

**Plant Invaders of Mid-Atlantic Natural Areas**

Swearingen, J., K. Reshetiloff, B. Slattery, and S. Zwicker. 2002. Plant Invaders of Mid-Atlantic Natural Areas. National Park Service and U.S. Fish & Wildlife Service, 82 pp.



Mike Naylor, MD DNR

Water Chestnut

Trapa natans

Origin: Europe, Asia and Africa

Background

Water chestnut was first observed in North America near Concord, Massachusetts in 1859. The exact path for the introduction is unknown.

Distribution and Ecological Threat

Water chestnut can grow in any freshwater setting, from intertidal waters to 12 feet deep, although it prefers nutrient-rich lakes and rivers. Presently, the plant is found in Maryland, Massachusetts, New York and Pennsylvania, with most problematic populations occurring in the Connecticut River valley, Lake Champlain region, Hudson River, Potomac River and the upper Delaware River. Water chestnut can form dense floating mats, severely limiting light

-- a critical element of aquatic ecosystems. This plant can also reduce oxygen levels, which may increase the potential for fish kills. It competes with native vegetation and is of little value to waterfowl. Water chestnut infestations limit boating, fishing, swimming and other recreational activities. Further, its sharp fruits, if stepped on, can cause painful wounds. Water chestnut has been declared a noxious weed in Arizona, Massachusetts, North Carolina and South Carolina. Its sale is prohibited in most southern states.

Description and Biology

- **Plant:** an annual aquatic plant with a submerged stem; stems can reach 12 to 15 feet in length; very fine roots anchor the plant into the mud.
- **Leaves:** at the water's surface, the plant contains a rosette of floating leaves. The saw-tooth edged leaves are triangular in shape and connect to an inflated petiole, which provides added buoyancy for the leafy portion; additional, feather-like leaves can be found along the submerged stem.
- **Flowers, fruits and seeds:** four-petaled white flowers form in June and are insect-pollinated. The fruit is a nut with four 1/2-inch, barbed spines. Seeds can remain viable for up to 12 years, although most will germinate within the first two years.
- **Spreads:** by the rosette and fruits detaching from the stem and floating to another area on currents or by fruits clinging to objects, birds and other animals.



Mike Naylor, MD DNR

Prevention and Control

Specialized methods of control are required to handle water chestnut infestations. Because of the likelihood of unintentional spread offsite and injury to those attempting control, only trained and certified persons should undertake management. Manual, mechanical and chemical techniques are used in it's control. Complete removal of plants is imperative, as floating, uplifted plants and plant parts can spread the plant to new locations. It is critical that any removal take place prior to the July seed set. Eradication is difficult because water chestnut seeds may lay dormant for up to 12 years. Biological controls are being investigated, but no species have been approved for release.

Native Alternatives

Some aquatic nurseries carry native and non-invasive alternatives. However, due to the similarity in appearance among aquatic plants to the untrained eye, they are easily confused. Contact your state natural resource agency, native plant society or other resource (see [reference](#) section) for assistance in locating species appropriate to your location and site conditions.

[[Home](#)] [[Contents](#)]



Invasive.org is a joint project of
The Bugwood Network, [USDA Forest Service](#) & [USDA APHIS PPQ](#).
The University of Georgia - [Warnell School of Forest Resources](#) and
[College of Agricultural and Environmental Sciences](#) - [Dept. of Entomology](#)
Last updated on Wednesday, November 05, 2003 at 01:26 PM
Questions and/or comments to the [Bugwood Webmaster](#)