
ATTACHMENT C

DCR Vegetation Management Timeline – Lake Cochituate

Lake Cochituate AIS Management History

January 12, 2009 update

I. Background/Timeline on DCR actions to control Aquatic Invasive Species

Summer 2002	Three aquatic invasive species (AIS) were discovered in LC South Pond with some small infestations in Middle Pond. While all three species of AIS are of concern, Eurasian Watermilfoil appears to be the most aggressive plant in this setting and is the focus of control efforts. South Pond (246 acres in Natick) Middle Pond (168 acres in Natick and a bit of Wayland) North Pond (196 acres in Framingham, Wayland, and 1.5 acre in Natick)
September 2002	Fragment nets installed between South and Middle Ponds and North Pond
April 2003	NOI filed with Natick con com for multiple techniques to control the AIS: chemical treatment of 50-60 acres, installation of bottom weed barriers, and use of diver hand pulling.
June 2003	OOC issued by Natick (allowed use of herbicides) and appealed by Citizens
July 2003	DCR filed a second NOI in for the physical removal portions of the short-term management plan, including the use of bottom weed barriers, fragment barriers, and diver hand pulling. This Order of Conditions was issued and was not appealed, and the work commenced in August 2003.
September 2003	DEP held a field investigation at LC in response to the appeal.
March 2004	DEP issued a superseding order of Conditions upholding the con com's OOC and allowing the application of herbicides and physical control measures to proceed. This was challenged again and DEP transferred the case to DALA in November 2004.
March 2004	Secretary Roy Herzfelder approved the GEIR describing techniques to control AIS and providing guidance on their implementation.
May 2004	ACT developed a Long Term Vegetation Management Plan for Lake Cochituate including consideration of a full array of potential actions and costs.
March 2005	Pre-hearing at DALA. Magistrate's key issues: 1. Does the lake provide habitat for the boreal turrel snail? 2. If so, will the project have short or long term impacts on it? 3. Does the project comply with 310 CMR 10.53(4)
May 2005	DCR withdrew from the DALA appeals process, recognizing that the original OOC no longer would have been adequate to control the increased growth of the plants. DCR also withdrew the original NOI with the Natick con com.
July 2005	DCR filed a status report with DALA as requested by magistrate, noting the continuing growth of AIS.
October 2005	Invertebrate biologist carried out a survey of snails and found no endangered species and marginal to poor habitat for the listed species.

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Jan/Feb 2006	NOIs submitted to Natick, Framingham and Wayland Con coms (2 NOIs per community, one for herbicides and one for all other techniques)
May 2006	<p>OOO issued by Natick (denies use of herbicide) and appealed by CSPAC (Sandra Brennan)</p> <p>Natick OOC Special Conditions: 1) Quarterly Reports, 2) Add Water Circulators, 3) Pilot water circulators or weevils and report before widespread use</p>
April 2006	Wayland OOC Special Conditions: 1) Herbicide use not permitted w/in 2 yrs of date of issuance, 2) Avoid destroying non-target species
March 2006	Framingham OOC Special Conditions: 1) Herbicides permitted, limited to those outlined in the ACT 2004 Plan and the GEIR, no Endothall, 2) submit a letter prior to use of herbicides, 3) requires Annual Report
November 2006	DEP issued a superseding OOC upholding con com's OOC denying application of herbicides.

II. Summary of work conducted in 2007:

- **SolarBees-** Circulators were installed in October 2006 in Middle and South Pond. Prior to installation, water quality, plant density and sediment pore water quality measurements were collected. Water quality and sediment pore water quality were measured monthly following installation through August 2007.
- **DRAFT RESULTS:** control sites were not significantly different from Solarbee sites for any of the three parameters measured. The effort was deemed ineffective in reducing milfoil, but it should be noted that 1) more time may be needed and 2) both circulators broke down for approx 2.5 months during the winter.
- **Vegetative Survey** (July 2007) conducted by ENSR included Fiske Pond- results summarized below. Overall abundance of the invasive species was higher in 2007 than the average abundance in 2006 (Table 2, ENSR 2007)
- **Hand Harvesting AIS** (June 2007) Lycott- Most of the hand harvesting was at the DCR Swim Beach area in conjunction with the benthic matting project. Areas in North Pond were too advanced and prolific for hand harvesting to be effective.
- **Benthic Matting AIS** (June 2007) Lycott installed 18,000 sq. feet of benthic matting at the beach area. The matting and hand harvesting at the beach area led to a successful swimming season free of plants.

Summary of work conducted in 2008:

- **New Lake Cochituate Working Group Formed** (February 2008) Members of DCR, Wayland SWQC, Conservation Commissions, Town Recreation Planners, and others met and formed a working group ("The Ad Hoc Group") to evaluate the overall AIS situation in the lake and to evaluate future management efforts. The group has met on several occasions since this initial meeting and will continue to do so in the hopes of managing nuisance aquatic vegetation in Lake Cochituate.
- **Benthic Matting and Hand-Harvesting AIS** (May 2008) Lycott Environmental removed the mats in front of the boat launch locations and conducted limited hand-pulling in this area. The mats in the DCR swimming area were removed prior to the start of swim season (Memorial Day Weekend). Follow-up hand pulling was conducted in the swim area, outside the swim buoys, and in front of the kayak rentals during early June. The swim area was cleared of milfoil, however, a substantial growth in front of the boat ramps, kayak rental, and outside the buoys remained throughout the season.
- **Park Serve Day and Misc.** (May, 2008) Volunteers worked with DCR staff to construct benches for the Snake Brook Trail and to remove trash from the trails and lake shore. At least twenty bags of trash were removed from the areas. Additionally, Lakes and Ponds Program staff participated at Lake Cochituate in career week, the Parkfellows Program and worked with a student covering AIS, nutrient loading, SolarBees and more.
- **Henry Wilson Trail** (May 2008) as requested by the Natick Conservation Commission, DCR staff prepared and submitted a NOI for creation of the Henry Wilson Trail. The work included delineation of the wetland in addition to mapping of the wetland and proposed trail.
- **Boat Ramp Monitor Program** (May 2008) We selected a DCR boat ramp monitor who worked at the Cochituate boat launch on Fridays, Saturdays, Sundays, and holidays throughout the entire summer. The monitor took boater surveys, passed out educational materials, and removed plant fragments from boats entering and leaving the water body. The program began Memorial Day Weekend and continued through Labor Day Weekend.
- **SolarBee Study** (June, 2008) A new Tufts University student was selected and the SolarBee study continued beginning in the first week of June and continuing into

October. This second study was similar to the original study except that no additional sediment sampling was conducted because there were no observed differences in sediment chemistry shown from Naomi's work. DCR staff accompanied the Tufts student on several occasions to collect data and assisted as needed for the duration of the project.

- **SolarBees Removed (October, 2008)** DCR was notified by email on October 20th that Solarbee would be removing the two machines from Lake Cochituate because, "At this point, we feel there is nothing left for us to learn based on the results thus far. Our management has decided to terminate the test and our service crews will be picking up the machines sometime later this week." The machines were removed on October 23rd, 2008.
- **Wayland Town Beach** (June 2008) DCR staff met with Town and park officials to discuss the milfoil problem at the Town beach. The growth was so widespread and dense that the beach was closed for public safety. The Town considered various management options which had primarily included hand pulling to re-open the beach. DCR attempted to but was unable to donate diver hours as they were needed at the State facilities. Based primarily on public safety, Wayland has since acquired a license to apply herbicides for maintenance of the beach.
- **Fiske Pond Water Chestnut Harvesting Update** (October, 2008) The 2008 harvesting project at Fiske pond was a complete success with over 225 tons of invasive water chestnut removed from the pond over 40+ acres. It is unfortunate that the funding for this project was cut, as multiple consecutive years of this approach is necessary for long term success. We will continue to search for alternative funding sources to continue with this very important project.
- **Aquatic Vegetation Survey** (August, 2008) ENSR completed the 2008 vegetation survey and presented their findings in a final report, which is attached. Overall, distribution of invasives did not alter significantly, but densities did increase in many infested areas. The most dramatic changes were observed in Fiske Pond due directly to the 2008 harvesting program.

Beginning in 2009, we will expand the survey methodology to include the same monitoring points as used on all of the previous surveys, but we will also add more points and map the actual perimeter of invasive plant beds to more accurately depict the distribution and density of the plants in the big picture. We have found that now

that the milfoil has spread so much, we are losing some accuracy with the methodologies that we have relied on so far. The distribution of plants depicted on the attached maps are not as accurate as they could be, and analysis of the actual point data reveals much more.

- **DCR Partnerships Matching Funds Program** (October/November 2008) DCR announced this program in October, which provides friends groups and other partners with 1:1 or 2:1 match funding for proposed projects in our parks. DCR received two applications associated with Lake Cochituate. Announcements are expected in early December.

The first of the two applications involves the spot-treatment of milfoil in North Pond. This proposed project is the result of the past year's meetings of the Lake Cochituate Ad Hoc group, formed primarily by members of the Wayland Surface Water Quality Committee. If granted, the funding would go towards permitting and treatment of milfoil in North Pond only.

The second application involves the purchase of a Diver Assisted Suction Harvesting (DASH) machine for use within Lake Cochituate. This machine is essentially a boat outfitted with all of the equipment necessary to complete a DASH operation in the lake, including air compressor, hoses, diver air, etc. The application proposes the use of the machine to control milfoil in certain areas of Lake Cochituate where needed. Staff to operate the equipment and associated budget were not specified under the proposal.

Summary of work proposed in 2009:

- **Water-Chestnut Harvesting-** The program may continue in 2009 with an estimated start date in late June if funding can be secured. The level of effort required in 2009 is expected to be similar to this year's efforts.
- **Milfoil Spot-Treatments-** The Ad Hoc group is working diligently in an attempt to secure permitting for the treatment of milfoil in North Pond with herbicides. Additionally, DCR may consider filing a Notice of Intent to manage the State beach and boat ramp in middle pond with the use of herbicides. Through the summer of 2008, we had hired a contractor annually to conduct diver hand-pulling and benthic matting of milfoil in front of the DCR beach, boat ramp, and kayak rental facility. We had a moderate level of control at the beach, but were not so successful in front of the

kayak facility or boat launch. The milfoil has become so dense that hand-pulling is no longer an option at those areas. Additionally, depths make placement of the barriers extremely difficult. Last, the mats have to be removed early in the season to accommodate public use of the facility. As such, the milfoil simply re-grows in the area as if nothing had been done.

This work has come at a substantial cost to the Commonwealth with very little net result. We have now exhausted all feasible options for milfoil management at our facilities and as mentioned, may be applying to conduct an herbicide spot treatment in May, 2009. The total acreage is less than five and will be limited to those three specific areas only. Solicitations have been sent out to potential contractors to assist with the permitting and to conduct the actual treatment if approved by DEP and the Commission.

- **DASH Harvesting-** DCR will work with the lake groups and Conservation Commission to develop a plan and secure permitting for diver assisted suction harvesting (DASH) if the funding is approved for this project. It is likely that a “test” area will be delineated to assess the level of control that this machine can provide in 2009. Staff to operate this equipment has not been identified yet, but will be part of the process.