

CANDLEWOOD LAKE AUTHORITY

P.O. BOX 37 • SHERMAN, CONNECTICUT 06784-0037 • (860) 354-6928 • FAX (860) 350-5611

Minutes of Meeting August 13, 2008

Attending:

P. Callahan New Fairfield
R. Stroh New Fairfield
B. Kemble New Fairfield
F. Cioffi Brookfield
S. Murphy Brookfield
G. Hofsess Brookfield
H. Mayer New Milford
C. Reppenhagen Sherman
K. Mersereau Sherman

Absent:

G. Dufel Danbury
H. Berger Sherman
M. Toussaint New Milford
R. Guendelsberger New Milford
S. Conroy Danbury
E. Siergiej Danbury
L. Marsicano, CLA Executive Director

F. Frattini, CLA Administrative Coordinator
M. Howarth, CLA Public Education Director

Recorder M. Howarth

Guests: M. Propper, Danbury
L. Johnson, New Milford
J. Farley, Brookfield
C. Minton, West Haven (Court Reporter for Atty. Bennett)

Patrick Callahan, Chairman, called the regular meeting of the Candlewood Lake Authority to order at 7:37 P.M. at Brookfield Town Hall, Brookfield, CT. Mr. Callahan welcomed the guests.

Secretary's Report: In the absence of the Secretary, Frances Frattini noted that there were no additions, deletions or corrections to the minutes of July 9, 2008. Harold Mayer moved to accept the minutes as presented, seconded by Frank Cioffi and voted with all in favor, minutes have been accepted as written.

Chairman's Report: Mr. Callahan reported that the Executive Committee had met with the Watershed Management Committee and discussed the CLA response to the response of FirstLight to the questions asked by FERC. The response is being drafted and will be sent to the CEO's and legislators for review. Mr. Callahan noted that he had contacted DEP regarding a training class for new Lake Patrol officers for the 2009 season, he had also written to the Towns asking if they had any available space before the CLA commits to rental space. The only response was from Sherman who advised that they have no additional space. Mr. Callahan noted that the CLA had been actively

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seeking space and has decided on an office in downtown New Milford that will have more visibility for the Authority. Hopefully after a one-year lease the CLA will have a better idea about a permanent base.

Mr. Propper asked about the status of the Boat Sticker Program – Mr. Calhan advised that after the summer he would be contacting the Commissioner of DEP, Gina McCarthy, to discuss the differences of the DEP regarding the program. CLUB-A has already given input. Mr. Callahan asked Mr. Johnson about the Bass Fishermen – Mr. Johnson noted an objection to a fee for each lake. Mr. Calhan extended an invitation to Mr. Johnson to speak to him regarding the Program from the Fisherman's point of view. Mr. Callahan noted that reasonable heads will work this out.

Vice Chairman's Report: In the absence of the Vice Chairman, there was no report.

Treasurer's Report: Glenn Hofsess noted that the audit has begun. He gave a quick rundown of the end of the fiscal year noting that there will be some funds left to allocate but advised that there will be added expenses for the present fiscal year that were not in the budget such as personnel and lease expenses. He noted that the largest expense from the reserve last year was for the purchase of the truck.

Executive Director's Report: In the absence of the Executive Director, it was noted that his report for August will be attached to these minutes.

Public Education Director: Mr. Callahan asked that Mr. Howarth's report be attached to these minutes. Mark Howarth summarized his activities for the past month – he has been working on a brochure that outlines what the CLA does. He joined the Buffer Selection Group who went out to analyze the pre-selected properties – the top five will be awarded a garden sign to identify their property as a good example of an eco-friendly shoreline, also he joined Executive Director Larry Marsicano and Deputy Chief Gil Brouillette of the Lake Patrol at a presentation at the Driftwood Point Association. He was asked to report on the weevils thus far – he noted that the students went out twice to examine the locations and found some damage but only one adult – it may have been too early to tell, they will be going out again this week. Mr. Cioffi noted that Twin Lakes is trying something different to control milfoil – he will find out exactly what that is and report back. Mr. Johnson noted that the timing of the drawdown needs to be reexamined, Mr. Callahan advised that the Technical Committee is still meeting on this.

Mr. Callahan asked for public comment – at this time there was none.

Committee Reports:

Public Safety: Rich Stroh, Committee Chair, noted nothing to report.

Watershed Management: Harold Mayer reported that the committee had met with the Executive Committee to draft the response to FERC. He noted that Mr. Marsicano is looking into a new development in Danbury called Savannah Hills (Mr. Howarth noted

that is near Great Plain Road). Mr. Mayer advised that the Dunham Farm development in New Milford, that was denied permits by both Inland Wetland and Zoning and then went to court, has withdrawn the project.

Public Awareness: Kathy Mersereau, Committee Chair noted nothing to report.

Equipment/Facilities: In the absence of the Committee Chair, Bruce Kemble reported that the strobe was replaced on McKee I and that it is having battery problems – the battery will be replaced, also, the broken microphone is to be replaced. McKee II is at MacMarine in Norwalk regarding the repair to the T-Top, Mr. Siergiej is working directly with the manufacturer on this. Steigercraft is having an upgrade to the radio system to bring it up to full lake patrol capability. In ARK II the compressor has been repaired – he noted that the engine on this boat is scheduled to be replaced next year. The bulkhead on Deer Island is being scheduled for repair so that the dock can be returned to its original location.

Old/New Business:

Mr. Callahan on behalf of the CLA offered condolences to the families of the victims of the horrific boating accident on July 18th. He advised that the investigation is still ongoing.

With no further business to come before the Candlewood Lake Authority, Harold Mayer moved to adjourn, seconded by Charlie Reppenhagen. Meeting adjourned at 8:05 P. M.

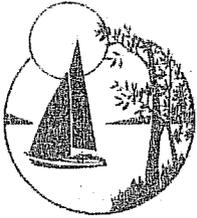
Respectfully submitted,



Mark Toussaint, Secretary

Frances Frattini, Administrative Coordinator

r/b/pc



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Executive Director's Report
August 5, 2008
Larry Marsicano

The following report summarizes activities between July 7, 2008 and August 5, 2008.

Project CLEAR

On July 10th I met with Jonathon Costa who is the Director of School/Program Services for Education Connection. This meeting was in preparation of the transition in Project CLEAR due to the departure of Tom Adams. Several positions at EC were being posted and filled including one that will assume the role of Project CLEAR Program Manager. We have received a copy of all the files EC had for Project CLEAR. We are still awaiting a copy of the final presentation the students gave on June 30. Howie Berger has suggested that we develop a publication, describing the program, with the bulk of the document the PPT presentation the students gave.

On July 17th I met again with Dr. Dora Pinou from WCSU, this time for a tour of the lake. We continued to discuss the proposal for the National Science Foundation that would benefit Project CLEAR and WCSU, as well as Candlewood Lake. Dr. Pinou has had discussions with the NSF who are interested in the proposal. Work on the grant proposal will continue with a draft tentatively ready by sometime in September.

On August 3rd I learned of the death of P.J. Zguzenski, a teacher at Brookfield High School and one of the veteran Project CLEAR teachers. P.J. first began participating in CLEAR in 2004, deeply believed and was committed to the program. He will be missed.

Environmental Review Team Review

We received word from the ERT Executive Director that the proposal we submitted was accepted. The proposal was for a review of the knowledge base on Candlewood Lake as it pertains to local measures to mitigate nutrient (and other pollutant) export to the lake, including New Fairfield Zoning Commission's Waterfront Residential District proposal. We are currently assembling packages of relevant reports, technical papers, etc. for the members of the ERT and will be scheduling a field trip for the members to view watershed conditions in the near future.

Watershed / Land Use Issues

Gary Dufel and I met again with CCA on August 29th to discuss the Egret Property proposal on Great Plain Road in Danbury. We discussed a number of our earlier comments and learned of the modifications to the proposal which helped reduce impact to the lake.

Eurasian Watermilfoil, Weevil Research, Etc.

The Eurasian watermilfoil and the ongoing milfoil research at Candlewood have received considerable attention by the press in recent weeks, including newspapers, radio and television. Attached to the end of this report is a series of articles authored by Alex Messerle on the invasive weed problem in Candlewood published in the New Fairfield/Sherman Citizen News this past month. In the final article, Alex outlined my thoughts on a position going forward on the issue. I am not aware of a formal CLA position other than supporting the biennial deep winter

drawdown and participating in the Technical Committee, which includes the CLA, the CT DEP, the US FWS, and the power company.

The recent minutes from the CLUB*A meeting indicates that there may be a number of CLUB*A members attending our meeting at Bob Guendelsberger's urging. It is important to convey to the public that whole-lake management needs to proceed cautiously so as not to have a detrimental affect on the entire ecosystem. Annual deep drawdowns do have the potential to be more harmful than helpful from an ecological perspective. The CT DEP's environmental professionals do not support an annual deep drawdown based on their experience and the literature search they have done. I have seen much of that literature and I am likewise concerned with an annual program. Likewise the CT DEP has not opposed the weevil experiments. The annual mapping of the lake by FLPR will provide a scientific basis for assessing future drawdowns and other techniques implemented at Candlewood. We have not had the benefit of annual mapping of weeds until only recently.

Students from WCSU continue to monitor the experimental and control sites. Higher weevil population densities are observed at the experimental sites, as well as weevil induced damage to milfoil.

Buffer Recognition Program

On Friday, August 1st we embarked on a new program to recognize those lakefront homeowners that maintain the shoreline in an eco-friendly manner. Our partners in this effort include staff from the Jane Goodall Institute (at WCSU), environmental scientists from the CT DEP and the USDA NRCS, local landscape architects and designers, and FirstLight Power Resources. That afternoon a Buffer Review Team visited by water approximately 20 preselected shoreline landscapes. Approximately 5 others were added along the tour. Sites are being rated based on qualities that include water quality protection, habitat value, aesthetic value, and native vs. nonnative use of plants.

Properties were scored from 1 to 7 with 7 representing the most favorable conditions. Once scores from all members are tabulated, the top five landscapes will be determined by simple average; property owners will be identified and contacted; property owners agreeing to the recognition will receive hand-done signs for the waterfront and the property will be identified on a map available to the public for a self-guided tour.

Members of the Candlewood Lake Shoreline Buffer Review Team, 2008.

Grace Felten	Manager, College and University Programs, Roots & Shoots - The Jane Goodall Institute
Shawn Sweeny	Roots & Shoots / The Jane Goodall Institute Graduate Fellow, College and University Programs – The Jane Goodall Institute
Peter Aarrestad	Supervising Fisheries Biologist, Habitat Conservation and Enhancement Program CT DEP Inland Fisheries Division
David Dembosky	Low Impact Development Program Coordinator, Bureau of Water Management CT DEP Planning and Standards Division
Fernando Rincon	Landscape Architect, Natural Resource Conservation Service of the US Department of Agriculture
Jane Didona	Landscape Architect, Didona Associates
Robin Zitter	Landscape Designer; Sherman IWWC Commissioner
Abigail Adams	Landscape Designer, CCA, LLC
Brian Wood	Land Management Administrator, FirstLight Power Resources

Next year we are planning to select 5 properties each for the months of June, July and August. Members of this year's review team were very supportive of the program and expressed great willingness to participate in the future.

The recent CLUB*A minutes indicated that they will be releasing a white paper on "Buffer Zone Theory." I have discussed this with a number of lake / environmental professionals and scientists who have expressed willingness in reviewing the pending report.

Shoreline Management

On July 22nd a meeting was held at the New Milford Town Hall among the CEOs of the municipalities around Candlewood and FirstLight Power Resources. The meeting was to discuss how all parties will proceed in creating standards and enforcement of those standards on lands below the 440 owned by FLPR. Agreements are being developed between parties. FLPR can not convey enforcement powers over to local jurisdictions but can adopt local standards provided they do not conflict with FERC mandates.

Other

On Sunday, July 13th, Mark Howarth, Deputy Chief Gil Brouillette and I attended and presented at the Annual Meeting of the Driftwood Point Association at the request of Michael Calandrino, President of the Association and also a Danbury Councilman. Our presentation was well received.

On Thursday, July 24th, we participated in the Danbury Chamber of Commerce's Leadership Danbury program by discussing with the participants the ecological, recreational and economic values of Candlewood Lake at Down the Hatch Restaurant.

Combating a Candlewood Lake Crisis

By Alex Messerle

Boats are having difficulty getting off the dock; kids are reluctant to go swimming; and fishermen are losing more lures than ever before. The culprit is this year's unprecedented Eurasian watermilfoil weed infestation of Candlewood Lake. "Eurasian watermilfoil is a significant recreational and environmental issue at Candlewood Lake" said Larry Marsicano of the Candlewood Lake Authority (CLA). "We all understand the recreational problems, but from an environmental perspective, this non-native aquatic invasive plant pushes out the indigenous aquatic plant species, thereby reducing biodiversity," added Marsicano.

Now the CLA is teaming up with scientists at the Connecticut Agricultural Experiment Station (CAES) and Western Connecticut State University (WCSU) and the environmental consulting company, EnviroScience, Inc., on a collaborative effort to explore a process to combat the aquatic weed's grip on the lake. This process is an alternative to expensive, often ineffective, and potentially environmentally harmful methods of watermilfoil control such as chemical herbicides or mechanical harvesters.

On July 1st the research team started testing the reduction of the watermilfoil population on Candlewood Lake through biological control methods, specifically, the milfoil weevil which is native to North America. This type of biological control of watermilfoil has been successfully instituted since 1998 in a 100 lakes in 10 states.

Milfoil weevils, which are the size of a sesame seeds, cannot bite or sting, and are so tiny they are actually difficult to see; difficult for even for a trained expert to locate! The milfoil weevil larvae hollow out the stem and destroy the vascular tissue of the watermilfoil. That causes the plant to lose buoyancy and collapse out of the water column, generally weakening the plant so that it may not return the following season. The milfoil weevil is unique in that it only attacks watermilfoil, leaving native aquatic plants a chance to recover where the watermilfoil is eradicated. In most lakes with a balanced and healthy fishery, weevils are reportedly not a primary food source for fish due to their small size. Given the proper conditions, the female milfoil weevil lays an average 2 eggs a day. Experience has shown that as the watermilfoil infestation reduces, the milfoil weevil population follows that decrease.

Three sites in the Sherman arm of the lake were seeded with almost 10,000 milfoil weevil eggs provided by EnviroScience, Inc. The impact of that action on the watermilfoil will be monitored by the CLA and WCSU through this and next summer. They will be looking for (1) visible, weevil-specific plant damage, (2) increased weevil population size and dispersion out from the initial stocking sites, (3) watermilfoil falling out of the water column (reduction in canopy), producing large "holes" in the beds, and (4) increased native plant diversity.

If the milfoil weevil effectiveness is confirmed, a regional decision on expanding the milfoil weevil program to other parts of Candlewood Lake can be considered. Once initiated, such a program would probably take a number of years to be completely effective on the 5,420 acre Candlewood Lake.

Though there is still work to be done in determining whether the weevils will be a feasible option at Candlewood, the CLA's Marsicano sees other values associated with the project. "Right now professional environmental scientists from the CAES, faculty and students from WCSU, and the CLA are engaged in real research to help understand our issues at Candlewood. That synergy will be vital to future efforts and I am very grateful to CAES, WCSU and EnviroScience for their support," said Marsicano.

If the reader is interested in more information on the milfoil weevil and case studies on where it has been successfully introduced, please go the EnviroScience, Inc. website, www.enviroscienceinc.com.



←Milfoil weevil on milfoil plant

Milfoil Weed Crisis on Candlewood Lake...No Silver Bullet!

By Alex Messerle

So you can't wait for sesame seed-sized milfoil weevils to eat their way through an estimated 10,000,000 pounds of Eurasian milfoil weeds to where you recreate on the Candlewood Lake (see Citizen News, July 18 2008, page 1)?

A knowledgeable source has indicated that Candlewood Lake is too large for even a successful weevil campaign to eradicate the Eurasian milfoil completely. Other control and eradication steps would be required. Also, a milfoil weevil campaign would not be free. An estimate, based on prorating expenses for successful milfoil weevil campaigns at smaller lakes, would suggest a quarter million dollar cost over three to five years for Candlewood Lake. If the weevil test proves positive by the end of the 2009 summer, will municipal leaders then support their town's or community's portion of such an expense?

In this article we will explore what milfoil eradication actions some have taken here and elsewhere. We will use parts of an excellent February 2007 report by Melinda Tersi of the Candlewood Lake Authority to explore Eurasian milfoil control methods besides the deep draw downs...her full report is available on the CLA website, www.candlewoodlakeauthority.org. In a follow-up article we will look at what lake management leaders are considering to contain Eurasian milfoil across the lake over the next few years.

In years past the power company owning the lake had performed biennial deep draw downs (up to 10 feet) of the level of Candlewood Lake during the winter, on the theory that exposing the milfoil beds to freezing and desiccating conditions would kill the exposed plants. This method was developed in conjunction with a technical advisory committee comprised of scientists from the power company, the CT DEP and the CLA. While providing a measure of milfoil weed control in the past, the results of recent draw downs have only been moderately effective. According to a 2007 report by the CT Agricultural Experiment Station, less than 20% of the lake's milfoil beds are exposed during a 10 foot draw down. The recent trend of mild winters is probably hampering the killing of even the exposed milfoil during the winter draw downs. For years there has been talk among leaders for the need of a new "milfoil management plan for Candlewood".

There are many different methods available for eliminating milfoil. They fall into three main categories: chemical, mechanical, and biological. Each method has a mix of benefits and drawbacks. Additionally, the cost and maintenance of treatment programs are a consideration.

Chemical Treatments

Chemical methods of nuisance plant management feature aquatic herbicides. Some will kill the entire milfoil plant, while others kill only the exposed stem of the plant. Depending on the chemical and the level of concentration in the water, restrictions on swimming may need to be established for the days following the application to avoid eye irritation. While these chemicals may provide some relatively fast results, they often must be reapplied during the season in order to keep the concentration of chemicals in the water high enough to discourage the next generation of milfoil taking hold. Because of the nature of these chemicals, a CT DEP permit is required before the use of aquatic

herbicides in any CT waterway, and those applying the treatment must be licensed by state and possibly federal agencies. Additionally, the water body must be continually monitored to ensure that no harmful water conditions exist which might put wildlife or humans at risk. With chemical treatments the dead milfoil falls to the lake bottom and the resultant silt becomes a nutrient base for the next generation of milfoil once the chemical dissipates. The cost per acre of these chemicals can fall well above the \$600-\$1,000 price range.

There are no known current aquatic herbicide applications or CT DEP permitted applications by agencies or communities on Candlewood Lake. Chemicals were used in Fox Hill Lake in Ridgefield, CT, to kill lake weeds, but that practice was discontinued when lake leaders determined that the decaying, dead weeds fostered the growth of large algae blooms in July and August. That being said, there are more and more lakes looking to targeted aquatic herbicides as their answer to the milfoil problem.

Mechanical Treatments

The mechanical methods of milfoil control range from techniques that can be used by homeowners to ones that require professionals equipped with sophisticated machinery. Some methods remove only the stalk of the plant, and others pull the root from the sediment. However, all of these methods may need to be repeated regularly, anywhere from annually to up to several times a season. A failure to remove the milfoil cuttings will result in that cutting sinking to the lake bed and starting a new plant...a step backwards on the issue.

The easiest and most cost-effective technique for removing milfoil is hand-pulling, which can be done by individuals in shallower waters. The cost for this is minimal, requiring only that the person find a method of legally disposing of the pulled plants.

Another technique is cutting or raking, whereby the stalk is cut and removed from the water, leaving the root of the plant in the sediment (much like mowing grass). This can be done by homeowners, who can purchase weed cutters and rakes for anywhere from \$50 to \$200. These tools are designed to be used for controlling a small area. Standing on shore or a dock, one throws the weed cutter and then pulls it through a 4 foot wide path of the weed bed. The cut weeds must be captured for disposal on shore. The reach of the cutting and raking tools are limited, but the technique does provide immediate, but temporary, relief to the area harvested. This technique should grow in popularity because of its low cost, ease of performance, and localized effectiveness. This author recently borrowed a weed cutter from the CLA and in 2 hours cleared the milfoil from a 15 foot arc around his dock. Approximately 200 pounds of wet milfoil were collected with a rake and then brought to the New Fairfield town dump for disposal in the proper area. Steve Merullo, New Fairfield's Park and Recreation Department head, indicated that in the early summer of the past three years they have hired divers with machetes to cut the milfoil weeds at the town beach and marina. This year town lifeguards and staff then removed the 10,000 pounds of loose milfoil from the water and mixed it with the soil off the beach/marina area. The Sherman town beach used a weed cutting process and then attached curtains to the ropes bordering the swim area to help keep floating milfoil from returning to the swim area and starting new plants there.

In deeper waters, a professional with scuba gear is able to take the whole milfoil plant, including roots, out of the water through suction harvesting. A commercial suction harvester estimated that to suction harvest a dense milfoil bed of 500 square feet in 5 to 15 feet of water would cost about \$2,000. An effective control method for modest sized areas, but suction harvesting would not be practical for the 90+ mile shoreline of Candlewood Lake. Suction dredging of the roots, the plant stem and some bottom sediment requires a CT DEP permit, with concurrence of the activity by the town Wetlands Commission. Tim Simpkins, New Fairfield's Wetland's Commission Environmental Enforcement Officer, indicated that this year a local firm successfully suction dredged portions of Ball Pond. That activity removed the invasive weed plants and the thin top coat of bottom sediment in selected areas of Ball Pond.

In addition to the above, mechanical harvesters can cover larger areas and allow a professional to take care of the plant cutting and removal. Buying a mechanical harvester outright can cost anywhere from \$30,000 to \$110,000; so many that use this service prefer to rent the machine and pay the operator. These large cutters, with collection baskets attached to them, can cover anywhere from ½ to 1 acre a day. Mechanical harvesters cut off only the tops of the plants down to 5 feet, leaving the root systems intact beneath the sediment. This means that several passes may be necessary per season in order to obtain acceptable levels of milfoil control. On Saratoga Lake in central N.Y. State, their lake association's mechanical harvester runs 16 weeks a year, removing 2,000,000 pounds of wet milfoil each year from that lake. The Saratoga Lake community spends \$50,000 a year for that harvesting activity, but has recently decided that they need to change their focus from milfoil control (harvesting) to milfoil eradication using aquatic herbicides.

There exist sediment covers that are laid upon the lake bottom over the area where the milfoil plants are growing. A benthic barrier prevents the plants from receiving light, and thus kills the plant. The materials are inexpensive, typically \$200 for a 400 square foot benthic barrier. However, regular maintenance is needed to prevent sediment from accumulating on top of the benthic barrier, which would create a new area for the weeds to grow. There are professionals who will install and maintain benthic barriers; prices can average \$750 or more for the installation of a 1,000 square foot barrier, with maintenance costs of about \$100 per year.

Biological Treatments

Although not widely used at this point, biological control techniques are gaining popularity across the United States because these methods function within the ecosystem. Biological controls are seen as the only sustainable method of continuous treatment that does not involve large applications of chemicals or the costly human labor or equipment of the mechanical treatments.

One biological control is the grass carp (sterile only), which is a fish that eats aquatic plants. This fish will not completely eradicate the milfoil bed, though in several years they can potentially reduce the amount of plant cover by 20% to 40%. For an acre of milfoil, 9 to 25 fish are recommended, with the price of grass carp running anywhere from \$5 to \$20 per fish. The grass carp's daily cycle of eating plants and then having a nitrogen-rich excrement, tends to foster unwanted algae blooms replacing the eaten vegetation. The use of grass carp has been successful in some smaller lakes in

Connecticut and other parts of the country. Grass carp can be seen in ponds on several local golf courses. A DEP permit is required before grass carp can be introduced into a CT waterway.

The other type of biological control is the milfoil weevil, which was discussed in the July 18th Citizen News article in great detail. This small insect prefers to feed on milfoil, and can procreate and survive, even throughout the winter months. While there may be a great deal of promise for the use of the weevil, there is a lack of concrete studies that prove that the weevil can sustain long-term damage to milfoil...hence the experiment now underway on Candlewood Lake through 2009. It is believed that weevil concentrations of 2 weevils per milfoil stem can be effective in reducing the amount of milfoil in a water body. At \$1 per weevil, the application of sufficient weevil quantities is expensive for large acres of milfoil beds like that on Candlewood Lake.

A reasoned conclusion from the above information is that there is no single "silver bullet" in the fight against the Eurasian watermilfoil in Candlewood Lake. There appear to be some techniques that one can apply to a localized situation. Other techniques require significant investment, regulatory support, and a regional, or at least town, commitment for achieving results. The next article will discuss what lake and municipal leaders are doing to develop a milfoil management plan for Candlewood Lake.

Milfoil Weed Crisis on Candlewood Lake...Potential \$200 million Property Value Loss in New Fairfield and Sherman

By Alex Messerle

A 2001 study conducted by Western Connecticut State University and the Candlewood Lake Authority found that property owners along Candlewood Lake then believed that their property value would decrease by about 30% if the lake were no longer suitable for either swimming or boating. The Eurasian milfoil infestation of Candlewood Lake, if left unmanaged, has the potential to bring either or both of those situations to fruition. This week a local real estate agent estimated that the total value of 509 lake front properties in New Fairfield and 196 lake front properties in Sherman is approximately \$700 million. The math for just no swimming along the shoreline leads to the alarming headline. That scenario would also eventually negatively affect lake front property tax assessments and then could reduce annual property tax revenues by a combined \$2 million for both towns. These property value losses and resultant property tax revenue shortfalls are overwhelming when compared to the potential costs to intelligently prevent an unacceptable milfoil situation on Candlewood Lake. As uncomfortable as the milfoil situation is for some, there must be a holistic approach to applying remedies. The protection of the Candlewood Lake ecosystem should always be guaranteed as milfoil controls are applied. Otherwise we have a one step forward, two steps backward situation.

Previous *Citizen News* articles (July 16 and July 30) delineated the scope of Candlewood Lake milfoil infestation and the steps that are being taken and potentially could be taken to combat milfoil on the lake. This article expresses the ideas of lake leaders to combat milfoil and suggests ideas for Candlewood Lake users and communities to help themselves.

The development of the only previously active lake-wide, milfoil control dates back to the 1980's. The power company and owner of the lake back then, CL&P, as members of a Candlewood Lake Technical Committee that included the CLA and CT DEP, agreed to perform biennial winter deep drawdowns (9 feet) of the water level in Candlewood Lake. The timing of the deep drawdown was supposed to provide ample exposure of the milfoil plants to killing winter elements, i.e., below freezing temperatures and desiccation (drying) for several days, without the plants having the benefit of rain or of snow or ice cover providing insulation from the sub-freezing cold. The alternating approach was a comprise to doing the deep drawdown every year and due in large part to concerns from scientist concerned with potential damage to other parts of the lake ecosystem, including littoral zone invertebrates and fish populations that spawn in early spring. The alternating approach had worked fairly well until a recent stretch of years with mild winter weather during the deep drawdowns that apparently compromised the management method. The seriousness of this year's milfoil infestation could be the result of the recent mild winters and that the last deep drawdown occurred as scheduled during the 2006/2007 winter.

Lake-Wide Control Strategy

Thoughts on a lake-wide milfoil control strategy going forward were outlined by the Candlewood Lake Authority's (CLA) Executive Director, Larry Marsicano, and consist of three areas of focus.

First, the current lake owner, First Light Resource Power, should continue the biennial winter deep drawdowns, with assessments of effectiveness and refinements derived from the development of a database on the noxious weed problem. That data base would include information on daily winter weather conditions and lake level, along with the scientific assessment of the milfoil infestation in the following summer season. As a condition of its FERC operating license, First Light Resource Power is providing an annual mapping of Eurasian milfoil weed beds on Candlewood Lake. Collectively, the information should lead to a more thorough understanding of the conditions needed to have a successful deep drawdown of Candlewood Lake. Then considerations to modify the deep drawdown, for example, extend or move the timing of the drawdown, could be scientifically decided. First Light Power Resources is scheduled to provide a deep drawdown this coming winter. It is hoped that, as the power company has in the past, First Light Power Resource is willing to be flexible on this year's and future years' drawdown timing and duration in order to maximize the drawdown's control of milfoil.

Secondly, the CLA is hopeful that the two season milfoil weevil experiments being conducted in several areas of Sherman would provide lake managers with a supplemental biological means that in the long run can be a self-sustaining tool for controlling milfoil. It is unknown how long the recently introduced weevil population would need in order to increase their numbers and spread out to the rest of the lake. The July 16th *Citizen News* article noted an estimated \$250,000 cost for quickly creating the weevil population size in Candlewood Lake necessary to achieve some noticeable control. However, milfoil weevils alone could be a significant, but not nearly a complete, milfoil control strategy.

Finally, there is a benefit to be achieved through a community-wide education program that helps one understand how to minimize the spread of milfoil. For instance, milfoil's proliferation is due in large part to its ability to propagate from cuttings. Driving through milfoil beds with power boats or personal watercraft creates cuttings that can quickly become a new, additional milfoil plant. Eliminating fertilizer applications near the shoreline may help deny the milfoil weed the nutrients that make its growth so vigorous. Along the same lines, during the winter drawdown, removing the dead plants from the lake bed denies future plant generations of a fertile area for growth. This series of *Citizen News* articles on Eurasian milfoil in Candlewood Lake is part of that educational effort.

Mr. Marsicano pointed out that lake-wide milfoil control activities should consider Candlewood's multiple user groups and the fact that aquatic plants are an important part of the lake ecosystem. He believes that the Candlewood Lake Technical Committee is the proper forum to establish and then obtain organizational commitments to a specific lake-wide strategy for controlling Eurasian milfoil. Updates on that strategy development and execution will be provided to *Citizen News* readers.

Mr. Robert Gates, Station Manager for First Light Power Resources (FPR), had these comments on the drawdown process. " FPR currently conducts two types of drawdowns at Candlewood; 1) shallow drawdowns of 3-4 feet below the normal summer minimum water surface elevation so that upland property owners can maintain there

docks and seawalls along the lake as well as to provide room for snowmelt and springtime rains; and 2) deep drawdowns of up to 9 feet below the normal summer minimum water surface elevation to kill nuisance weeds. The two types of drawdowns are typically performed in alternating years, however, high weed density years have caused FPR to perform deep drawdowns on a more frequent basis. It is anticipated that the current weed infestation is such that a deep drawdown will be called for this fall and winter season.”

Homeowner and Community Control Tools

The July 30th *Citizen News* article detailed various techniques that could be used by the individual homeowner or a lakeshore community to control milfoil. These are techniques that can be used to supplement the lake-wide activities described above, especially when those activities do not provide satisfactory results on a local basis.

For all practical purposes the individual homeowner is limited to milfoil control activities such as hand pulling, weed cutters, rakes, and benthic barriers (bottom blankets). More costly activities, including hiring divers with scuba gear to cut, pull, or suction harvest the weeds in deeper waters, may be beyond the financial means of many homeowners.

Beaches, marinas and local community groups have more substantial financial resources and larger scope control needs. They would likely start with hiring divers with scuba gear to cut, pull, or suction harvest weeds, and go on to consider mechanical harvesters and aquatic herbicides. The aquatic herbicide route requires CT DEP permits and application of registered chemicals by specially licensed individuals.

Silver Lining

The milfoil weed infestation is economically and socially threatening to the many that use the lake. However, lake-wide milfoil control techniques applied intelligently to Candlewood Lake should and can balance the mix of controls and the resultant effectiveness with sensitivity to preserving the native ecosystems. The CLA is familiar with the full range of localized milfoil control techniques and can provide a list of service providers and internet sites where cutters and rakes can be purchased. Mr. Marsicano can be contacted by e-mail at claexecdir@earthlink.net.

Finally, Candlewood Lake is not alone in this fight against aquatic invasive plants like milfoil. This is a North American issue. Organizations such as the Connecticut Federation of Lakes and the North American Lake Management Society have milfoil control in focus and provide our lake managers with opportunities to learn best practices from other lakes' experiences.

Andrea O'Conner, the Sherman First Selectman, expressed her views on this situation. “The milfoil problem affects not only lakefront property owners, but all users of the lake. Most problems of this magnitude require the multi-faceted approach that is being implemented here, and I am hopeful that some degree of control can be achieved with the right mix of approaches. I'll be particularly interested in the results of the experimental weevils, since this has the best chance of achieving control while maintaining the ecology of the lake.”

Mark Howarth
Public Awareness
July-August 2008

- CLA Brochure: In an effort to build public awareness about the range of activities the CLA is involved with, I created a brochure that briefly describes the many functions of the Candlewood Lake Authority. The areas covered were Lake Management, Land Management, Legislation, Public Safety and Outreach & Education. This brochure was created to help educate the public about the variety of activities we are involved with and in turn increase our value to them. The brochures can be distributed when we meet with the public and may also be sent out in a mailing.
- Donor Package: As the long-term goal of a new CLA building continues to receive attention, finding potential funding for such a building is also of importance. To help us build public support and hopefully generate donations I have started developing materials that will inform potential donors what it is that we do, the current office situation, our plans for a new building and how that new facility will allow us to better serve them and protect Candlewood Lake.
- Buffer Selection: On Friday, August 1st, we took a group of professionals out on the lake to review and rate approximately 20 waterfront properties for their property's shoreline eco-friendliness. We had representatives ranging from landscape designers to environmental scientists, two members of the Roots & Shoots program of the Jane Goodall Institute and Brian Wood from First Light Power Resources. Each member of that team rated the properties we visited on a scale of 1 to 7 (with 7 being the highest). The scores are being totaled and the owners of the properties with the highest average scores will be offered the opportunity to be recognized with an attractive yard sign, designating their property as one that demonstrates an eco-friendly shoreline. I am working with Shawn Sweeney of the Roots & Shoots program to design the graphics that will be on the yard signs, after which we will begin production on the first signs.
- Driftwood Community Meeting: On the morning of Sunday, July 13, Larry, Gil and myself went to the Driftwood lake community to speak at their meeting. We covered a variety of topics from Patrol and safety issues to current lake issues. I had an opportunity to speak about the topics in our latest electronic newsletter and spoke in depth about our weevil stocking experiment.
- Lake Protection Web Survey: I completed a web review of what other lake organizations, government agencies, communities etc. are recommending to preserve the quality of lakes. I researched the recommendations found in 25 websites and compiled nearly 200 different recommendations. Every recommendation on each site was logged and the top 10 recommendations and their frequency were then put into the July e-newsletter. That information was also used to create a 1 page sheet for print and we also plan to place that information on our website.
- Lunch with Mark Toussaint: Met with Mark to discuss the CLA's marketing efforts and ways in which we can improve upon how we deliver our messages to the public.