

Gleason Lake – 2010 Aquatic Vegetation Documentation Report
January 11, 2011

Gleason Lake, located in Plymouth, Minnesota (Figure 1) is infested with the exotic aquatic plant species, curly leaf pondweed (*Potamogeton crispus*). *Spring of 2010 began the fourth year of treatment for curly leaf pondweed in Gleason Lake. This is the first year that the Gleason Lake Association (GLIA) was responsible for a majority of the project which included: 1) funding of the spot herbicide treatment of Gleason Lake; 2) applying and cost of the DNR permit to allow the herbicide application; 3) request, acquire and deliver riparian owner signed permission documents for any herbicide treatment that occur within 150 feet of all the shoreline property and 4) monitoring of water temperature to assure appropriate time/day of herbicide application.* The Minnehaha Creek Watershed District (MCWD) continued to assist GLIA with the treatment process by taking responsibility for 1) coordination and cost of pre and post vegetation surveys to determine the effectiveness of the herbicide application on controlling curly leaf pondweed within Gleason Lake; 2) determining the appropriate herbicide treatment areas; 3) identifying and contracting a licensed applicator to conduct the herbicide treatment and 4) field supervision of the herbicide application.

A summary of the tasks completed in 2010 is provided.

1. In February, March, and April of 2010, signatures were collected for all but one lake shore resident, including homeowner association areas, allowing the approval of application of aquatic herbicide, Aquathol K, within 150 feet of shore. These signatures are applicable for the years 2010, 2011, and 2012.
2. The authorized signatures, the application, and a check from GLIA for \$750.00 were submitted to the Minnesota DNR to obtain a permit for the application of the herbicide Aquathol K to allow the control of curly leaf pondweed within Gleason Lake on April 2nd, 2010. The dimensions of the proposed treatment area and the applicator were yet to be determined and were sent later as an amendment to the permit.
3. GLIA monitored the water temperatures at four locations in Gleason Lake on five days beginning on April 5th, 2010 through April 21st, 2010. Temperatures ranged from 52 degrees Fahrenheit to 61 degrees Fahrenheit. The optimal and most effective temperature for herbicide application should be conducted when water temperatures are between 50 and 60 degrees Fahrenheit.
4. The MCWD Board approved “Gleason Lake Aquatic Vegetation Survey” for 2010 to be contracted out to Blue Water Science on April 8, 2010. The survey will include a pre-treatment aquatic vegetation survey during April 2010, and post treatment aquatic vegetation survey in June and August of 2010.
5. Steve McComas from Blue Water Science conducted the pre-aquatic vegetation survey for Gleason Lake on April 16th, 2010. The survey followed the point intercept method,

which entails pre-determining a grid of evenly spaced sample points, with the grid spacing based on lake size. At each sample point a rake is tossed into the water and each plant species retrieved is given an abundance rating, that ranges from 1 (low) to 5 (visible mat). Curly leaf pondweed was found at 2 of the 31 sample stations in the small north basin and at 27 of the 128 sample stations in the main lake. The estimated amount of area to be treated in Gleason Lake was 26.3 acres (Figure 2).

6. In addition to the point intercept survey conducted, stem density of curly leaf pondweed were conducted at 10 sites in Gleason Lake. A rule of thumb density rating system used by Blue Water Science for curly leaf pondweed classifies stems less than 100/m² as light growth, stems ranging from 100-280/m² as moderate growth and stems greater than 400/m² as heavy or nuisance level growth. The results of the 2010 pre-treatment stem counts in Gleason Lake showed an average density of 73 stems/m². This is a significant decrease from the 2007 average count of 817 stems/m².
7. Lake Restoration, Inc. was chosen as the licensed applicator to conduct the herbicide treatment in Gleason Lake. Marc Agar with GLIA and Udai Singh with MCWD coordinated with the applicator to acquire the signed contract agreement, bonds and insurance prior to conducting the application of the herbicide.
8. The DNR permit was approved and received on April 20th, 2010. After further review of the vegetation survey, an error in the total amount of acres to be treated was found to be 1.6 acres more than originally planned. The DNR issued an amended agreement increasing the acreage to be treated from 26.3 acres to 27.9 acres on April 21st, 2010.
9. On April 22nd, 2010, MCWD staff met Lake Restoration's applicator on site at Gleason Lake to conduct application of the aquatic pesticide Aquathol-K to control the curly leaf pondweed in the lake. Water temperature readings taken in Gleason Lake on the day of the application indicated the water was between 52 and 63 degrees Fahrenheit.
10. Steve McComas from Blue Water Science conducted the post aquatic vegetation survey for Gleason Lake on June 8th, 2010. The survey followed the point intercept method, which entails pre-determining a grid of evenly spaced sample points, with the grid spacing based on lake size. At each sample point a rake is tossed into the water and each plant species retrieved is given an abundance rating, that ranges from 1 (low) to 5 (visible mat). Curly leaf pondweed was found at 7 of the 31 sample stations in the small north basin and at 5 of the 128 sample stations in the main lake.
11. Gleason Lake Association reported excessive growth of aquatic vegetation. MCWD WQ staff along with staff from Blue Water Science conducted an assessment of the excessive aquatic vegetation growth and provided a report to Gleason Lake Association

and MCWD Board.

12. GLIA hired an aquatic plant harvester to cut and remove excessive aquatic vegetation from Gleason Lake on August 2nd to allow for boat access to and from residents docks into the deeper portions of the lake.
13. MCWD WQ staff evaluated coontail growth in Gleason Lake by tracking the parameter, distance of noticeable plant growth from shoreline out into the main part of the lake, in order to calculate the area of open water. The area with excessive coontail growth was calculated at approximately 79.24 acres and open water was approximately 80.76 acres.
14. Steve McComas from Blue Water Science along with MCWD WQ staff conducted the late summer post aquatic vegetation survey for Gleason Lake on August 25th, 2010. The survey followed the point intercept method, which entails pre-determining a grid of evenly spaced sample points, with the grid spacing based on lake size. At each sample point a rake is tossed into the water and each plant species retrieved is given an abundance rating, that ranges from 1 (low) to 5 (visible mat). Curly leaf pondweed was found at 0 of the 31 sample stations in the small north basin and at 0 of the 128 sample stations in the main lake.