



AquaTechnex

*"Advancing the Science
of Lake Management"*



**Big Lake LMD
2007 Year End Report**

**Prepared for
Skagit County and Big Lake LMD
Mt. Vernon, WA**

Fall, 2007

Big Lake 2007 Year End Report

Introduction

Big Lake is located 5 miles southeast of Mt. Vernon and about 25 miles south of Bellingham. At 520 acres it is one of the largest freshwater lakes in Skagit County. Big Lake has a mean depth of 14 feet with a maximum depth of 23 feet. The lake systems watershed covers 22 square miles. Big lake is fed by several inflows, the largest, Lake Creek, comes directly from Lake McMurray. Six additional unnamed tributaries are located along the western shore. Big Lake drains to the Skagit River via Nookachamps Creek.

The property owners at Big Lake have long been proactive in the management of this important water resource. In the mid 1990's, the community recognized the impact that an invasive aquatic weed, Brazilian Elodea, was having on the system. They banded together and implemented an Integrated Aquatic Vegetation Management Plan (IAVMP). The community also formed a Lake Management District (LMD) to provide dedicated funding for ongoing operations on the lake.

Aquatechnex has been involved with the community on this project since its conception. We were contracted by the community through Skagit County Public Works to develop the IAVMP. We also were selected to implement major portions of the program over the past number of years. Previously, the lake has been treated with Sonar Aquatic Herbicide to significantly reduce the amount of Brazilian Elodea present in the system, and yearly treatments with Reward Aquatic Herbicide to continue to focus on the problem.

2006 Re-Cap

The 2006 season's efforts were impacted by the County's need to re-issue contracts to address concerns of their Administration. As such, work was delayed to mid summer. A summer survey slightly later in the season than normal was approved and conducted to determine submersed plant populations for 2006. Results from the survey did in fact turn up some problematic pondweed population's lake-wide, with mixed Brazilian Elodea beds. Due to the late nature of the contract approval and the limited budget, Aquatechnex advised against doing a full-scale treatment and retaining those funds for the 2007 season.

One treatment did take place over a few days in August. It was determined that the Fragrant Water Lily populations were starting to impede the north end of the lake quite a bit. Aquatechnex applicators were on site and applied Rodeo with a surfactant to effectively control the northernmost 1/3 of the lake. Viewing the sites in 2007, it was apparent that the lily control efforts were extremely effective.

2007 Treatment Program

2007 started with a survey of the entire lakes littoral regions. This survey took place on May 22nd and 23rd. Points were taken using a Trimble Pro XT blue toothed to a tough book laptop computer. Sample points were acquired using a straight-line method from land to where no plants are recorded. This retrieval method took place at evenly spaced intervals around the entire lake.

Survey results were similar to that of 2006. The primary problem this year seemed to be the abundance of pondweeds in and around

Big Lake 2007 Aquatic Plant Coverage

Legend

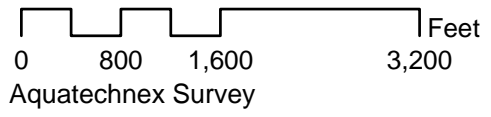
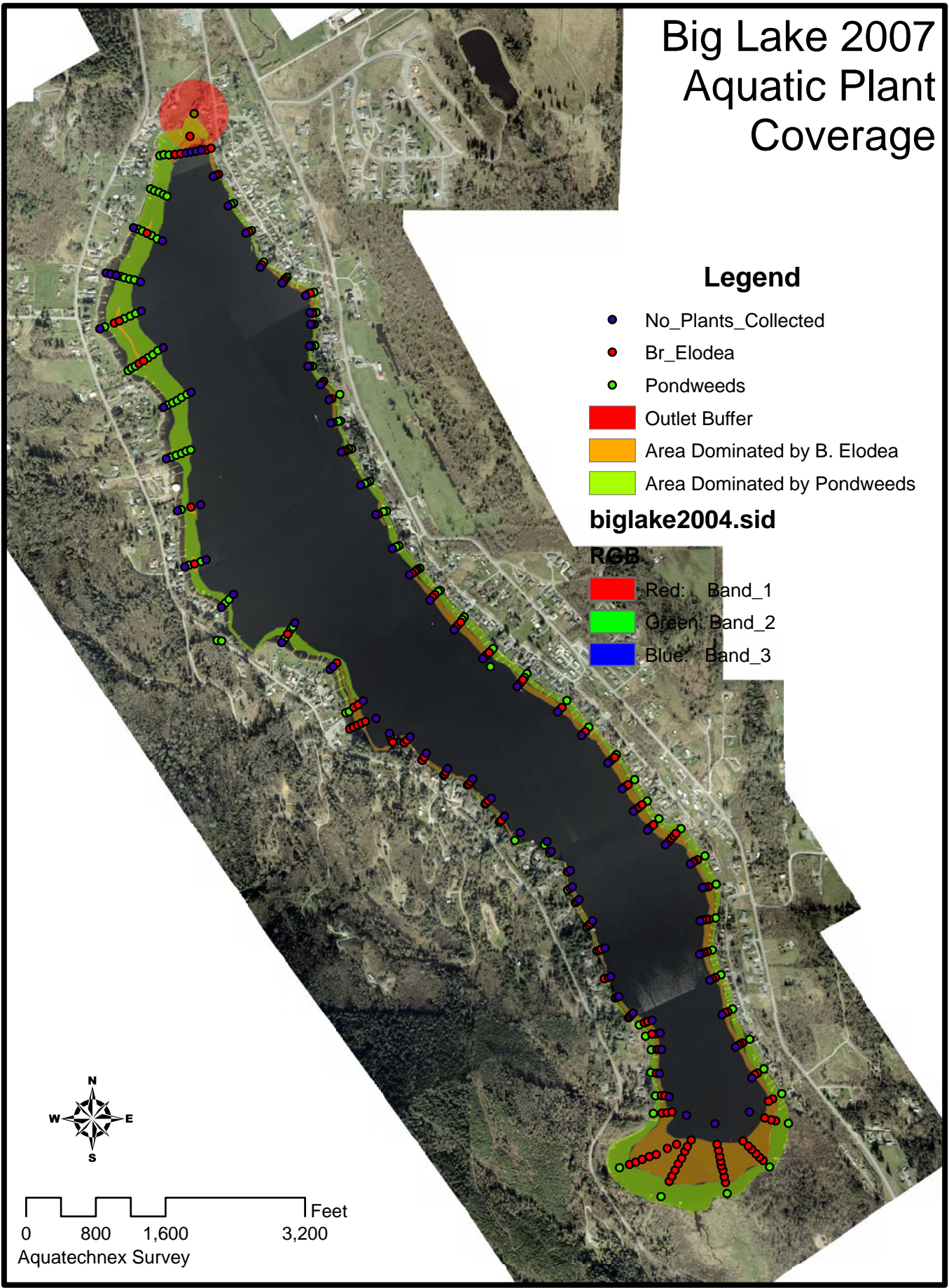
- No_Plants_Collected
- Br_Elodea
- Pondweeds

- Outlet Buffer
- Area Dominated by B. Elodea
- Area Dominated by Pondweeds

biglake2004.sid

RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3



resident's docks and out from shore an avg. of 100 ft. The B. elodea plant beds did not seem to expand at all this year over last. Many sightings were in the same zones, yet the densities were not there. Following the survey, Michael See of Skagit County Public Works organized a meeting between the contractor and the Big Lake Lake Management District (LMD).

On June 11th, Curtis McMillan of Aquatechnex met with Michael See and the Big Lake LMD. The survey was discussed along with budget numbers, 2006 efforts, and plans for 2007. All of the LMD members were primarily focused on 2007 efforts and what could be accomplished with the current budget. The survey was discussed, and it was decided that the primary concern of LMD members was the pondweed situation. Aquatechnex took all of the meeting recommendations and proposed a plan. LMD members urged the contractor to maximize shoreline acres with hopes of covering the entire shoreline with the budget allocation. Aquatechnex designed an application strategy that met the objective of the community with respect to reducing the impacts of these weeds within the constraints of the permit.

The product of choice for both nuisance pondweeds and Brazilian Elodea continues to be Reward Herbicide on Big Lake. Its mode of action as a contact herbicide creates a season long control effect. It is best used in the early stages of summer when all aquatic plant life is aggressively growing. Last year it was mentioned that a Pollution Control Hearing Board meeting was to take place in March to determine the purpose of a fish timing restraint for Diquat. Results from that meeting rendered no action as of yet, and the fish-timing window remained in place for the 2007 season. Aquatechnex agreed to do a two-day treatment starting the week of July 15th when the fish window opens for Reward or Diquat based herbicides. Treatment was conducted using a 17-foot Lund. The Lund was equipped with a

50-gallon spray tank. A 6ft. boom with weighted hoses branched of either side of the tank. Overall, the 2007 treatment was considered a success and community feedback was positive.

Recommendations

When looking to the future of Big Lake, we must first assess current control efforts. 2007 had a large treatment program in place. It is extremely important that a detailed assessment take place next season when the plants begin to once again actively grow. Reward is a contact type herbicide and provides season long maintenance control. It will not generally provide long term systemic control of target vegetation. As Brazilian Elodea is the key noxious weed target, this is the only realistic option for Big Lake.

Survey parameters should be similar in nature to years past, and special attention should once again be paid to the Brazilian Elodea populations in the lake. The Fragrant Water Lily populations may be something to look at next year, as no control efforts were in place this season for them as well.

This season was very well organized. Skagit County Public Works was in constant communications with Aquatechnex. The Big Lake LMD meeting was effective and is suggested for 2008 as well. One thing that may help the contractor is to create a chief contact from the LMD. This contact can help when planning treatment dates and gathering lake resident concerns surrounding treatments. The chief contact can also provide feedback to the contractor regarding treatment efficacy. This can be discussed in more detail in an LMD meeting come spring of 2008.

Conclusion

Big Lake is a water body that must be constantly cared for to sustain its beauty for future generations. In order to do so, the community must remain active in Big Lake re-habilitation efforts. Aquatechnex would like to see the Lake Management District continue, pooling ideas and funds for future maintenance. We appreciate the opportunity to work with Big Lake this season. Big Lake is a beautiful lake now and will be beautiful for years to come thanks to a dedicated group that puts ideas into actions. Thanks for another great season!

Questions or comments about the 2007 program?

Suggestions welcome as well. Please contact;

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