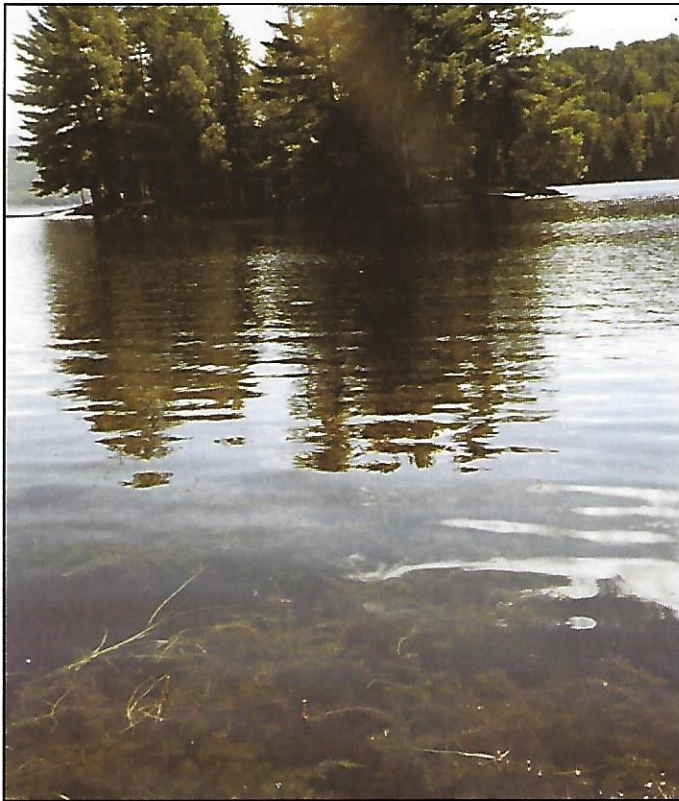


Chateaugay Lake Milfoil Control

Progress Report: 2007 - 2010



Taking Stock

Three years ago, an ambitious program was launched to control Eurasian water milfoil in Chateaugay Lake. Milfoil first appeared about forty years ago near the public boat launch. Since then, this harmful and invasive aquatic plant has been spreading along the shoreline. By the mid-2000s, milfoil had reached problem levels in the Narrows and other spots—clogging boat motors and degrading water quality.

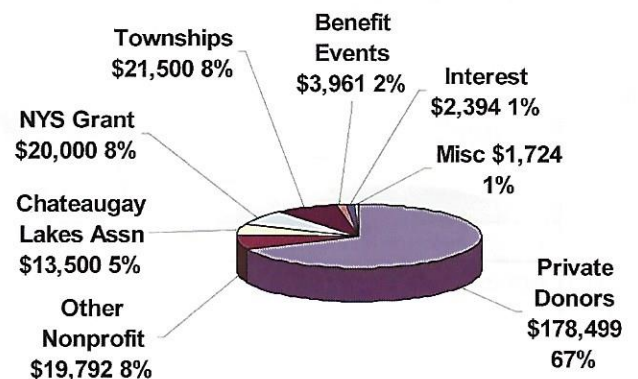
The Chateaugay Lake Foundation was formed in 2007 to raise money for a milfoil control program. A three-year time frame was set for a fundraising campaign and the start of control activities, with results expected to guide future planning.

This report summarizes the progress that has been made and looks at what remains to be done. Gains have been made, thanks in large part to the support of Chateaugay Lake shore owners. However, it is clear that much work still lies ahead.

Fundraising Total: \$261,370

The Foundation's three-year fundraising campaign has raised over \$236,000 for milfoil control. An additional \$25,000 has been pledged for future years. This brings the total contributions and commitments to over \$261,000.

The largest share of support has come from private donors—primarily shore owners and local businesses. The Chateaugay Lakes Association and the Chateaugay Lakes Arts Association have also made major contributions. New York State and the three surrounding towns of Belmont, Dannemora and Ellenburg have provided much needed grant support. Income from benefit events, interest income and proceeds of raffles and book sales round out the fundraising picture.



Spending Total: \$207,798

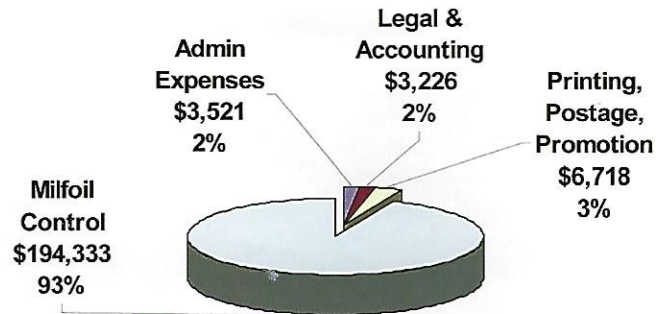
Project expenditures, including start-up costs, total about \$208,000 at the end of three years. Most of this amount (\$194,333 or 93%) has gone directly for milfoil control activities. The major task has involved installing underwater mats to smother milfoil beds, combined with hand-harvesting. This is labor intensive and physically demanding work that requires certified SCUBA divers.

The Foundation has relied on two contractors to perform these services—the Adirondack Watershed Institute (AWI) of Paul Smiths College and the firm of Aquatic Invasive Management (AIM) of Lake Placid. Both are regional leaders in controlling milfoil and other invasive aquatic plants. About \$164,000 has been spent on milfoil control work and related surveys and scientific monitoring performed under contract.

Other milfoil control expenses have included the materials for making the underwater mats that are installed by the dive crew. Almost 300 of these mats have been assembled with volunteer labor, each measuring 350 square feet. The mats are relocated from year to year to cover more area.

The project has included installing buoys to mark the perimeter of the large milfoil bed in the South Inlet of Upper Chateaugay. This is a containment measure, intended to warn boaters away and reduce fragmenting and spreading the milfoil until it can be treated. The buoy line has cost about \$3,700 for materials, including large "hazard marker" buoys for summer and smaller "anchor marker" buoys for winter. The buoys are installed and changed seasonally by Foundation volunteers.

A modest amount (\$1,877) has been spent for miscellaneous costs, including disposing of the harvested milfoil, which is hauled away to be composted.

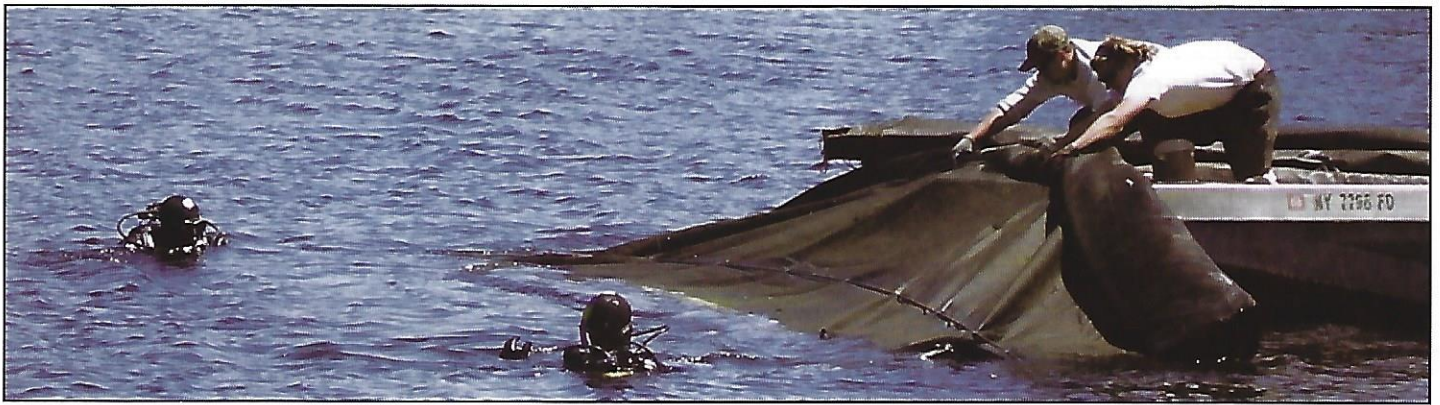


Finances By Year: 2007 - 2010

Shown below is a summary of income and expenses by year. Control activities began in 2008 with work at the DEC boat launch. Activities geared up in 2009 and 2010 with the expansion of mat placement and hand-harvesting under contracts totaling \$72,000 to \$75,000. Dive team costs vary,

depending on the number of divers and 'top-water' support crew. Costs have ranged from \$150 per hour for a five-person crew of three divers and two top-water support crew, to about \$400 per hour for a ten-person crew of eight divers and two top-water support crew. This includes insurance, equipment and management overhead.

MONEY IN					
	2007	2008	2009	2010 (Thru Nov)	Total
Private & Nonprofit Donors	40,705	77,775	61,633	14,053	194,166
Government Grants:					
Towns	--	2,500	5,000	7,000	14,500
State	--	5,000	15,000	--	20,000
Benefit Dinners (after expenses)	--	1,372	1,131	1,458	3,961
Interest Income	--	495	1,213	686	2,394
Misc (raffles, books sales, other)	--	690	799	235	1,724
Subtotal	40,705	87,832	84,776	23,432	236,745
MONEY OUT					
	2007	2008	2009	2010 (Thru Nov)	Total
Administrative Expenses	453	2,142	717	209	3,521
Professional Fees (legal, acctg)	1,590	988	493	155	3,226
Printing, Postage, Promotion	1,529	2,783	1,232	1,175	6,718
Milfoil Control:					
Contract Services	--	16,700	72,500	74,560	163,760
Mat Materials	--	9,464	15,516	--	24,981
Buoys, Chains, Anchors	--	1,975	1,321	419	3,715
Disposal & Misc	--	149	519	1,210	1,877
Subtotal	3,572	34,201	92,298	77,727	207,798
Balance	37,133	53,631	(7,522)	(54,295)	28,947



Twin Challenges: Fundraising and Treatment

Chateaugay Lake is one of 75 Adirondack water bodies that have become infested with Eurasian milfoil and one of the largest. Milfoil invaded Chateaugay Lake relatively early. This is probably due to proximity to the St. Lawrence River, a major source for introduction of non-native species such as Eurasian milfoil. As a result of Chateaugay's size and the length of time since milfoil was first introduced, Chateaugay Lake's milfoil infestation is one of the largest in the region.

Surveys in the 2000s confirmed that the milfoil was spreading at an increasing rate, making it urgent to take action. A management plan was developed with the help of the Adirondack Watershed Institute. Scenarios were presented for different levels of spending. These ranged from "Whole Lake Control"—a plan to reduce the milfoil to a low maintenance level at a cost of \$1.5 million over three years—to different versions of "Phased Control" at a cost of \$225,000 to \$360,000 over an initial three years, but continuing at that level for an indeterminate time. The Chateaugay Lake Foundation set \$500,000 as a three-year goal for a "Phased Control" program that would target high priority sites identified in the plan.

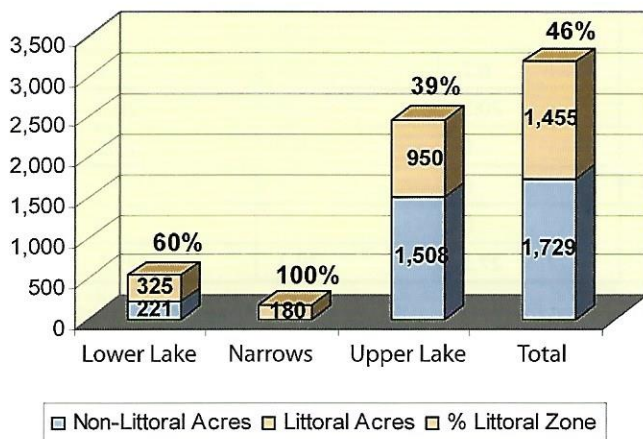
As a result of the recession and cuts in state funding for milfoil control, the Foundation has had to stretch out its time frame for reaching the \$500,000 level of spending. Nevertheless, the \$261,000 raised to date has allowed control activities to get underway and provides a basis for evaluating results.

Progress Toward Control

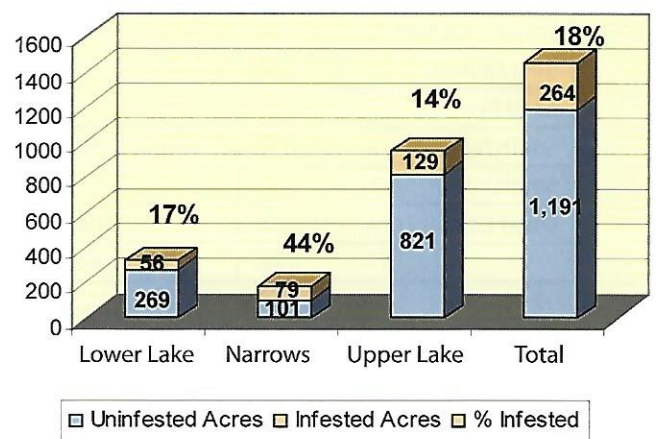
The chart on the left below shows the acres in each part of the Lake and the amount that is in the shoreline "littoral" zone where plants can grow. The Narrows, which is entirely in the littoral zone, is most at risk of infestation, followed by the Lower Lake with 60 percent littoral zone.

The chart on the right shows acres currently infested. The share of infested shoreline in 2010 ranged from 14 percent in the Upper Lake, to 17 percent in the Lower Lake, to 44 percent in the Narrows. Although the Upper Lake has the lowest percentage of infested shoreline it has the most infested acreage because of the large 103-acre infestation in the South Inlet.

ACRES IN LITTORAL (SHORELINE) ZONE



LITTORAL ACRES INFESTED



The amount of infested area that has been treated is shown below for each of the priority areas targeted for treatment. These sites are primary sources for spreading milfoil because of factors such as heavy boat traffic or upstream locations that disperse fragments throughout the system. Treatment consists of a combination of benthic matting and hand-harvesting of a targeted site.

In the first three years of the project, about a fifth of the infested acreage has been treated one or more times. Total program costs have averaged \$69,000 per year, with an average of 21 acres treated annually. Achieving lake-wide control at this pace will be a long-term process. Experience is showing that it typically takes three years of successive treatment to reduce a milfoil infestation to a low maintenance level. So the milfoil infestation that has been developing in Chateaugay Lake over the past 40 years could easily require 15 to 20 years to reduce to minimal levels, assuming a modest but sustained rate of treatment similar to the past three years.

There is little alternative to continuing this treatment strategy if gains are to be preserved and extended. Alternative treatments are either inappropriate for Chateaugay Lake and unlikely to be permitted (such as use of herbicide or a deep drawdown of the water level) or still experimental (biological controls such as insects or grass carp). Nor do the alternative strategies offer significant cost savings. Moreover, some could have harmful side-effects. This leads the Foundation to recommend continuing the existing strategy for another three years, while pursuing ways to expand resources to accelerate the control effort.



Legend
 — Transects ■ Milfoil Bed ▨ Benthic Mats
Treatment Site: Boat Launch to Sand Bar, 2010

ACRES TREATED: 2008 - 2010						
	Acres Infested	Acres Treated 2008	Acres Treated 2009	Acres Treated 2010	Total Acres Treated	Percent Infested Acres Treated
Lower Lake Inlet	11	0	1	0.9	1.9	17%
Boat Launch	7	6.2	6.2	6.4	7	100%
Sand Bar	21	0	20.3	6	20.3	97%
South Narrows	18	0	0	15.9	15.9	88%
South Inlet (Upper Lake)	103	0	0	0	0	0%
Other Littoral Zone	104	0	0	0	0	0%
Total	264	6.2	27.5	29.2	45.1	19%

Note: "Total Acres Treated" is less than sum of annual acres treated because of re-treatment of some areas.



Some of the 17 tons of milfoil removed from the South Narrows

dense milfoil beds extending along the shore on either side. Boats traveling through this area can readily reinfest the treated areas at the Boat Launch and Sand Bar. Treatment included matting the access lanes south of the Boat Launch, combined with hand-harvesting the rest of the site. A ten-person dive team removed 17 tons of milfoil over a two-week period, treating about 15 acres of dense growth and reducing average milfoil density by about 23 percent.

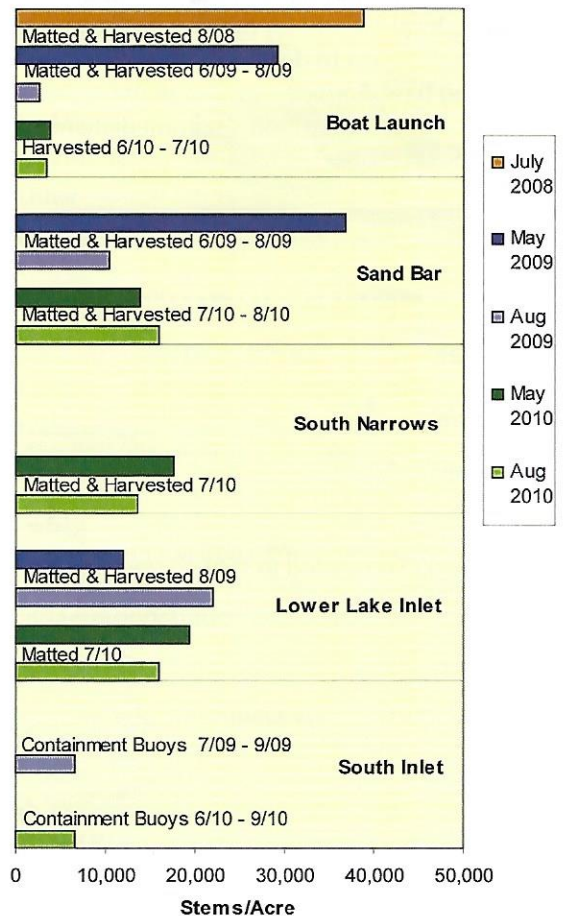
4. **At the Inlet to the Lower Lake**, a large milfoil bed spans across the access to the Narrows. About 2 acres of this 11-acre site have been treated over the past two years with placement of mats and limited hand-harvesting. Results were evident in reduced density by the end of the second season of treatment.
5. **The South Inlet of Upper Chateaugay** is large, but not as dense, as the other priority sites. It is continuing to expand, though slowly, growing from 100 acres in 2006 to 103 acres in 2009. Monitoring in 2010 showed no increase in density from a year earlier. This supports the current containment strategy aimed at discouraging boat traffic until there are sufficient resources for effective treatment.

Treatment Results: Density Declines

Scientific monitoring shows that the approach of matting and hand-harvesting is producing positive results in the treated areas. The chart at right shows average milfoil densities measured in the target sites, noting treatment dates.

1. **At the Boat Launch Site**, where matting and hand-harvesting have been carried out for three years, extremely high milfoil densities have been reduced by more than 90 percent. With strong growing conditions this past summer—many hot sunny days and calm weather—it was possible to maintain, but not further reduce, the lower densities.
2. **The Sand Bar at the Outlet of the Upper Lake** is another high-density site with heavy boat traffic. Treatment began in 2009 with a concentrated effort to install mats and hand-harvest much of the area. Almost 21 tons of milfoil was removed from the 21-acre site. In 2010, treatment was more limited, covering 6 acres and removing about 8 tons of milfoil. Densities rebounded, but remained significantly below pre-treatment levels. This illustrates the need for sustained treatment over several years to achieve control.
3. **The Narrows South of the Boat Launch** was a major focus in 2010. This 39-acre site includes about 18 acres of

MILFOIL DENSITY MEASUREMENTS



Looking Ahead: Positive Momentum

Over the past three years, the Chateaugay Lake community has taken up the challenge to fight a serious threat to the health of the Lake. Left unchecked, Eurasian milfoil chokes out native plants, degrading the habitat for native fish and waterfowl. Large infestations form a dense canopy at the surface. At the end of the growing season, the decomposing plants cause excessive nutrient loading and sediment build-up. This reduces water quality and speeds up the aging process whereby lakes eventually fill in.

Fortunately, the steps that have been taken to control milfoil in Chateaugay Lake are producing positive results. If they are continued, they will help forestall undesirable changes that should be taking thousands of years—not decades—to occur.

The Chateaugay Lake Foundation recommends continuing the current treatment approach for another three years. The focus should continue to be the high priority sites that are major sources of spread. This would require a minimum funding level of about \$75,000 per year, or \$225,000 over three years.

In today's funding climate, the Foundation will continue to look to local sources for most of this basic support. However, the need is clear to develop a broader and more sustainable funding base. Foundations are an untapped source that may help make this transition. An immediate need is to secure funding for a boat launch stewardship program that would

be staffed throughout the summer and help prevent other invasive species from being introduced. This will be a high priority for seeking funding assistance in the near term.

Many shore owners want to know how they can control milfoil in front of their property. The Foundation will be looking for ways to promote self-help, such as training owners in hand-harvesting techniques and mat making, and coordinating cooperative efforts along private shoreline. Public awareness is vital. Simple control measures, like scooping up milfoil that is floating along the shore or removing it from around docks and pilings, need to become standard practice.

Pass the Word: Help Save the Lake

The Chateaugay Lake Foundation has prepared this three-year report for our donors and others in the Chateaugay Lake community and region whose support is critically needed to continue the fight against milfoil. We gratefully acknowledge the many individuals and families, businesses and organizations, and local leaders who have showed they care about the future of the Lake by helping to launch this program.

Thank you for your generosity! We need to continue and expand this base of support. This is truly a fight for the future of Chateaugay Lake. Everyone who cares about the Lake needs to join in so we can win.

Yes. I Want To Help Save Chateaugay Lake.

Name: _____

Mailing Address: _____

Phone: _____ Email: _____

\$75,000 is needed to stay on track for 2011. Amount enclosed: _____

The Chateaugay Lake Foundation is a charitable 501(c)3 not-for-profit corporation and contributions are tax-deductible.

Please make check payable to: Chateaugay Lake Foundation

Please mail to:



CHATEAUGAY LAKE FOUNDATION, INC.
BOX 222, LYON MOUNTAIN, NY 12952
www.chateaugaylakefoundation.org

Printing made possible through the generous support of Fasprint, Malone, NY.