

City of Monroe Water Resources Department

Questions & Answers About

Duckweed and Other Unwanted Vegetation on City Lakes

What is Duckweed?

Duckweed is a small flowering plant that consists of a single flat oval leaf measuring no more than one-half inch long that floats on the surface of water. Duckweed is a rapid growing plant that buds and divides once per day. This rapid growth can quickly kill off healthy water cleaning algae.

What causes seasonal blooms of Duckweed on City Lakes?

Abundant growth is caused by a higher level of nutrients (phosphorus and nitrogen) in the water. These nutrients come from rainfall runoff (stormwater pollution) generated by agricultural land, lawns, and other urban sources.

Is Duckweed harmful or dangerous?

Duckweed is primarily an aesthetic issue and poses no direct health threat to people or pets. It does encourage the growth of a form of bacteria that can kill fish, turtles and other plants, but this is rare. Duckweed can improve water quality by absorbing phosphorous and nitrogen, and can reduce mosquitos by blocking them from laying eggs.

Is there any impact or concern for my drinking water quality?

Duckweed does not impact drinking water quality, but may create challenges for pump intakes. The city uses a five step water treatment process that removes organic matter, including duckweed, from the water.

What are the control strategies for Duckweed?

Duckweed is primarily an aesthetic issue; therefore, the cost and benefit of control must be evaluated. There are three common practices used to treat and/or remove duckweed.

- Physical Removal – This involves netting, raking, or vacuuming plants off the lake surface and disposing of or recycling the plant material. This is a difficult and costly option due to boat and equipment costs and labor involved. The City may use physical removal in small areas, but physical removal on larger areas is cost prohibitive.
- Chemical Treatment – Use of approved herbicides for spot treatment of duckweed outbreaks is approved by the NCDEQ under NPDES General Permit NCG560000. The City Water Resources Department staff hold the required North Carolina licensing to safely apply herbicides on duckweed or other unwanted vegetation. Careful planning and application of herbicide is employed to ensure no impact to drinking water supplies.
- Biological – Sterile Grass Carp can be purchased to provide control of unwanted lake vegetation, but primarily eat submerged vegetation before consuming duckweed. These carp require a special permit before introducing them into a lake. The City has reviewed this option with NC Wildlife Commission and determined that the carp would not be a viable option to control or remove the duckweed.

What is the long-term solution for Duckweed?

The long-term solution to the duckweed problem is to improve the overall health of the water quality in our City lakes. Decreasing the inflow of nitrogen and phosphorous into the lakes, by reducing stormwater pollution, is an important first step. Stormwater pollution from agricultural and urban areas, and the related nutrient over enrichment, has resulted in city lakes being placed on the NCDEQ impaired water 303D list. Residents and farmers are urged to use best practices for fertilizer and land use operations to reduce pollutants entering City lakes. The City has also implemented a vegetative buffer management program that requires an undisturbed vegetation area be maintained around lakes and streams. This provides a natural filter for some runoff pollutants, and helps prevent them from entering City lakes.

For questions about what is being done to reduce stormwater pollution, citizens are encouraged to call City of Monroe Stormwater Division at (704) 282-4515 or Union County Stormwater at (704) 283-3642. The North Carolina Department of Environmental Quality can be reached at (919) 707-3687 for information about reducing stormwater pollution and the 303D Impaired Water list.

What other undesirable aquatic plants are found in City Lakes and are any of them harmful?

Hydrilla

Hydrilla is an aggressive aquatic plant that is a submersed perennial herb. The plant will root in the bed of the lake and has long stems that reach to the surface where growth becomes horizontal and forms dense mats. Hydrilla can clog water intakes and flow. Hydrilla can form impenetrable mats around docks, clog boat propellers and clog the cooling water intakes on boat motors. It is considered one of the worst aquatic weeds in the United States, but is not harmful to humans or drinking water quality.

Blue-green algae

Blue-green algae are not algae at all, but types of bacteria called cyanobacteria. They are normally present in bodies of water and common in North Carolina. This type of bacteria thrives in warm, nutrient-rich water. When conditions are right, the blue-green algae can grow quickly forming “blooms.” Certain varieties of blue-green algae can produce toxins that are linked to illness in humans and animals. Since there is no swimming in any city lakes this is a low risk to people. The City’s water treatment process provides a barrier to protect drinking water quality.

Aquatic Hitchhikers

Undesirable aquatic plants can enter city lakes when boats are launched. Because of this, each city lake has a lake inspector present to check over the boat to make sure no invasive plant species are attached to the hull, propeller or trailer. The inspector will check the live well, drain plug, and various items inside the boat including the anchor, paddles, fishing gear, and anything that comes in contact with the water. We appreciate all boaters being aware of this potential risk and helping to protect the City lakes.

Where do I call to report a concern or to get additional information?

For questions related to City lakes or drinking water call (704) 282-4601.