



November 15, 2010

Boone Lake Dam Maintenance District
c/o Mr. Gary Casaly
595 Randolph Street
Canton, MA 02021

Re: 2010 Year End Report for Boone Lake – Exeter, RI

Dear Mr. Casaly:

Boone Lake was surveyed by Aquatic Control Technology, Inc. in August 2009. At that time two non-native and invasive plants were identified in the pond, variable milfoil (*Myriophyllum heterophyllum*) and common reed (*Phragmites australis*). After evaluating management alternatives, the Boone Lake Dam Maintenance District decided to pursue an integrated management program that consisted of herbicide treatment and winter drawdown to target control of the invasive plants.

The 2010 program focused on spot-treating approximately 15 acres around the perimeter of the lake with Reward (active ingredient Diquat) herbicide to control milfoil and a small spot-treatment of less than 0.25 acres with Habitat (active ingredient Imazapyr) to control phragmites. A chronological description of the 2010 aquatic management program at Boone Lake and our management recommendations for 2011 follow below.

2010 Aquatic Management Program Chronology and Description

- ◆ Pre-treatment Plant Inspection5/23/10
- ◆ Received Approved RI Permit to Control Aquatic Nuisance Using Pesticides (#A1017)6/3/10
- ◆ Reward (Diquat) Treatment for milfoil control6/16/10
- ◆ Post-treatment inspection7/6/10
- ◆ Habitat (Imazapyr) treatment for phragmites control9/23/10

Pre-treatment Plant Inspection

On May 23rd a survey was conducted by Aquatic Control Biologist, Erika Haug. Sunny skies and relatively low wind provided for good visual observation. Multiple methods were used to observe plant density and distribution including use of a throw-rake and Aqua-Vu underwater camera and visualization through polarized lenses. The Secchi Disk reading on the day of the survey was 9.5 feet. Varying density milfoil was found around the shoreline perimeter of the lake. Locations of milfoil growth were marked using a GPS unit. Areas were characterized as either having dense or scattered growth. All areas with dense milfoil growth were targeted for treatment.

Milfoil Treatment

On June 16th several shoreline areas totaling approximately 15 acres were treated for the control of milfoil, by ACT Biologist and Rhode Island certified Pesticide applicator, Keith Gazaille and a field technician. On the day of the treatment the weather conditions were sunny and calm. Most of the submersed plant species within the treatment area were not growing to the surface. Prior to treatment, the District notified the residents of the treatment via email posted bright colored warning signs along the roads at access points to the lake. The treatment was conducted from an 18-foot jon boat. Concentrated Reward (Diquat) was first diluted with lake water in a 50 gallon spray tank. The diluted herbicide was then injected throughout the treatment areas using weighted hoses and a calibrated pumping system.

Post-treatment Plant Inspection

On July 6th a post-treatment survey was conducted by Keith Gazaille. No milfoil plants were observed directly within the treatment areas or in other areas where widely scattered growth was observed prior to treatment. A few widely scattered thinleaf pondweed plants were observed in the treatment area. Low growing bottom cover of the macro-algae stonewort, bladderwort and wild celery was observed in many locations.

Phragmites Treatment

On September 23rd, several thousand square feet (<0.25 acres) on the western shoreline were treated to control invasive phragmites growth. One dense patch was found growing on the bank of the lake. The patch was selectively spot-treated using Habitat (Imazapyr) herbicide using a backpack sprayer.

Summary and 2011 Pond Management Recommendations

The 2010 herbicide treatments performed at Boone Lake successfully controlled the targeted milfoil and phragmites growth. Some regrowth of both milfoil and phragmites is anticipated during the 2011 season, and there will be a need for follow-up spot-treatments to maintain control of these invasive plants.

Milfoil:

While some carryover control may be seen in the early summer of 2011, milfoil is likely to return to pre-treatment densities by late summer of 2011 if it is left unmanaged. If a limited winter drawdown is performed during the 2010/2011 winter, milfoil regrowth should be even further reduced. Additional spot-treatment is recommended for the 2011 season. Reward (diquat) herbicide will be the most cost-effective alternative if milfoil regrowth is widespread. However, if the milfoil distribution is significantly reduced, then spot-treatment with a systemic-acting herbicide like 2,4-D or triclopyr may be worth considering.

Phragmites

The Habitat (Imazapyr) herbicide treatment performed in 2010 should provide excellent control of phragmites. Some limited regrowth may occur that could be targeted with follow-up spot-treatment or possibly hand-pulling.

Monitoring:

Early and late season surveys should continue to be part of the management program to help evaluate the efficacy of techniques used and to guide future management activities.

We have enjoyed working with the District this past year and look forward to assisting with future lake management efforts at Boone Lake. Please do not hesitate to contact our office to further discuss recommendations outlined in this report.

Sincerely,

Aquatic Control Technology, Inc.



Marc Bellaud
Senior Biologist