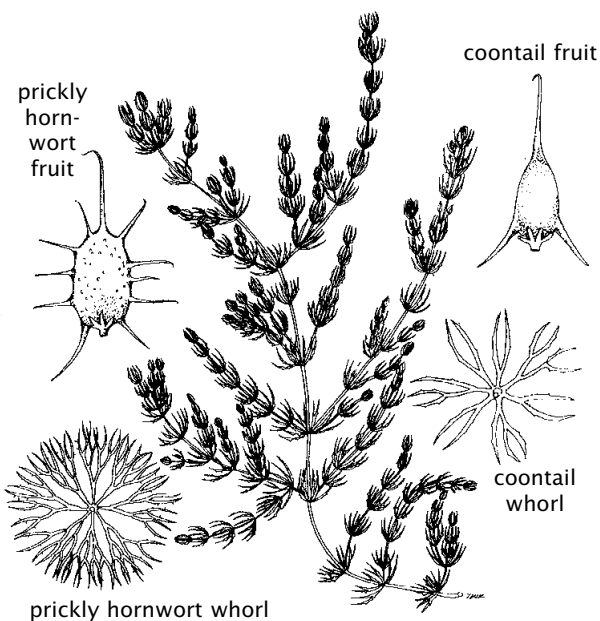
HORNWORTS

Ceratophyllum demersum and *C. echinatum*

NATIVE TO MAINE

Habitat: Maine is home to two hornwort species: coontail (*Ceratophyllum demersum*) and prickly hornwort (*Ceratophyllum echinatum*), coontail being the more common of the two. Hornworts are found in the submersed plant community from shore to depths of several meters. Lacking roots, the plants may drift at various depths during the growing season, at times becoming loosely anchored in the sediments. Unlike rooted aquatic plants that draw their nutrients primarily from the sediments, hornworts draw nutrients directly from the water. Hornworts are tolerant of cool temperatures and low light conditions.

Description: Both of Maine's hornwort species are submersed aquatic plants with coarse, branching stems and no roots. The leaves of both species are fork-divided and arranged in whorls of 5 to 12 leaves. Whorls of leaves are more closely spaced towards the end of branches giving the plant a raccoon tail appearance. Hornwort leaves are relatively stiff to the touch and typically hold their shape and position when pulled from the water, unlike many other plants with finely divided leaves. A close



Hornworts have fork-divided leaves arranged in whorls divided leaves. A close look at the leaves is needed to distinguish between species. Coontail leaves are generally forked only once or twice, flattened, finely serrated, with tiny teeth often tipped with a sharp spine. The leaves of prickly hornwort are generally forked three or more times, thread-like (round in cross-section) and largely smooth edged (though some small spines may be present). Minute flowers in the leaf axils, followed by spiny fruits, are produced on female plants only. Coontail fruits are smooth and have two spines at the base. The fruits of prickly hornwort have several spines of various lengths around the outer edge and a rough surface.

US Range: Both species are native to Maine, New England and much of North America. Of the two hornwort species found in Maine, coontail (*C. demersum*) is more common.



C. demersum



C. echinatum

Annual Cycle: Because hornworts are tolerant to low light and cool water, they are able to overwinter under the ice as an evergreen plant. Photosynthesis and growth slow during the winter months and resume with vigor in the spring. Male and female flowers occur on separate plants, making fertilization and seed production unreliable. Reproduction occurs mainly through plant fragmentation.



Prickly hornwort leaves are thread-like, not serrated, and forked three or more times

Value to the Aquatic Community: Because hornworts overwinter as evergreen plants, these species provide important habitat to many invertebrates and fish year-round. Waterfowl feed upon both foliage and fruit.

Look Alikes: May be confused with other plants that have finely divided leaves including fanwort, bladderworts, mermaid weed, water crowfoots, water marigold, and leafy water-milfoils.



Coontail leaves are stiff, flattened and serrated; they generally fork one or two times; note the tiny white flower attached to the stem by a slender stalk



Hornworts have branching stems and no roots

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