

EAST POND NEWS



www.eastpond.org

Summer 2007, Volume X, No. 1

Successful Perch Removal to Continue In 2008

By Melissa Evers

Over the last 4 years, Maine DEP and EPA have been pursuing a Biomanipulation Demonstration Project to reduce the impact of the late summer algae bloom. In this instance, biomanipulation means removing small predatory fish to change the biological dynamics of the lake and improve water clarity. (You can Google 'biomanipulation' for more information). This technique has a well-established record of success on lakes in Europe and the Midwest.

For several years before the decision for removal was made, the University of Maine had been studying the relationship between white perch, their various sources of food (especially zooplankton), and water quality conditions. At the same time, DEP researched the abundance of the spring perch population. These studies were also

conducted on North Pond, as a comparison lake.

After several public meetings and close scrutiny by the Dept. of Fish & Wildlife, DEP was granted permission to remove perch with a goal of removing 75% of the biomass. The removal operation during this past April and May targeted adult fish that were vulnerable to trap netting during their spawning run, removing 9.5 tons of target species.

All fish removed were composted at an organic farm in Sidney. In addition to the removal, 2000 white perch were tagged, with green and pink spaghetti tags, and returned to the lake for further population studies. In addition to the capture of adult perch, a large number ($\pm 57,436$) of young white perch (less than a year old) were captured by open water seining on several occasions (1,400 lbs over 4 days, with 1,340 lbs on one day).

Please see *Perch removal* on page 4

Courtesy Boat Inspector Foils Milfoil Infestation

By Lee Lenfest

East Pond experienced a close call last summer when a Courtesy Boat Inspector (CBI) noticed some plant life trapped between a boat and its trailer before being launched into East Pond. The CBI removed the material at the boat launch and, following procedure, bagged it to be analyzed. It turned out to be invasive milfoil. It would not have taken more than an inch of this plant material to start an infestation. Once established, it is nearly impossible to permanently remove such an infestation, which would gradually choke the whole pond.

A dive was conducted in mid-June of this year to look for changes to the bottom and along the shore in the vicinity of the East Pond Boat Launch. The results are encouraging. There is no sign of variable-leaf milfoil or other non-native invasive plant life. There also seems to be an increase in the number of fresh-water clams, which is a positive sign. The annual dive is part of East Pond Association's effort to keep our beautiful lake healthy.

The CBI Program at the boat launch is East Pond's best defense against the introduction of

Please see *Milfoil* on page 2

President's Message

Dear Fellow East Ponders,

This summer, as I enjoyed evening boat rides with my husband, I was struck by the improvements that have been made to our shorefront. Many of you have taken major steps to buffer and riprap your properties to protect the lake. One of the goals of the original 1998 lake quality retreat was to work to buffer all of the shorefront of East Pond. The improvements in this area are remarkable and gratifying. Please continue to educate and encourage your neighbors and lake friends to plant buffers. The benefits to East Pond are enormous.

This year our much anticipated bio-manipulation project began a successful removal of thousands of perch from our lake. Task Forces and Committees pushed forward in their goal of improving the waters of the lake we all love. Our continuing partnership with Colby College seeks to provide the answers to questions we have all been asking regarding remediation. We have also continued to expand our courtesy boat inspection coverage as we deal with the frightening prospects of milfoil and other invasive plants being carried into our vulnerable lake. Support for this effort from our local communities and our membership has been outstanding. As a result, we have much to be proud of in 2007!

In this newsletter you will read articles explaining the ways your board is working together on these critical areas of concern. The East Pond Association is working diligently to address all aspects of the preservation of East Pond. My sincere gratitude to each of our very dedicated board members. If you are interested in serving on any of our task forces or committees please contact any board member.

We greatly appreciate your support as always. Without each one of you, our work to preserve and protect East Pond would not be possible.

Sincerely,
*Cindy Reese - President
 East Pond Association*

Milfoil from page 1

invasive plants. Prevention is accomplished through inspection of boats and gear going into and coming out of East Pond, and by educating the public about milfoil and other non-native invasive plants. Informative pamphlets are available from the CBI, courtesy of Maine DEP. The State of Maine takes the threat of invasive plants very seriously and has strict laws concerning lake use. Therefore our CBI's can provide a service to the public by informing boat owners of infractions that are subject to very large fines. The most serious infractions include the lack of the Milfoil sticker on a lake user's power craft and carrying any aquatic plant life on their equipment as they move from lake to lake. This includes fishing tackle as well as the boat and trailer.

East Pond Association provides funding to hire CBI's. These paid CBI's cover the boat launch for a total of 12 hours a day on weekends and holidays. The shifts are 8 hours during weekdays between Memorial Day and Labor Day. In addition to paid CBI's, East Pond also has many experienced and new volunteer CBI's from the East Pond community. They are available to supplement the paid CBI's. Maggie Shannon provided training for five new volunteers at the BRCA office in Belgrade Lakes in early July.

Because of the CBI program, our lake is still free of invasive plants that would destroy its beauty. Your continued support through donations of your time and money will help keep East Pond healthy.



*Volunteer
 Courtesy Boat
 Inspectors learn
 the importance of
 removing all plants
 from boats,
 trailers, and gear.*

Colby Study Links Lake Temperature to Algae Bloom

By Jerry Tipper, Chair Colby Study Committee

The research by Colby College scientists and students over the past several years has documented that the primary source of phosphorous impacting the lake is coming from the sediment of East Pond. The studies in 2006 provided a connection between water temperature and the release of the phosphorous from the sediment, that in turn causes the algae bloom. This article is a layman's attempt to explain the science and sequence of events that led to last year's algae bloom.

In 2006, Whitney King and his students placed sensors in East Pond so that temperature could be continuously measured throughout the water column in the deepest part of the lake. The Colby team also measured dissolved oxygen, phosphorous and water clarity. On July 10, 2006, the lake temperature began to stratify, creating a thermocline – i.e. a layer of colder water near the bottom of the lake. The thermocline in turn created a barrier that kept the oxygen in the lake from mixing in the water layer below the thermocline. The remaining oxygen in that layer was quickly used up by the organic matter at the bottom of the lake. Within two weeks the layer below the thermocline became anoxic – i.e. had no oxygen. This anoxic condition then caused the phosphorous to flux/release from the sediment, resulting in very high concentrations of phosphorous in the bottom of the lake. The thermocline held this phosphorous layer down at the bottom of the lake. By early August weather conditions changed to allow the lake to become uniform in temperature. The phosphorous was no longer held in place by the thermocline and became free to mix throughout the water column. As the phosphorous mixed throughout the water column, it worked its way to the surface where it caused the algae bloom. The Colby study basically was able to predict the timing of the algae bloom by observing the temperature dynamics in the

lake several weeks earlier.

Based on the information gathered during the past several years of research, the Colby team developed a laboratory model which can simulate the conditions of East Pond. Out of its work with this model and the new data gathered from East Pond this year, the Colby team hopes to develop a remediation strategy for East Pond that could prevent the phosphorous in the sediment from mixing in the lake.

It is important to note that East Pond actually has two distinct algae events. The first is an occurrence of green algae in June that makes the lake a little murky but does not turn into a full bloom. This green algae usually clears out in early July. The algae blooms that we have seen in late July and early August are caused by blue-green algae.

The Colby studies are providing a connection between the two different algae, water temperature and the fish removal project. The green algae in June causes the water to get murky, which keeps the sunlight from penetrating to the bottom of the lake. The result is a thermocline which I have discussed earlier in this article. Zooplankton eat green algae. If the fish removal is successful, then the zooplankton population will increase, which in turn could result in less green algae. Less green algae in June could increase lake clarity, which could allow the sun to penetrate deeper into the lake, leading to an even temperature through out the water column – i.e. no thermocline. No thermocline could result in higher oxygen content. This keeps the sediment from fluxing phosphorous into the lake which causes the blue-green algae bloom. Zooplankton are not known to eat blue-green algae, but by eating the green algae earlier in the year they can have a direct impact on the blue-green algae concentrations which come later.

This year the Colby team placed two buoys with sensors in East Pond, and the measurements show a very different pattern.

Please see *Colby Study* on page 4

Perch Removal from page 1

Fish Removed:

Target Species	# Removed	Weight (tons)	% of Catch
White Perch	35,000	8.4	86%
Yellow Perch	2,700	0.5	7%
Black Crappie	2,200	0.6	5%
Non-Target (Bass, Trout, Suckers, Pickerel)	0		2%
Totals:	39,900	9.5	100%

Since 39,900 fish is less than half the removal target amount, DEP anticipates a similar removal effort next spring to attain the goal. UMaine, DEP and Colby will continue to monitor fish and water quality over the next several years to better understand food web interactions. This project has attracted the interest of several researchers and, in addition to improving water clarity, DEP expects to gain a better understanding of the dynamic relationship between perch, zooplankton and lake water quality.

For further information contact Dave Halliwell or Melissa Evers at Maine DEP (207)287-3901



Adult perch and black crappie were successfully removed from East Pond during their spawning run in April and May of 2007 in an effort to improve water clarity.

Colby Study from page 3

very different pattern. As of July 18 there was no thermocline. The temperature in the water column has been uniform during the month of July. The measurements on July 18 indicated the lake was beginning to warm up but a defined thermocline had not yet formed. Whitney King commented on July 19 that it is still possible that a thermocline may form in the next two weeks. But even if it does, it would take another two weeks for the lake to go anoxic and at that late stage he believes it is unlikely East Pond would have a severe algae bloom. Dr. King could not confirm why the lake temperature pattern is so different this year but said it is likely due to colder air temperature in July. Also, the fish removal may have had some impact.

This spring Dr. King and the Colby team installed a weather station on East Pond which records weather data in ten minute increments. At the end of the season the Colby group will plug this data into its lake model and will be able to determine the impact of the weather on the lake temperature. Dr. King reported on all of this activity, including new measurements taken on July 25, at the annual meeting on July 28. He also reviewed the information collected by the University of Maine biologists who are measuring phytoplankton concentrations on the lake.

EPA Annual Meeting Held At Birchcrest

The East Pond Association annual meeting was held at Birchcrest on Saturday, July 28, 2007. In spite of the hot, humid weather, the meeting was well attended. Melissa Evers's report on the Biomanipulation project was of special interest, as was Dr. Whitney King's report on the Colby studies pertaining to the lake's blue-green algae problem. Attendees were excited by the news that the lake's water quality continues to be good this year, with no indication of an algae bloom as of the meeting date.

A cookout was held at the close of the meeting. The East Pond Association wishes to thank Camp Manitou for providing the hamburgers and hot dogs, Camp Matoaka for providing the delicious desserts and drinks, and a special thanks to Birchcrest for hosting the meeting and preparing the meal.

The Loons of East Pond

By Cindy Eccher



They are the voice of the night on the lake. The calling and yodeling of loons, a signature sound of summer on East Pond, is one of the joys of this beautiful place. Each year the Maine Audubon Society coordinates a loon census called the Maine Loon Project. Last year East Pond had eleven adults but no chicks. The volunteers plan to count again July 21, 2007. Let's hope there will be chicks to count.

Loons are primarily ocean birds. They spend late fall through early spring on the Atlantic as ghostly gray fishing birds out on the water. Breeding adults will arrive on their accustomed lake territories as soon as they can find enough ice-free water to fly into. They will now be arrayed in their beautiful spangled black and white mating plumage with startling red eyes. Their most important assignment for a while will be to defend their territories against other loons, who will challenge them. This is the reason for the excited vocalizing you hear at night, a perfect time for stealth takeover bids by challengers.

The mated pair will cooperate in defending their turf, often male-to-male and female-to-female. After mating, the pair selects a nest site close enough to the water to escape when threatened. Loons are remarkably heavy birds. Their legs are located far back on their bodies which makes diving for fish easier. However it is impossible to walk on land much less fly from the ground. You may have witnessed a loon's excited run over the surface of the water necessary to get airborne.

Shoreline nests are vulnerable to predation and flooding from the rise of the lake level and large boat wakes. It is important to give nesting loons lots of quiet water and privacy so their eggs do not go unguarded. Twenty-seven days later, usually in early July, one or two chicks will leave the nest within hours of hatching. They will spend the rest of their lives safely on the water, returning to land only six or seven years later, when they find mates and nest.

For the first couple of weeks the little fuzzy gray "corks" will follow the parents closely for food, warmth and protection. You may see young chicks hitching a ride on a parent's back to get warm and dry. Chicks are vulnerable to large fish and snapping turtles from below and eagles from above. Parents are very protective of their chick(s). Please respect a worried loon's display and back off before agitated parents lose a chick in the excitement of trying to chase you away. Raising chicks to self-sufficiency is a challenging test, frequently failed. Fortunately loons are long-lived (up to 30 years) so healthy pairs get a number of tries.

Loons NEED to be protected. What can we do to help? During nesting season we can keep dogs and cats away from breeding sites, and respect their space by staying away. We should never feed predators such as raccoons. Those of us who fish should retrieve fishing lines and lures from the water, and avoid using lead sinkers. Most importantly, we must continually work at safeguarding our water quality in East Pond. Think of yourself as a thoughtful grandparent helping to insure that our loons raise grandbabies who can preserve the future voice of the loon in our landscape.

Join the East Pond Association

Not yet a member? Join Today! Membership is open to all individuals and organizations which share a common commitment to environmentally sound ecosystem management of East Pond. Send your name and address along with a check to:

Wayne Ham, Treasurer, EPA,
638 Garland Rd.
Winslow, ME 04901

Individual: \$15	Family: \$30
Supporting: \$50	Sustaining: \$100

Matching Funds Available for Camp Road Maintenance

By Ed & Edie Cornwall

We were pleased to learn that the cost sharing program will be continued for this year and 2008. This program is now being managed by the Kennebec County Soil and Water Conservation District (KCSWD) rather than through the BRCA. To be eligible for the match the project must meet the requirements of reducing phosphorus runoff into East Pond, and as such can involve improvements to roads, driveways, adding buffer areas, riprapping shorelines, etc. Qualified projects will be approved by the KCSWD.

If you have a problem area that may qualify for a match, you may contact the KCSWD directly, or contact Ed or Edie Cornwall at 207-465-3041 or e-mail ediened@roadrunner.com.

We have surveyed several camp roads with John Blais and identified several projects. Camp road maintenance brochures have been sent out to interested camp road

contacts. If you would like a copy of the camp road maintenance manual contact Ed or Edie.

The most effective way to maintain our camp roads is to perform an annual maintenance program. Grading must be done to maintain proper crown so water runs off the road and does not channel. Berms need to be removed and ditches must be kept clear and should be rock lined or vegetated to prevent erosion. Culverts should be inspected and replaced before complete failure leads to a washout. A road association can manage funds so the annual assessment can be kept to a manageable amount. If you let your road deteriorate to the point where large expenditures are needed, then some landowners may not be able to afford it. To initiate a project contact:

John Blais

9 Green Street - Room 307

Augusta, ME 04330

Phone 207-622-7847 Ext 3.

e-mail john@kcswd.org

Fond Farewell to Dick Seaman, VP East Pond Association

By Cindy Reese

The board regretfully accepted the resignation of Vice-President Dick Seaman from our board. He and his wife Sue sold their seasonal property on East Pond this fall to become year-round residents of Southern Maine. We will miss Dick and Sue's dedication and the *many* talents they have cheerfully shared with this organization for so many years. They continue to be members of our association and we are pleased to maintain our connection with them.

Dick has left a big hole in many

areas of this organization, but a major one is the production and editing of our association newsletters. As we move forward with this issue of the newsletter, I am pleased to introduce our new newsletter editors Susan Hillson and Donna Dombrowski.

I am grateful to both of them for their initiative and enthusiasm in assuming responsibility for this huge task so that we can continue to keep our membership informed and up-to-date. Thanks to both of you!



Dick Seaman, VP East. Pond Association, resigned from the board after selling his home on East Pond. Dick and his wife, Sue, receive a pair of loon bookends in appreciation for their many years of service.

East Pond Preservation a Watershed Wide Issue

Editorial By Donna Dombrowski

Dr. Pete Kallin, newly appointed Executive Director of the BRCA, has quickly targeted the most important issue concerning the health of the Belgrade Lakes, of which East Pond is an integral part. Pete's Watershed Wisdom articles, published in the newspaper Summer in the Belgrades, certainly go to the heart of the matter. Every one of us, whether we own lake-front property or not, needs to understand that ALL citizens living within a lake's watershed affect the lakes they may choose to use for enjoyment.

For those of us who live right on the lakes, it is a double-edged sword. We pay heavily through property costs and taxes for the right to possess that little bit of shore. That in itself may lead some of us to think we can do whatever we want. However, serious responsibility is a part of that purchase. Our burden is that we can never choose to ignore this responsibility in favor of what pleases us. Rather, we must learn to choose only those pleasures that will not harm or destroy the lake environment.

People who live elsewhere in the watershed also pay in a smaller way. Their state taxes pay for their public right to use Maine's lakes. However, they too bear a responsibility to protect those waters and the inhabitants therein. Like shorefront owners, it is their responsibility to know the laws governing lake use and to obey them. They need to cooperate with courtesy boat inspectors.

So, how do we get people to commit to and cooperate with lake stewardship no matter where they live? The good news is that the Belgrade Lakes watershed district practices exemplary stewardship through its many lake associations, conservation corps, and committees headed by extremely dedicated people. A new idea, which was recently implemented, is to have these associations, corps and committees work closely together as a Lakes Trust within the BRCA. This latest effort is the result of strong evidence which shows that water quality in the Belgrade lake chain continues to decline and we need to find new ways to keep our beautiful lakes healthy.

However, even with all these wonderfully dedicated people working together, it is not enough. The need is

for all of us to help, and we can help in one very important way – outreach. Outreach is stewardship through sharing what you know with those who don't know or don't understand. Outreach is being a model for others to follow. Outreach is teaching our young people to respect the environment and to care about even the tiniest creatures within an ecosystem. Outreach is volunteering even just one hour a day, or a week, or a month. No effort is too small.

As Pete said in his article on Mother Nature's Watershed, "the answer is to mimic Mother Nature's system as much as possible." With Mother Nature as our model, we can create buffers, we can stop erosion on camp roads, we can prohibit non-native plants and fish from invading and choking off our native species, and we can stop chemicals that pollute. The final result is that we can teach others to do the same. Contact your lake association, the conservation corps, or BRCA and ask how you can help. You'll be surprised at what you can do.

Introducing New EPA Newsletter Editors

Donna Dombrowski is a retired 40-year veteran elementary teacher of grades 4 – 6, with degrees in english and education. She stays in touch with teaching by tutoring children in MSAD 54 during the school year. She loves to write and dreams of being a published author of children's books. She also has a strong passion and concern for the environment. For Donna and her husband Ron, building a home on East Pond has fulfilled a life-long dream.

Susan Hillson recently retired from Oracle Corporation in Nashua, NH, where she was the Senior Director of Engineering, leading a team of engineers building database software. She is the co-author of three technical books, and a certified Master Gardener. She first came to East Pond in 1974, as a sailing counselor at Camp Lakeridge. She and her husband Max built their home in 1989. Susan can often be seen kayaking on the lake, working in her gardens, and hiking the trails of the Kennebec Highlands.

EAST POND NEWS

East Pond Association

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The East Pond News is published periodically to provide readers with information about matters of interest to residents and friends who care about East Pond. It is sent free-of-charge to any interested party as a service of the East Pond Association. Comments, suggestions for articles, and letters are welcome and can be addressed to:

Donna Dombrowski

East Pond Association Newsletter

30 Wildlife Lane

Smithfield, ME 04978

Or via email to: ydobmrowski@tds.net

Thank you to Great Works Internet web-hosting service (www.gwi.net) for hosting East Pond Association's website, www.eastpond.org, and to Betsy Tipper for creating the website.

Loon artwork by Kirsten Munson, Audubon Society

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