

LAKES ERIE & CAMPBELL



L A K E E R I E & C A M P B E L L N E W S L E T T E R

S P R I N G 2 0 1 7

The following information has been provided by Skagit County Public Works Department and the Lake Management District No. 3 (LMD 3) Advisory Committee to the residents of the Lake Erie & Campbell Lake LMD with the intent of increasing public awareness and involvement related to lake management issues.

Maintaining a Healthy Ecological Balance in Our Lakes

A healthy lake ecosystem is a delicate balance between diverse types of aquatic plants and animals, nutrient levels, algae growth, precipitation, wind, water depth, pH, light and temperature, and various other factors that are not well understood.

Why are aquatic plants so important?

Native aquatic plants are a critical component of a healthy lake. The plants provide food, dissolved oxygen and habitat for invertebrates, fish, and wildlife; prevent shoreline erosion; and improve water quality. A diverse healthy native plant community is also more resistant to invasion by opportunistic noxious weeds.

Are algae blooms a cause for concern?

Believe it or not, algae are also a vital component of lakes because they form the base of the food chain. There are many different species of algae. Most algae are not harmful but can sometimes create undesirable water quality conditions that can last for several days. Occasionally, some blue-green algae species can produce toxins or deplete oxygen and cause fish kills. Blue-green algae are actually cyanobacteria that have similar qualities to algae. Blue-green algal blooms often look like spilled green paint floating on the water. Swirls of blue and white will occur as the blue-green algae starts to decay.

If you are unsure whether or not an algal bloom is toxic, a good rule of thumb is to avoid contact with the water during a bloom. If a potential toxic algal bloom is suspected, contact the Skagit County Health Department to post Caution signs



Algae are the base of the food chain and essential to the life in a lake.

What can homeowners do?

Reducing nutrient inputs into the lake is a key step to managing excessive aquatic plant and algae growth. As lakefront property owners, there are several things that you can do:

- Inspect & maintain septic systems
- Do not feed waterfowl
- Reduce or eliminate the use of fertilizers and pesticides
- Only use phosphorus free, slow release organic fertilizers
- Properly dispose of pet waste
- Wash vehicles at a licensed car wash
- Reduce lawns and plant native plants along shoreline

For more information:

www.ecy.wa.gov/programs/wq/plants/algae/lake

Suspect a blue-green algal bloom?

Remember, not all algal blooms are toxic:

- ◆ When in doubt, stay out!
- ◆ Avoid contact with water containing algae
- ◆ Keep pets out of the water

For questions or concerns regarding algal blooms in Skagit County, contact Polly Dubbel

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around the lake. Lab tests are the only way to confirm whether or not there are any toxins present. So far, there have only been two known incidences where toxin levels exceeded levels of concern in Lake Erie in 2015. There have been no known incidences where toxins exceeded levels of concern in Lake Campbell.

What causes algal blooms?

The causes and degrees of algal blooms in lakes can be very complex and sometimes unpredictable. Nutrients, primarily phosphorus, are the key ingredients that can trigger algal blooms in lakes. More phosphorus equals more algae growth. Nutrients can come from a variety of sources such as, fertilizers, failing septic systems, animal waste, and decaying plant material. Other important factors include sunlight and temperature.

What is the solution?

Maintaining a healthy ecological balance is pretty complicated, especially for shallow nutrient-rich lakes like Erie and Campbell. Excessive nutrients, sunlight, and warmer temperatures can increase plant growth and trigger algal blooms. Aquatic plants tend to flourish when algae is kept in check because good water clarity allows sunlight to reach the plants. Plants help reduce algal blooms because they take up the nutrients so there is less phosphorous available to stimulate algal blooms. Algal blooms tend to increase when aquatic plants are controlled because the nutrients are released back into the water column and lake bottom as plants decompose.

What is the history of algae control in the lakes?

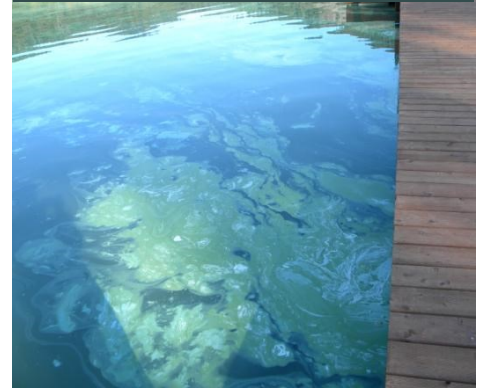
Algal blooms are not something new to Lakes Erie and Campbell. In 1985, prior to forming the Lake Management District, a lake restoration study was performed to identify solutions for controlling the algae. 573 dry tons of aluminum sulfate was applied to both lakes to remove phosphorus, the key ingredient for algal blooms. This treatment resulted in reduced algal blooms for about ten years and increased water clarity which in turn stimulated excessive plant growth. Algae management was not included in the scope of work financed under the Lake Management District because it was determined that it would be too expensive and too risky. If the treatment is applied incorrectly, it can deplete dissolved oxygen and cause fish kills. It would also require an updated water quality study and Algae Management Plan for both lakes. If algae management is something LMD 3 property owners want to pursue, special assessment rates would need to be increased in order to cover the additional costs. Increasing special assessment rates would require going through the same public hearing process for establishing the LMD per RCW 36.61.

What is the history of aquatic plant control in the lakes?

In 1986, a mechanical aquatic weed harvester was purchased to try to control the excessive weed growth. Plants were cut and conveyed onto a barge. However, it ended up being too labor intensive, high maintenance, and there was no good way to dispose of the plants after they were harvested. In addition, the mechanical harvester appeared to have helped increase the spread of aquatic plants, especially Eurasian watermilfoil. This method is no longer used in Lakes Erie and Campbell.



2010 - Lake Erie Algal Bloom



Integrated Aquatic Plant Management Plan

In 2000, a Integrated Aquatic Plant Management Plan (IAPMP) was prepared for Lakes Erie and Campbell to examine different alternatives for managing the aquatic plant growth. The goal was to develop affordable and effective solutions that maintain beneficial uses and a healthy ecological balance in the lake and the watershed. The Lakes Erie and Campbell IAPMP is a comprehensive plan that identifies a two-pronged strategy including herbicide treatments for initial removal of Eurasian watermilfoil and grass carp stocking to maintain lower aquatic plant densities. The IAPMP and annual reports are available on the County website: <https://www.skagitcounty.net/LMD3>

Aquatic Plants & Algae Resources:

[Aquatic Plants, Algae, and Lakes:](http://www.ecy.wa.gov/programs/wq/links/plants.html)

<http://www.ecy.wa.gov/programs/wq/links/plants.html>

[Aquatic Plant Management:](http://www.ecy.wa.gov/programs/wq/plants/plantmgmt.html) <http://www.ecy.wa.gov/programs/wq/plants/plantmgmt.html>

[Aquatic Plant Identification Manual:](http://www.ecy.wa.gov/Programs/wq/plants/plantid2/index.html) <http://www.ecy.wa.gov/Programs/wq/plants/plantid2/index.html>

[Freshwater Algae Control:](http://www.ecy.wa.gov/programs/wq/plants/algae/index.html) <http://www.ecy.wa.gov/programs/wq/plants/algae/index.html>

Lake Management District Aquatic Plant Control Program

LMD 3 Overview

In 2001, the property owners voted to create Lake Management District No. 3 (LMD 3) in order to finance the management of invasive and problematic aquatic plants in Lakes Erie and Campbell. The lakes were combined into one LMD because they are hydrologically connected, and invasive aquatic plants can easily get transported from one lake to the other. LMD 3 was reestablished in 2011 for another 10 years.

Annual Lake Maintenance Activities

A licensed contractor conducts the following lake maintenance activities for the LMDs each year:

- **Pre-Treatment Survey:** identify and map noxious and problematic aquatic plant species that need to be controlled.
- **Herbicide Treatments:** treatment notices are mailed to property owners and posted on docks, shorelines, boat launches and swimming areas. Notices identify herbicides applied and any water use restrictions. Limiting boat use during herbicide applications is encouraged. Wave action from boating activities can reduce the effectiveness of herbicide treatments.
- **Post-Treatment Survey:** monitor the effectiveness of the herbicide treatments and look for new growth of invasive or problematic aquatic plants. Determine if follow-up treatments are necessary.
- **Annual Report:** includes a map of plant growth and areas treated, summary of lake maintenance activities and recommendations for the following year. Reports can be found on the County website: <https://www.skagitcounty.net/LMD3>

Eurasian Milfoil

Eurasian watermilfoil (Milfoil) is an invasive aquatic plant species that primarily spreads by plant fragments hitchhiking on boats, boat motors, boat trailers, and fishing equipment and can stay alive for weeks if kept moist. It is extremely difficult to permanently get rid of Milfoil. In 2002, a whole lake treatment of the herbicide Sonar was applied to Lake Erie to try to eradicate Milfoil. In Lake Campbell, the granular 2,4-D systemic herbicide was applied to 60 acres of Milfoil along the shoreline at the west end of the lake. Milfoil prevention signs were placed at the public boat launches at both lakes. Up until 2008, Milfoil appeared to be completely eradicated in Lake Erie. Now there are just a few patches of Milfoil plants primarily located along the shoreline at the south end of the Lake. Milfoil continues to be problematic in Lake Campbell and remains the primary focus of lake management. It was recently discovered growing in private ponds located along the shoreline of Lake Campbell. The ponds were treated for Milfoil in 2015 and 2016.



Native Aquatic Plant Control

Management objectives for native aquatic plants take into consideration the many important functions they serve in lake systems, as well as the potential dangers they can pose for recreational users when certain densities are reached. Native plants are not yet prevalent in Lake Campbell, but they have expanded throughout Lake Erie to the point management is deemed necessary. Najas are the dominant native plant species in Lake Erie. However, the thin leafed pondweed is starting to become more prevalent. Per permit requirements, only contact herbicides such as diquat can be applied along 50% of the shoreline to control native plants. Contact herbicides do not kill the plant at the root. One or two spot treatments may be required during the season, depending on the degree of native weed growth.

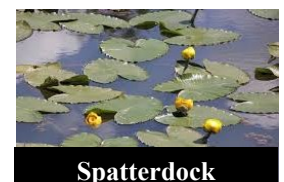
Grass Carp



In order to keep the aquatic plant growth under control and reduce the need for herbicides, both lakes were stocked with 9-11" triploid grass carp in 2003, 2006, and 2009. The grass carp are triploid, meaning they cannot reproduce. Fish screens were also installed at the outfalls to prevent the carp from escaping. The screens are maintained by volunteers. Grass carp only feed on plants at the age they are stocked and unfortunately, they prefer native plants over Milfoil. Sometimes it can take several years to achieve plant control using carp. If too many carp are stocked they can completely devoid a lake of all aquatic plants which can lead to algal blooms.

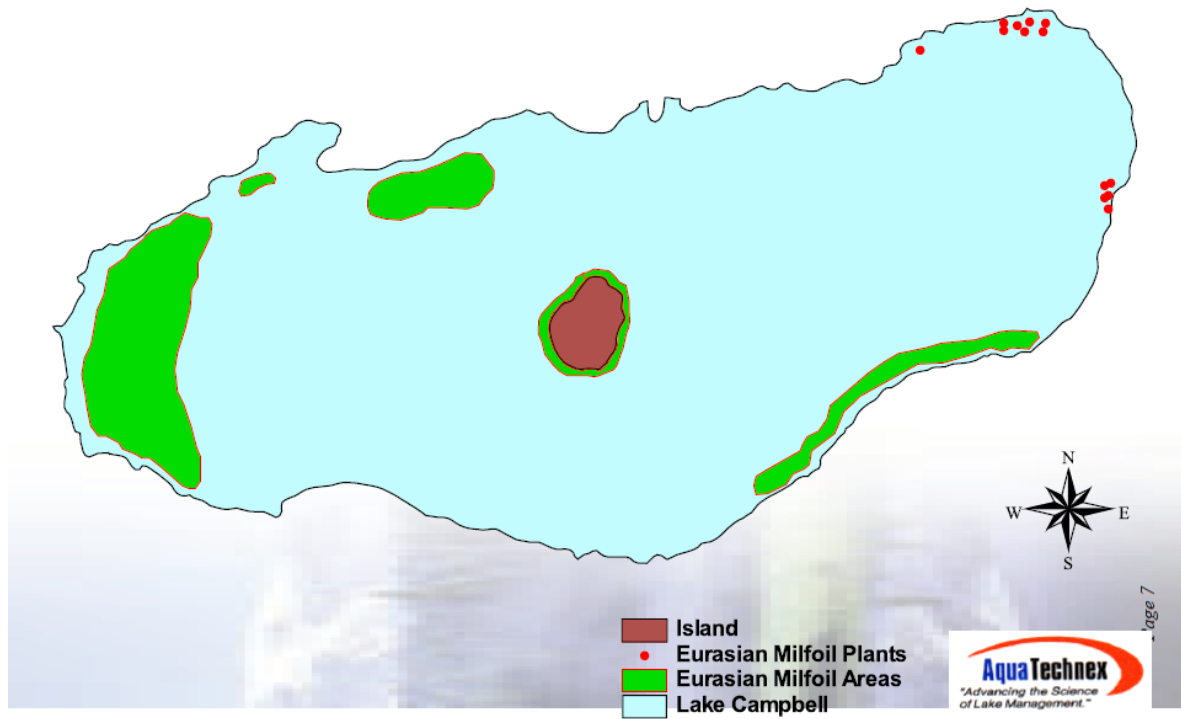
Fragrant Water Lilies, Yellow Flag Iris, and Purple Loosestrife

Although less of a priority than Eurasian Milfoil, noxious fragrant white water lilies, yellow flag iris, and purple loosestrife are targeted for control as needed along residential shorelines and public boat launches in both lakes. A 1% solution of the herbicide Glyphosate (for aquatic use) is applied directly on the leaves of the plants while they are at the surface and flowering. Visible effects occur within 3 to 4 weeks. Spatterdock, a native floating leafed plant, also occasionally calls for some targeted control if it starts to encroach into areas that negatively impact recreational uses of the lakes.

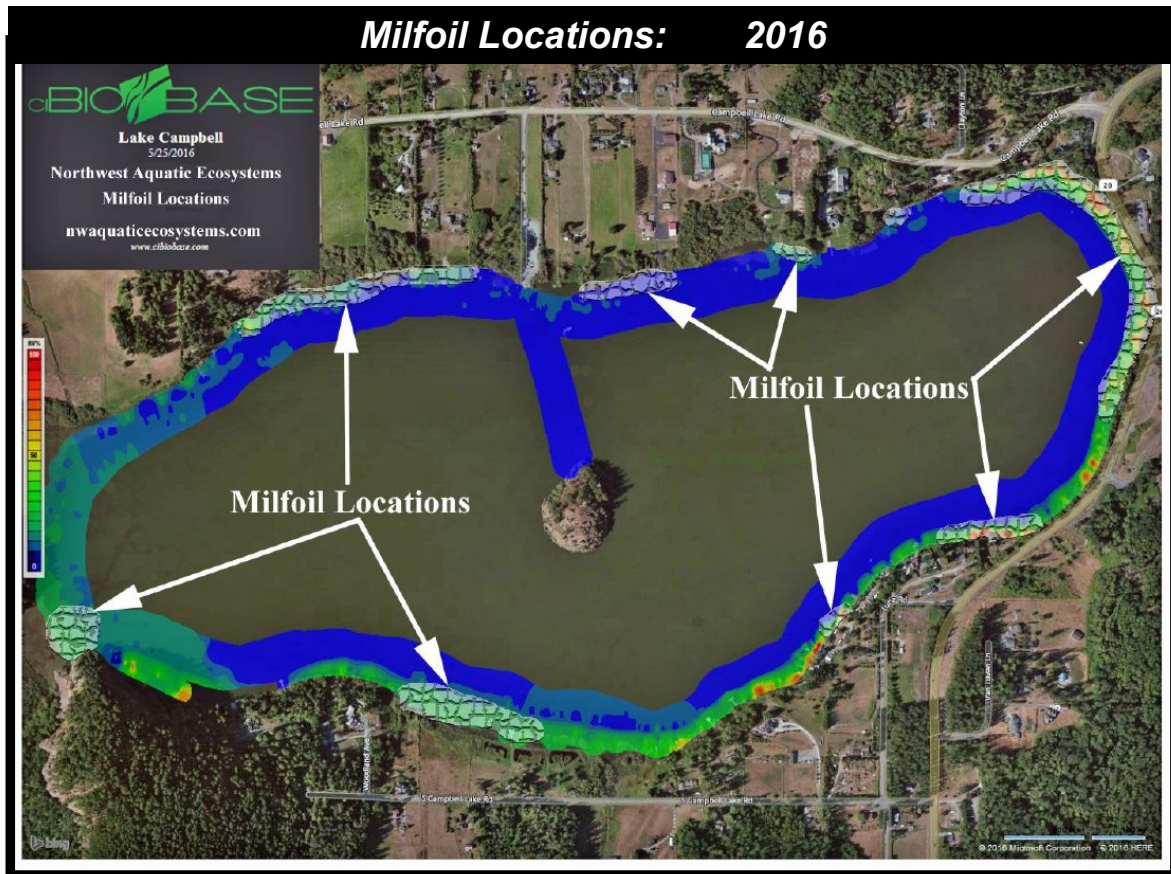


Lake Campbell Milfoil Control Program 2002 — 2016

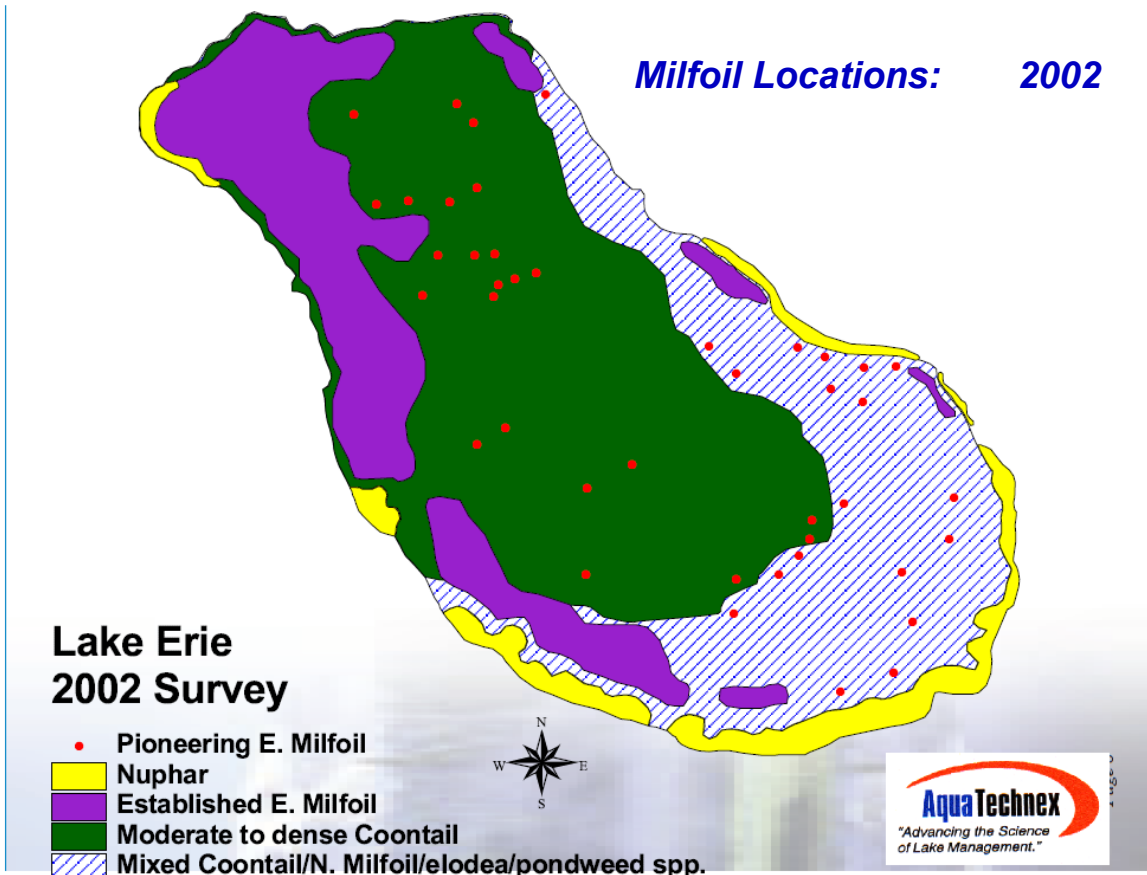
Milfoil Locations: 2002



Milfoil Locations: 2016



Lake Erie Milfoil Control Program 2002 - 2016



LMD 3 Citizen Advisory Committee

Marsha Flowers
6080 Campbell Lake Rd.

Michael Felt
13205 Deane Dr.

Ed Goodman
13777 Goodman Lane

Abby Jacobs
13159 Dean Dr.

Dale Ramerman
13154 Heart Lake Rd.

LMD 3 has a citizen advisory committee composed of volunteers who reflect various user interests and geographic distribution within the boundaries of the LMD. They are appointed by the Skagit County Commissioners. The Committee works in cooperation with County staff, to provide citizen input on management decisions within the context of the LMD charter. The committee meets annually, or as often as needed, to review the program's progress, track the budget, and develop and approve work plans for managing the lake. If you are interested in joining the Advisory Committee, or being more involved in your Lake Management District, contact Tracy Alker: tracya@co.skagit.wa.us or 360-416-1400



Help Prevent the Spread of Invasive Aquatic Species

Clean, Drain, Dry

One of the most effective ways to help prevent the spread of invasive aquatic species is to develop a routine in cleaning your boat, kayak, canoe or any other watercraft after each use.

- ◆ **CLEAN**— boat, hull, anchor, ropes, chains, trailer, vehicle and remove sediments and organisms at their place of origin
- ◆ **DRAIN**— all water from the outboard unit, ballast, live-well, etc.
- ◆ **DRY**— dry all areas (decontamination of aquatic invasive species takes roughly 48 hours after equipment is thoroughly dry—temperature and humidity dependent)

Finally, properly dispose of debris and live bait.

For more information about decontamination protocols go to:

<http://wdfw.wa.gov/ais/youcanhelp.html>.

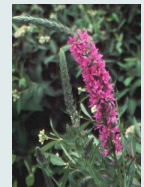
Or

<http://www.ecy.wa.gov/programs/wq/nonpoint/CleanBoating/aquatic.html>

Noxious Aquatic Plants

Shoreline Plants

- Purple Loosestrife (*Lythrum salicaria*)
- Yellow Flag Iris (*Iris pseudacorus*)



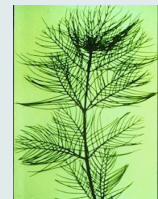
Floating – Leaved Plants

- Fragrant Water Lily (*Nymphaea odorata*)



Submersed Plants

- Eurasian Watermilfoil (*Myriophyllum spicatum*)



Nuisance Native Aquatic Plants (Lake Erie)

Submersed Plants

- Naiad (*Najas guadalupensis*)
- Slender Leaved Pondweed (*Potamogeton filiformis*)

