

European Water Chestnut (EWC)

An Invasive Aquatic Plant Threatening Freshwater Ecosystems in Canada



Photo: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

What is it?

European water chestnut (*Trapa natans*) is an annual invasive aquatic plant that forms individual rosettes, which can then form dense floating mats that shade out the water below, killing native vegetation and subsequently reducing water oxygen levels.

The abundance of plants can lead to the entanglement of boat motors and make swimming almost impossible. EWC is an annual plant that blooms in June and produces seeds into August.

This is a different species from the water chestnuts typically found at the supermarket.

Where is it?

European water chestnut is native to Eurasia and Africa. It was introduced to North America as an ornamental plant at the Cambridge Botanical Garden in Massachusetts. The aquatic plant was most likely introduced to Canada through improper release or through a boat contaminated with EWC.

In Ontario, it was first spotted in a section of the Ottawa River in eastern Ontario within Voyager Provincial Park. It establishes in shallow nutrient-rich freshwater and is found approximately 2-4 m deep.

This is a prohibited species in Ontario under the Invasive Species Act (2015) due to its harmful impacts on the environment, economy, and society. It is also mandatory by law in Ontario that watercrafts and equipment should be cleaned, drained, and dried after use in water bodies to prevent the spread of aquatic invasive species.

Impacts

- EWC can quickly form dense mats over a large area which can shade out and outcompete native vegetation, leading to a decrease of plant biodiversity.
- Abundance of this plant reduces light penetration and depletes oxygen, impacting the health of native aquatic species.
- It puts a stop to common recreational activities such as swimming, angling, and boating in the area it infests.
- Its woody and barbed seeds are also a hazard, causing injury when stepped on, and limiting recreation on shore.



Early Stages of EWC Mat

How they Spread



Photo: arachphotobia
iNaturalist

- Improper release in water bodies
- Seed dispersal via water currents or attaching to a waterfowl
- Seeds can be picked up by boats and spread to other water bodies
- Viable barbed seed pods sink down to the substrate, making them difficult to spot
- Seed pods can remain dormant for up to 12 years and, if left unchecked, can repopulate the area
- Plants can grow rapidly and spread over a large area; each rosette can produce around 15-20 seeds

Identification



EWC Seed



EWC Rosette

- Floating green leaves with sharply-toothed edges
- Leaves form a densely crowded rosette up to 30 cm in diameter
- Leaf stems are up to 15 cm long, with a spongy swollen section that helps the plant float
- Feather-like underwater leaves with dissected leaf segments
- May have small white flowers around 8 mm long with four petals
- Hard "woody seeds" that are 3-4 cm wide, with sharp barbed spines
- Greenish brown seeds sink to the bottom and are viable. Older black seeds float, are not viable, and wash up on sandy beaches posing a hazard to shoreline activities

What can you do?

Here are some easy steps of what you can do to help stop the spread of European water chestnut:

- Learn how to identify EWC and prevent accidental spreading
- Avoid planting in water gardens; use native plants instead
- Never release into any water bodies
- Inspect your watercraft and boating equipment, and remove any EWC found before leaving the area; always clean, drain, and dry
- Avoid boating in areas known to have EWC

If you see European water chestnut, report sightings to:

- Ontario's Invading Species Awareness Program (ISAP) : 1-800-563-7711 or www.invadingspecies.com
- EDDMapS www.eddmaps.org

For more information on, European water chestnut, visit:

- **Invasive Species Centre:** <http://www.invasivespeciescentre.ca/invasive-species/meet-the-species/>

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