



October 28, 2013

Heart Pond Association
c/o Mr. Mark Schmeizl
52 Westview Avenue
Chelmsford, MA 01824

Re: 2013 Project Completion Report - Aquatic Vegetation Management Program at Heart Pond

Dear Mark:

Under contract to the Heart Pond Association, Aquatic Control Technology performed ongoing nuisance aquatic vegetation management services at Heart Pond in 2013. In keeping with the recommendations outlined in our 2010 Baseline Biological Survey Report and the successful strategies employed in the past, the program consisted of area selective control of non-native plant growth as well as nuisance native growth within high priority/use recreational areas. The specific management tasks performed during the 2013 management season included periodic inspections and a single area selective Reward (Diquat) herbicide treatment for the control of non-native curly-leaf pondweed (*Potamogeton crispus*) and native coontail (*Ceratophyllum demersum*) and waterweed (*Elodea canadensis*) around the beach area.

The following report summarizes the events of the 2013 Aquatic Plant Management Program at Heart Pond.

2013 Management Program Chronology

- Received approved MA DEP *License to Apply Chemicals*..... 4/26/13
- Performed pre-treatment inspection 5/24/13
- Initial Reward herbicide treatment for the control of curly-leaf pondweed, coontail, and waterweed 6/24/13
- Performed post-treatment inspection..... 7/26/13

Pre Treatment Inspection:

- **Date:** May 24, 2013
- **Weather Conditions:** Sunny with light winds.
- **Acres of Target Vegetation Observed:** Approximately 10 acres
- **Curly-leaf Pondweed Growth Description:** Low to moderate density growth (20%-40% bottom cover) along the central northern shoreline. A second low density patch of curl-leaf pondweed was observed growing along the northeast shoreline adjacent to the beach and boat launch areas.
- **Target Native Species Growth Description:** moderate growth (20%-40% cover) of coontail and waterweed were observed throughout the shallow water areas of the northeastern cove near the swimming beach. Plants were still immature as they were only about 1-2 ft. into the water column at the time of the survey.
- **Other Notes:**
 - Good water clarity at the time of the survey – Secchi disk depth recorded at 8.5 ft. indicative of low microscopic algae growth.
 - The distribution of nuisance native plant growth has declined from 2011 – Approximately 15 acres in 2011 to about 7-8 in 2013.
 - Dominant native plant species not targeted for control remained robbins pondweed and floating-leaf waterlilies. Dense areas of waterlily growth were observed along the shallow inlet shorelines to the west and south. Robbins pondweed was scattered in the deeper water areas of the northern and southern shorelines.

- Non-native fanwort remains scattered along the western and southern shorelines of the pond. The plants were low growing and the density was not considered problematic.

Reward Herbicide Treatment:

- **Date:** June 24, 2013
- **Weather Conditions:** sunny, SW wind at approximately 10 mph
- **Herbicide Applied:** Reward (active ingredient: Diquat)
- **Treatment Area:** Approximately 10 acres
- **Target Aquatic Macrophytes:** Curly-leaf pondweed, coontail, and waterweed
- **Treatment Application Methods:** Sub-surface application of diluted herbicide concentrate through trailing weighted hoses from a 12 ft. aluminum spray-boat. Reward was distributed evenly throughout designated treatment areas.
- **Notifications:** Prior to treatment notification was made to the Association and the Chelmsford and Westford Conservation Commissions. Warning signs were posted at all access points to the pond and along the shorelines prior to the treatment.

Post Treatment Inspection:

- **Date(s):** July 26, 2013
- **Curly-leaf Pondweed Growth Description:** No viable curly-leaf pondweed was observed in the pond at the time of the post-treatment inspection.
- **Target Native Species Growth Description:** Excellent coontail and waterweed control was achieved within the designated treatment areas. Low density growth of these two species was observed in other areas of the pond. This scattered low density growth was not problematic and in fact provided good habitat conditions for fish and other aquatic life.
- **General Native Plant Assemblage Conditions:** The dominant native plant assemblage in Heart Pond consisted of low to moderate density growth of stonewort (*Nitella sp.*), waterlilies (*Nuphar variegatum* and *Nymphaea odorata*), tape grass (*Vallisneria sp.*), bladderwort (*Utricularia sp.*), ribbon-leaf pondweed (*Potamogeton epihydrus*) and robbins pondweed (*Potamogeton robbinsii*). This native plant assemblage remains consistent with prior years. We feel that overall the native plant growth conditions provide desirable habitat and poses minimal threat to recreational activities.
- **Fanwort Growth Conditions:** Fanwort growth, although still at non-problematic densities, the distribution of this invasive plant appears to have expanded during the course of the 2012-2013 growing season. The greatest increase in fanwort occurrence was noted along the southern shoreline of the pond within the shallow areas of the southern inlet. Close monitoring of the fanwort growth should be continued, so that active management can be implemented promptly when problematic conditions arise.
- **Other Notes:**
 - Water clarity remained good during the season – The Secchi disk depth recorded during the inspection was 6.25 ft., indicating low-moderate levels of microscopic algae growth. This increased water clarity during the peak growing season may account for the expansion in fanwort distribution.
 - Swimming area remained free of nuisance plant growth throughout the growing season.

2014 Recommendations:

- We believe that in an effort to achieve some level of sustained long-term control that continued management of the curly-leaf pondweed and nuisance levels of native plant growth should be continued in 2014. Regrowth following Reward treatment (contact herbicide) is expected; however, our vegetation monitoring information suggests that the annual treatment program is effecting a reduction in treatment requirements. Often this incremental reduction can reach the point where the annual management effort can be reduced or shifted to a more intermittent basis. The cost of Reward treatment for the control of continued curly-leaf pondweed and the designated areas of native plant control in 2014 would be in the range of \$4,750.

We hope this brief summary report will be of assistance to the Association. It has been a pleasure working with you this past year and we look forward to continuing the successful management program in the future.

Sincerely,

Aquatic Control Technology



Keith Gazaille
Senior Biologist