

DUC's European Water Chestnut Eradication Program in Ontario

Control and monitoring disrupt the seed cycle in Eastern Lake Ontario and the Rideau River

In 2014, DUC took the lead on the control and monitoring of European water chestnut in the Lake Ontario watershed. The invasive plant is an aquatic species that outcompetes native plants, forming dense mats that can block sunlight from penetrating the water's surface.

Although widespread in the northeastern United States, the plant is only found in small pockets along bordering waters in Ontario. The plant was introduced in the United States in the late 1800s for its attractive qualities. But it is so fast-growing that it can cover the surface of the water with vegetation, and in extreme cases can reduce oxygen that is vital to fish and other aquatic life.

Swift action is essential—before the fast-spreading plant becomes established in Ontario.

The good news? It's an annual plant that depends on successfully developing seeds each year. But the bad news is that the seeds can lay dormant for up to a decade, so monitoring is necessary for eradication.

DUC currently monitors some 40 sites, between Brighton and Gananoque, where water chestnut may become established. Clusters of the plant have been found around Wolfe Island, in the Rideau Canal and in the Greater Cataraqui River.

Water chestnut is best removed by hand pulling. This labour-intensive method is the preferred control technique because it removes the entire plant, preventing mature seeds from dropping into the sediment. It is necessary to return to the site, year after year, to remove new plants that have propagated from seeds that were hidden in the lake or river bottom.

“Water chestnut spreads easily along lakes and river systems,” says [Kyle Borrowman](#), DUC's program coordinator for European water chestnut. “We're committed to early detection and control measures to protect vulnerable wetlands and waterways.”

Wolfe Island (St. Lawrence River)

DUC and its partners have discovered and controlled clusters of the plant along the inlets, bays and creeks of Wolfe Island, located in Frontenac Islands Township. The main invasions have been in Bayfield Bay and Button Bay, along the southern shoreline of the island. Subsequently, smaller clusters were also found in Brown's Bay (2016) and Lewis Bay (2017).

Since the control program began, the amount of water chestnut in these bays has decreased dramatically, year after year. Currently, the largest population (Bayfield Bay) is less than a quarter of its original size, while other small populations have disappeared completely.

Rideau Canal (Ottawa)

DUC discovered the plant on the Rideau River in 2014. The next summer, [volunteers from the Rideau Valley Conservation Authority joined conservation staff in hand-pulling the plants](#) near the Black Rapids Lockstation, part of the Rideau Canal National Heritage Site. Subsequent area inspections have uncovered just a few plants and clusters south of the area but monitoring continues to protect the waterway.

Greater Cataraqui River (Kingston)

DUC's monitoring also discovered water chestnut in the Greater Cataraqui River, on the south side of the Belle Park peninsula in the City of Kingston.

The site is not suitable for hand-pulling plants because, as consultation with environmental authorities revealed, there is concern about contaminated sediments in the river bottom which could be pulled up into the water with the plants.

Instead, DUC received special permits from Parks Canada and the Ontario Ministry of Environment, Conservation and Parks to use an approved aquatic herbicide commonly used at marinas around the province. This approach reduced the plants by 92% with minimal impact to native plants in the area.

Chemical control is used in the United States to manage water chestnut but this was the first attempt to control it this way in Canada. While hand pulling is still the preferred method for this program, it is promising to have this effective tool available to help eradicate this species from Ontario's waterways.

Support is critical to maintain monitoring

DUC is working on this program in partnership with the [Ontario Ministry of Natural Resources and Forestry](#), the [Invasive Species Centre](#) and the [Ontario Federation of Anglers and Hunters](#). These partners have supported the work with funding and collaboration. Additional support, including "eyes on the water", came from the Ontario Wildlife Foundation, landowners and local sporting clubs.

DUC has received further support for this important work from these partners over the years:

- Frontenac Islands Township
- Rideau Valley Conservation Association
- Ontario Invasive Plant Council
- Voyageur Provincial Park
- Queen's University Biology Department
- Elbow Lake Environmental Education Centre, Queen's University

Together we're winning the battle, but critical funding is needed to finish the job.