

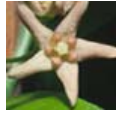


Invasive Plant Atlas of New England

Catalog of Species Search Results

Trapa natans

(Water chestnut
European water chestnut)



[:: Catalog of Species Search](#)



[Common Name\(s\)](#) | [Full Scientific Name](#) | [Family Name Common](#) | [Family Scientific Name](#) | [Images](#) | [Synonyms](#) | [Description](#) | [Similar Species](#) | [Reproductive/Dispersal Mechanisms](#) | [Distribution](#) | [History of Introduction in New England](#) | [Habitats in New England](#) | [Threats](#) | [Early Warning Notes](#) | [Management Links](#) | [Documentation Needs](#) | [Additional Information](#) | [References](#) | [Data Retrieval](#) | [Maps of New England Plant Distribution](#)

COMMON NAME

Water chestnut
European water chestnut

FULL SCIENTIFIC NAME

Trapa natans L.

FAMILY NAME COMMON

Water-nut family

FAMILY SCIENTIFIC NAME

Trapaceae

IMAGES



Floating rosettes



Close-up of
flower



Incursion



Habit



Flower



Fruit



Close-up of
Fruits

NOMENCLATURE/SYNONYMS

Synonyms: None

DESCRIPTION

Botanical Glossary

Trapa natans is an aquatic annual that grows as a rooted, floating plant. Its floating leaves are arranged in a rosette. Individually, the 2-4 cm (0.75-1.5 in.) long upper leaves are slightly rhombic to rhombic-ovate and are sharply dentate along the leaf margins. There are conspicuous veins on the lower surface as well as short, stiff hairs. The submerged lower leaves are alternate and feather-like and can reach up to 15 cm (6 in.) long. The petioles of the floating leaves are 0.6-1.8 m (2-6 ft.) long.

The inconspicuous white flowers consist of four 8 mm (0.3 in.) long, white petals and four green sepals, and are located in the center of the rosette. Flowering begins in the northeastern United States in July and continues until the plants are killed by frost. The fruit is a four-horned nut-like structure about 3 cm (1.2 in.) wide that develops underwater. Fruits ripen in about a month and can remain viable for up to about twelve years. Each seed can give rise to ten to fifteen rosettes, and each rosette may produce as many as twenty seeds.

Page References Bailey 734, Crow & Hellquist 209, Fernald 1050, Gleason & Cronquist 313, Holmgren 293, Magee & Ahles 768. See reference section below for full citations.

SIMILAR SPECIES

None

REPRODUCTIVE/DISPERSAL MECHANISMS

It has often been reported that waterfowl or water currents can move the seeds of *Trapa natans* long distances. However, the fruits weigh 6g and have been described as falling to the bottom of lakes "like sinkers," making them unlikely to be carried in the feathers of birds or downstream by moving water. The empty husks of the fruits do tend to float, possibly leading to the belief that they could be moved in these ways.

Trapa natans may also disperse by fragmentation. Plant fragments can be carried by water, waterfowl and boats to new locations.

DISTRIBUTION

Trapa natans is native to the warm temperate regions of Eurasia. It has been naturalized in Australia and has recently (1998) been reported from Ontario, Canada. In the United States it is present in the northeast in the states of New York, New Jersey, Pennsylvania, Delaware, Maryland and Virginia. In New England, it has been reported from Massachusetts, Vermont, New Hampshire and Connecticut.

HISTORY OF INTRODUCTION IN NEW ENGLAND

Sometime before 1879, *Trapa natans* was intentionally planted by a gardener at the Cambridge botanical garden in Fresh Pond, Cambridge, MA. This gardener reported planting it in other ponds as well. It was also distributed up to Concord, MA, where it was planted in a pond near the Sudbury River. By 1899, it was extremely invasive in the pond and the river, and needed to be pulled out. There is an 1859 record from Concord, MA, but notes on the specimen and from the New England Botanical Club indicate that this date is in error, and that it was actually from 1879. By 1920, *Trapa natans* had reached western Massachusetts. Since then, it has spread into Lake Champlain in Vermont, the Nashua River in New Hampshire (1998) and most recently the Connecticut River in Connecticut in 1999. Any area that is downstream of these incursion sites is threatened.

HABITATS IN NEW ENGLAND

Aquatic
Lake or Pond
River or Stream
Yard or Garden

Trapa natans is commonly found in placid, nutrient rich lakes and rivers with a pH of 6.7-8.2. Plants have also been found in freshwater regions of estuaries and exposed mud flats.

THREATS

Threats from *Trapa natans* are a result of the surface mats it forms, which cause competition for nutrients and space. These plants also have little nutritional value for wildlife. Its blooms and decomposition may contribute to lower levels of dissolved oxygen in shallow water, and its spiny fruit can founder horses or dogs. Furthermore, the spread of water chestnut has economic impacts resulting from the plant's ability to impede fishing, hunting, swimming, boating and commercial navigation. Control measures to restore these uses can be expensive, such as the \$5,249,685 spent

from 1982 to 2005 to clean-up Lake Champlain.

EARLY WARNING NOTES

This plant has just recently entered Connecticut and is not yet widespread. It should be watched for and reported.

MANAGEMENT LINKS

[Cornell Cooperative Extension \(Onondaga County\)](#)
General information including management options

DOCUMENTATION NEEDS

Documentation required: Photograph of floating rosette of leaves.
Best time for documentation: Summer, fall.

ADDITIONAL INFORMATION

[Integrated Taxonomic Information System](#)
Taxonomic information about the species

[PLANTS database](#)
General information and a map

[New Hampshire Department of Environmental Services](#)
General information

[Invasive Plant Council of New York State](#)
Photographs and general information

[Vermont Department of Environmental Conservation](#)
General information, drawings and management

[The Nature Conservancy](#)
Photographs

[Invasivespecies.gov](#)
Additional links

[Invasive Plants of the Eastern United States \(invasives.org\)](#)
Information on biological controls

[Lake Champlain Basin Program](#)
Information on Water Chestnut in Lake Champlain

[National Park Service: plant invaders of Mid-Atlantic natural areas](#)
General information

[The Chesapeake Bay Program](#)
General information

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DATA RETRIEVAL

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MAPS OF PLANT DISTRIBUTION IN NEW ENGLAND

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