



AquaTechnex

*"Advancing the Science
of Lake Management"*



**Erie and Campbell Lakes LMD
2007 Year End Report**

**Prepared for
Skagit County LMD
Mt. Vernon, WA**

Fall, 2007

Erie/Campbell 2007 Year End Report

Introduction

Both Erie and Campbell lakes are located in the western portion of Washington States Skagit County. Lake Erie is a 110-acre water body with a mean depth of 6 feet and a maximum depth of 14 feet. The lake has a relatively small watershed of only 1.62 square miles. The shoreline is a mixture of both residential and commercial real estate with large areas still undeveloped. Lake Erie drains into Lake Campbell, which is located approximately one mile bearing southeast. Lake Campbell is 370 acres consisting of a mean depth of 8 feet and a maximum depth of 16 feet. Campbell has a watershed of 5.68 square miles.

A Lake Management District (LMD) was formed in 2002. It has been pro-active to find solutions for both lakes since. Aquatechnex has been selected as the most qualified contractor since the forming of the LMD. Activity on the lake from 2002-2006 is on file and available through the county. The most recent major treatment prior to 2007 was a milfoil/lily program in 2005. 35 acres of milfoil along with 1 acre of fragrant water lily were targeted. The 2006 season review will discuss briefly the results from that treatment as well as serve as a reminder of what took place during the 2006 season.

2006 Season Re-Cap

Two treatments took place in the summer of 2005 for management of both Eurasian milfoil and Fragrant water lily on Lake Campbell. The shoreline was sporadically infested with both Milfoil and Lilies. For the milfoil, a selective broadleaf herbicide DMA-4, IVM (active 2,4-D)

was used for control of all infestations. The Fragrant water lily was sprayed with the translocation herbicide AquaPRO (active glyphosate). Both treatments were on a two-treatment program once in the first week of August with a follow-up the third week of August. Both treatments were extremely successful. Sample points in 2006 show a control of > 95% for targeted treatments when comparing to survey sampling prior to the 2005 survey. This concluded management activities for 2005. Lake Erie did not have any treatment in 2005 following a survey that brought up no noxious weed populations warranting a treatment.

Though there was no herbicidal treatment in 2006 on either lake, a significant triploid grass carp stocking took place in early May. 600 8-12 inch carp were introduced into Lake Campbell and 200 into Lake Erie. Survey results from this year show a significant change in native submersed weeds, leading our group to believe the grass carp are actively removing natives. A hostile take-over of Northern and Hybrid milfoil has erupted as a result in Lake Campbell, both plants being at the bottom of the carp food preference list. Lake Erie remains fairly native weed dominant with really only widgeon grass as the dominant species in that lake as of now.

The Erie/ Campbell LMD hired Aquatechnex to implement a monitoring program of these lakes to characterize the aquatic plant communities and helps determine the need for additional aquatic plant management activities over the life of the LMD. A detailed set of surveys took place over the course of the summer. Plant populations were recorded and presented to the county and LMD in the 2006 report. It was clear that the successful 05' milfoil treatment pooled with the 06' grass carp stocking caused Lake Campbell to be overcome with the dominant Northern and Hybrid milfoils. Erie remained the same with a dominant native weed population throughout the entire lake. One year of no action caused the variety milfoil population to grow considerably in size. One year of no

action also enabled the LMD to carry-over its resources from 2006 to 2007. The winter of 2006 held discussions and ideas leading to an action plan for the season ahead.

Surveys

Both Erie and Campbell Lakes received a survey on June 4th and 5th. This was at the direction of Skagit County. Timing was as such due to a need for an LMD meeting and ample preparation for potential treatments. A business and residential notice was required for both as well if treatment was going to occur. The early surveys had a few benefits as well as a few drawbacks. We will look at what was found in Erie first.

Lake Erie was seemingly weed free during our first survey. Nitella, a Macro Algae that grows low in the water column, was the only plant life found at a number of points. This is due in part because it is on the low end of the Grass Carp feeding preference list. No milfoil was detected initially either. Sporadic Iris plants dotted the shoreline (Class C noxious weed.) The Nuphar (native lily) patches were taking shape and already looking to be larger in population than 2006.

Lake water clarity at Erie was 7.5 feet. This is far more than what is generally recorded. If this clarity was to remain all summer, the potential for aquatic plant growth later in the season was real.

Lake Campbell was a different situation altogether. The survey found a considerable reduction in native submerged aquatic plants and significant amounts of Northern and Eurasian milfoil beds. Many of the milfoils found have been hard to properly identify. Plant samples were submitted to Ecology in 2006, to identify the different milfoil species. What is known is that the samples were

Eurasian, hybrid and Northern milfoil. The 2007 survey found Eurasian as well.

Lake Campbell generally has water clarity of 2-3 feet. This years survey turned up Secchi disk readings of 7-8 feet on average. This water clarity allowed plants to grow to deeper water depths. In all, the survey turned up 50.64 acres of milfoil. There was a mix of all varieties throughout, but Eurasian species were dense enough in all areas to be suggested for treatment. A small population of Fragrant water lily was spotty in a handful of areas around the lake as well. It was time to meet with the County and the LMD to discuss our results.

2007 Meeting & Discussion

A meeting was held on June 5th between the County, Erie/Campbell LMD, guest members of the Samish Indian Tribe and Aquatechnex. This meeting was held to discuss the 2006 season, 2007 survey results, state of the LMD, budget for 2007 and any other pertinent material that warranted attention. The primary goal of Aquatechnex was to discuss the survey results and present control options for the LMD to make a decision on. The main concern was having the ability to control the entire 50.64 acres of milfoil infestation while staying within the budget. The only way that this fit would occur was with the usage of DMA-4, IVM (2,4-D.) This herbicide has been used on the lake in the past and had good results. This product is a systemic herbicide that is target specific for this noxious species. Any additional fund was to be directed towards the spraying of fragrant water lilies. Lake Erie was to receive treatment as well for its overgrowing native lily pads. Select areas were to be sprayed on both sides of the boat launch, the RV Park, and individual resident frontage. The meeting was adjourned and Aquatechnex got to work

organizing treatment dates and a business/residential notice distribution.

Treatment

Two separate treatment programs took place during the 2007 season. First and Foremost was a large-scale milfoil control program on Lake Campbell. On July 19th, Aquatechnex had a crew of applicators treated the 50.64 acres using a 17-foot Lund Applicator Boat equipped with a 50-gallon holding tank. Aquatechnex and County staff navigated the treatment areas again in September during the non-related Lily spraying. There were no indications of surface milfoil in most of the treatment areas. What we did find was very ill in nature, and would not likely survive the over-wintering process.

The second treatment program was for the control of Fragrant White Water Lily's on both Erie and Campbell. Lake Campbell had less than half of an acre sporadically around the lake. The LMD has been on top of this floating leaf plant in Lake Campbell and has nearly wiped it out. Within two years, the Fragrant Lily's may be completely out of Lake Campbell, provided everyone allows us to control them.

Lake Erie received a similar small Lily push back. Nuphar, or Native Yellow Lily, is the primary problem at Erie. These plants have been untouched since their introduction into the lake. In the past, the Native Lily was considered a native plant, therefore could not be controlled. The new permit that was issued to the lake effective spring 2006, included wording that allows native plants beyond nuisance levels to be controlled to a certain degree. The primary problem at Erie was the boat launch ramp. The Lily pads were starting to take over, making loading and unloading gradually more

difficult. Both sides were pushed back, along with some spotty clean up around a few docks that were hardly accessible.

Recommendations

As the natural progression of Lake Erie continues, we look to put new ideas into its future maintenance. A few things that would be beneficial in 2008 would be;

~ We suggest developing a blog web site for each LMD we work for. This web site would be used to communicate effectively with the members, posting treatment maps and allowing interaction with the community in terms of receiving comments and concerns.

~ Surveys in Mid-June for both lakes. This seasons surveys were driven by a need to conduct meetings early in June. It took a long time for the weather to warm up and the sun to break free. We may have missed plants that emerged naturally later in the season. The focus of surveys should be somewhat driven by the weather and biology of the plants and meeting set up accordingly.

~ Many residents on lake Erie had problems with the native submersed pondweeds again this year. Aquatechnex did as well, having difficulty navigating the treatment vessel. Getting nuisance control on some of these pondweeds could be an idea for 2008. It could be affordable if measures were to consist of controlling in and around every dock.

Aquatechnex enjoyed working with Lakes Erie and Campbell in 2007, and appreciates an opportunity to do so in 2008 as well. If you have any questions or comments, feel free to contact; Curtis McMillan, cmcmillan@aquatechnex.com