China's Pride
Keep It Alive

CHINA LAKE ASSOCIATION

Newsletter **Summer 2000**

China Lake Association Receives Conservation Award

The China Lake Association was presented the Congress of Lake Associations' (COLA's) **2000 Lake Conservation Award** this year in recognition "of the exemplary and dedicated service by the members of the China Lake Association in protecting and preserving China Lake." The award ceremony took place at the annual COLA meeting held Saturday, June 24, at the China Lake Conference Center. COLA is the statewide alliance of over 100 lake associations and has worked for over 20 years to preserve and protect the water quality in Maine lakes. COLA's work includes educational projects to assist lake associations and advocating for lake issues at the legislature.

The China Lake Association's recent work involves stabilizing soil erosion from fields, camp roads and drainage ditches in the China Lake watershed as well as doing projects on the lake shore. The Association is in the process of doing a survey of the entire 32 square mile water shed in an effort to assess pollution sites that may be affecting water quality. Lake Association president David Landry thanked the many people involved in working on improving the water quality in China Lake including China municipal officials, the Kennebec Water District, and the voters of China who have consistently supported funding lake-based projects. There are forty-eight million dollars in taxable shore front property on China Lake that generates over six hundred thousand dollars in property taxes for the town. A recent University of Maine study showed a direct link between water quality, shore front property values, and property tax revenue. Several speakers at the COLA conference noted that the towns are beginning to take notice that ke water quality is a revenue issue as well as an environmental issue.

The China Lake Association would like to thank David Landry for his many years of leadership as president, his strong commitment to water quality, and his tireless efforts to keep China Lake alive! It is because of him that the China Lake Association is where it is today.

PRESIDENT'S REPORT

The China Lake Association has had another busy year with the summer off to a great start with respect to water quality and work projects that are lined up. The China Conservation Corps is in full swing under the leadership of Kim Tilton, a graduate of Erskine Academy and student at the University of Maine. This is Kim's fourth year on the Corps so she knows the ropes and is very efficient at getting work done. The Conservation Corps will be doing projects both on and off the lake so you may see the energic students at work. This summer's projects include providing funds for agricultural work, ditch reshaping and stone lining, camp road improvements, tree planting in the lake's buffer strip zone, and shore front rip-rapping. Few lake associations can match the amount of work that is being done here in China and the COLA award given the the China Lake Association in June is evidence of that.

There is still funding for residents wishing to plant trees in the lake buffer strip and we have applied for more camp road money which we hope to receive in 2001. We have spoken to Ed Welch at China Lake Hardware about carrying a "lake friendly" fertilizer for people who feel they need to use something on their lawns. *Lakesaver Lawn Food* is a phosphorus-free fertilizer which will not harm the lake. You can now purchase the product at China Lake Hardware on Lakeview Drive. Please consider this lake-safe alternative next time you decide to fertilize.

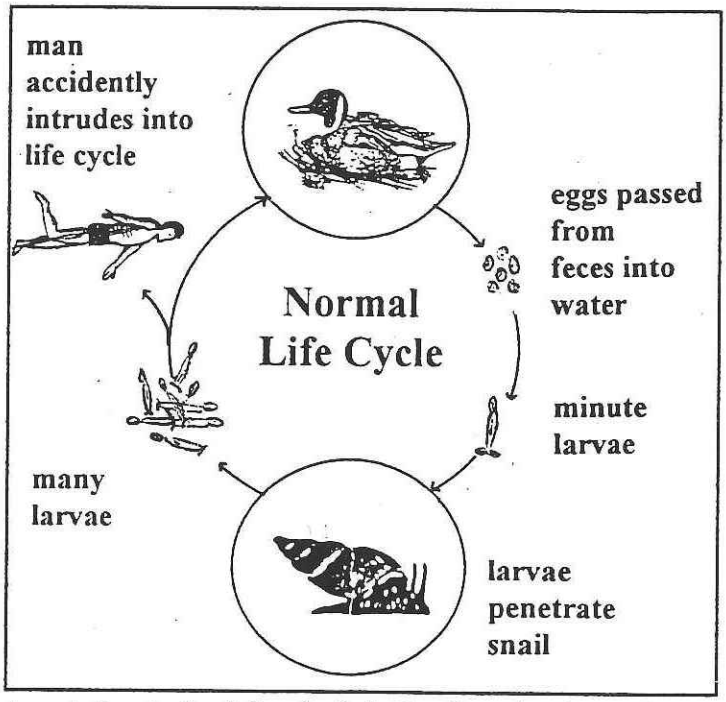
We have had so many benficial projects lined up this year and we are thrilled that so many of you are taking advatage of them. They will all benefit the lake. The work is expensive, however, and does put a drain on the Association's treasury. We need your donations to keep these projects going and to keep our lake alive. Please consider becoming member and/or making a generous donation of $50 - 100. We appreciate your support!

See you at the annual meeting on **Thursday, August 10 at 7 pm at the China Middle School Library!**

David E. Landry, President

Swimmers Itch and Feeding the Ducks

Ducks are a host organism for a type of parasitic worm that causes "swimmer's itch." In brief, the parasite passes from a duck to a snail and then becomes free-swimming, searching for another host. When the worms encounter swimmers, the worms partially penetrate the swimmers skin. Full penetration occurs after the bather emerges from the water. This is associated with a prickling sensation which may be followed by irritation and redness in the form of tiny spots becoming noticeable red bumps of skin up to 1/4 inches across.



There are a few things you can do to avoid swimmer's itch. Don't swim in known areas of infection or areas with large duck concentrations. Briskly towel off immediately after leaving the water. Towelling off right away crushes the parasite before it penetrates completely through the skin. Showering immediately after emerging from the water is also helpful. The host snail tends to release the parasites early in the morning in calm areas of dense vegetation so swimming in the late afternoon in an area with waves may reduce the risk of infection as well.

To help prevent an infestation of swimmer's itch, resist the temptation to feed the ducks! Feeding the ducks from docks and beaches encourages them to visit these sites longer. This increases the potential for an outbreak. The ducks also become tame when fed and lose their instinct to fly south in the fall, facing death from freezing.

(Excerpts taken from China Region Lakes Alliance Spring 2000 Newsletter and the Vermont DEC Spring/Summer 1995 Newsletter "Out of the Blue.")

Milfoil Alert!

Maine is facing a very serious threat to its lakes and ponds. Milfoil is an aggressive non-native plant being inadvertently introduced to many New England lakes. A small piece of the plant dropped off a boat propellor or trailer can grow and multiply very quickly and ultimately choke a lake to death. The varieties causing concern include Eurasian watermilfoil, variable milfoil, water chestnut, and fanwort. (See p. 3 for pictures of Eurasian and variable.) Each has leaves which are completely or mostly submerged with a spiky flower which emerges from the water in mid to late summer. The weed grows in dense mats near the surface of the water and can reach depths of up to 15 feet. It is nearly impossible to eradicate milfoil once it is established in a lake.

New Hampshire and Vermont have been battling milfoil problems in vain for more than two decades now. Eurasian watermilfoil, one of the most aggressive types, has infested 17 percent of Vermont's largest lakes, including Lake Champlain. In New Hampshire, all four types mentioned here have shown up and have infested 41 lakes and ponds, including Lake Winnipesaukee. Both states have spent millions of dollars in prevention and control efforts but it does not seem to be enough. Early detection and education are essential components in the fight against the mennace.

Luckily, Maine does not have a big milfoil problem yet. At the Maine Milfoil Summit in February, professional environmentalists discussed with legislators, fishermen, and other concerned citizens ways to prevent the spread of milfoil in Maine. It is the only state in New England to be free of Eurasian milfoil. Boats coming from neighboring states pose a threat, however. Variable watermilfoil, is growing in at least 6 Maine lakes and has shown up at the south end of Messalonskee Lake in Oakland. This is of great concern for China Lake as well since many boaters go from one lake to another. Plans for the anti-milfoil campaign are taking shape. They include the creation of web sites, public service announcements, and signs at border crossings and boat ramps reminding people to clean off their b[illegible] thoroughly before launching. Propellors, trailers, bilge water, anchors, buckets and any other instrument use[illegible] another lake must be completely free of any plant fragments. The plant fragments should be disposed of on high, dry ground where there is no possibility of them getting washed back into the lake or a nearby stream. Hopefully, with a little effort now, we can protect our lakes and prevent the growth of a major disaster.

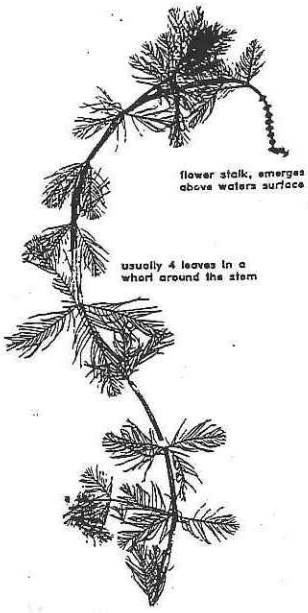
Lake Water Levels

A group of citizens led by China resident Al Althenn has petitioned Maine's Board of Environmental Protection (BEP) to lower water levels in China Lake. In 1997, the group presented its case to the BEP to lower lake levels with the decision at that time being made to lower lake levels by 6 inches in the spring and summer and to change the time for fall draw-down from October to Novermber. In 1997, the China Lake Association took a stand against the significant lowering of summer water levels that had been proposed by the petitioners due to lack of evidence pertaining to water quality. The Association was, however, generally supportive of the decision to lower the peak water level by 6 inches.

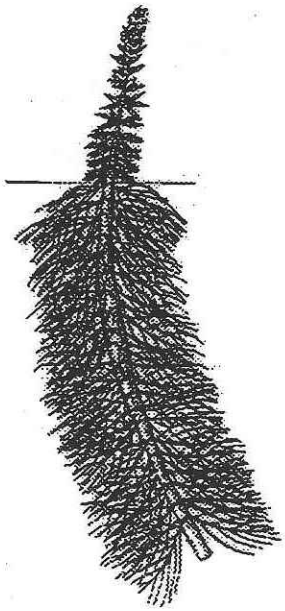
The Board of Directors of the China Lake Association is studying the current request to drop summer water levels several vertical feet below the current levels. The issue is complex and involves the balancing of many factors. While the future BEP decision is based on water quality, fishery, wildlife, wetland, and recreational factors in the lake, the Lake Association has tried to focus on the water quality effects of significantly lowering water levels. There are opposing factors to consider when lowering the lake level. Shoreline erosion may be lessened, but the lake may warm quicker and shallow areas of the lake will have bottom sediments stirred up by waves which may lead to more algae growth.

In June, the China Lake Association Board of Directors heard from Roy Bouchard of the Department of Environmental Protection (DEP). Roy's feeling was that a significant lowering of the lake (1-3 feet) from current levels could be harmful to water quality, but small adjustments to water levels may decrease erosion without worsening water quality There is a general consensus among the directors that in the distant past the water level was allowed to drop quickly during the summer in part because water from the lake was used to power down-stream mills. This practice changed 25-30 years ago when the lake was no longer used for hydro power and since then the average summertime water levels were held more constant but the peak water level has actually been reduced. Because of evaporation, water flow to the outlet stream, and water drawn by the Kennebec Water District, lake levels currently fall 12 - 18 inches over the course of a normal summer. The request before the BEP would lower the initial springtime lake level and perhaps double the summertime drop.

The China Lake Association Board of Directors will continue to study this issue and attempt to reach a consensus position on this matter. We will keep you posted.



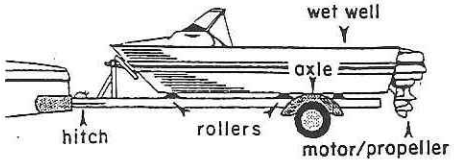
Eurasian Watermilfoil
Submerged feather-like, whorled leaves with reddish flower emerging



Variable Watermilfoil
Submerged densely-packed, whorled leaves with spiky flower emergingby late summer

What you can do to PREVENT WATERMILFOIL from infesting our lakes

- Be sure your boat, trailer, propeller, etc. are free of any plant fragments before launching.
- Dispose of plants on high, dry ground where there is no danger of them washing into any body of water.
- Report any possible occurrences of milfoil to Reb Manthey, the China Region Lakes Alliance Director at 445-5021.



China Lake Water Quality

by Jonathan VanBourg, KWD

Water quality in most of Maine's lakes was surprising in 1999, but the weather was unusual. There was heavy rainfall runoff in late 1998, almost no rain during the spring of '99, and the summer was hot and dry. Because of these conditions most of the lakes in Maine were cleaner and clearer than usual but these conditions also promoted internal recycling of phosphorus and consequently China Lake had one of the worst algae bloom it has had in years.

The Phosphorus Cycle

All plants need four things to grow: sunlight, water, air, and nutrients. The nutrients plants need, even microscopic plants like algae, come mostly from the soil. Nutrients can get into a lake in many ways, from failed septic systems, from over-fertilization of lawns and fields, but mostly from soils washed into the lake from erosion. Most erosion around a lake occurs during a few heavy spring and fall storms. Blue green algae, the type most frequently found in China Lake, needs a lot of the nutrient phosphorus.

Once phosphorus enters the lake it is easily and continuously recycled. Algae uses phosphorus to grow. When mostly one type of algae is growing, there are almost no other species of plant or animal visible. The lake turns a bright green and we have a *bloom.* The algae blocks out all the sunlight, and rapidly uses up all the available phosphorus. Then the algae dies, settles to the lake bottom and begins to rot. The process of decomposition can use up all of the available oxygen at the bottom of the lake and the lake becomes *anoxic,* or lacking oxygen. This is terrible for fish that like cold deep water, like trout and salmon, because they need that oxygen-rich cold, deep water to survive (at least 6 ppm). When the sediment and decomposing algae at the bottom of the lake become anoxic (0 ppm), then the phosphorus that was used by the algae dissolves back into the water and begins to rise by diffusion into the upper layers of the lake. Often the recycling of phosphorus is speeded up when heavy winds cause the lake to *turn over* bringing the phosphorus enriched water from the bottom to the surface. When this happens, the lake blooms all over again.

Sometimes China Lake will bloom 3 or 4 times during the summer and fall. The first bloom in China Lake usually corresponds with the warmest lake temperature and the last bloom usually ends with the first hard freeze. This year there has been a lot of rain and plenty of flushing action and China Lake water quality is still very good. In the west basin, secchi disk readings (a measure of water clarity) are almost 6 meters and there is still 4 ppm of oxygen at the lake bottom. This is excellent. There is no sign of a blue-green algae bloom but often the lake does not bloom until mid-July or August.

What can be done to stop internal recycling? Not much. Alum treatment of the entire lake can bind up the phosphorus and has been successful in many lakes. Alum was tried in Threemile Pond and failed. Oxygenating the lower layer of the lake with compressors is a very expensive option and often stirs up the sediments and makes the internal recycling worse. Flushing out the sediments can help but China Lake has a very slow flushing rate, only 65% each year. The best sure solution to halt internal recycling is to reduce the erosion around the lake so that the phosphorus load coming in is less than the phosphorus flushed out, eventually slowing down the internal recycling process.

What can you do to help? Fix your camp road properly. If it takes a truck load of gravel every year to repair your camp road, then probably that gravel is washing into the lake every year. Plant trees and bushes to hold the soil and help absorb the phosphorus. If you have an unobstructed view of the lake, then erosion has an unobstructed path to the lake too. Don't fertilize lawns with phosphorus fertilizer. Phosphorus-free fertilizer is available at the stores and it is better for your lawn and the lake. If your septic system isn't working properly, then fix it right away. The longer a failing septic system is ignored, the more expensive the repair and the worse it is for the lake. Many camp owners have gray water septic systems. This means that the water from the sink and shower does not run into a septic system. Unfortunately, soap and detergent are often made up mostly of phosphorus. Get out during the early spring storms and look for erosion problems and fix them. If you find a problem but you don't know how to fix it , call the China Region Lakes Alliance (445-5021) and maybe we can help you with design, cost, repair, and/or permits.

Check Out Our Website!

China Lake Association now has a website. Bob O'Connor, one of our Directors, has set up the initial site. For now, what you will find will be informational. Our newsletter, information about the Lake Association, updates on the lake water level issue, information on milfoil and water quality will be available through the web site. Bob says at some point he would also like it to be a forum for discussion about lake-related issues.

The address of the web site is www.chinalakeassociation.org. Check us out!

China Lake Association Annual Meeting

August 10, 2000
China Middle School Library
7:00 pm

Agenda

I. President's Report
II. Election of Directors - terms ending 2003
III. Election of officers - terms ending 2001
IV. Other business
V. Adjourn for refreshments

Fifth Graders Plant Buffer Strip During "Lake Day"

China Middle School students took their annual field trip on China Lake this year on June 12. In addition to visiting the Kennebec Water District (KWD) and touring the lake by boat, the students planted a buffer strip. The fifth graders toured the KWD facility, seeing first hand how China Lake water is filtered and treated for drinking. While on the lake, they learned from water quality experts on board each boat about water clarity and dissolved oxygen content. After taking measurements, comparing, and discussing their results, the students disembarked and were given shovels and black spruce seedlings to plant in an open field on the shore of the west basin of China Lake. By the end of the day, one hundred fifty trees were planted in the field. The trees will absorb nutrients that otherwise would run into the lake.

The China Lake Association would like to thank Jonathan VanBourg, Emil Nicol, and Alan Chamberlain from the KWD as well as Christine Smith, Colby Smith, and our loyal boat drivers/donors the Hicks, the Michauds, the Gagnons, and Judd Thompson. Thank you teachers Ms. Smith, Ms. Maroon, Ms. Douceau and Ms. Lewis for a great day on the lake!

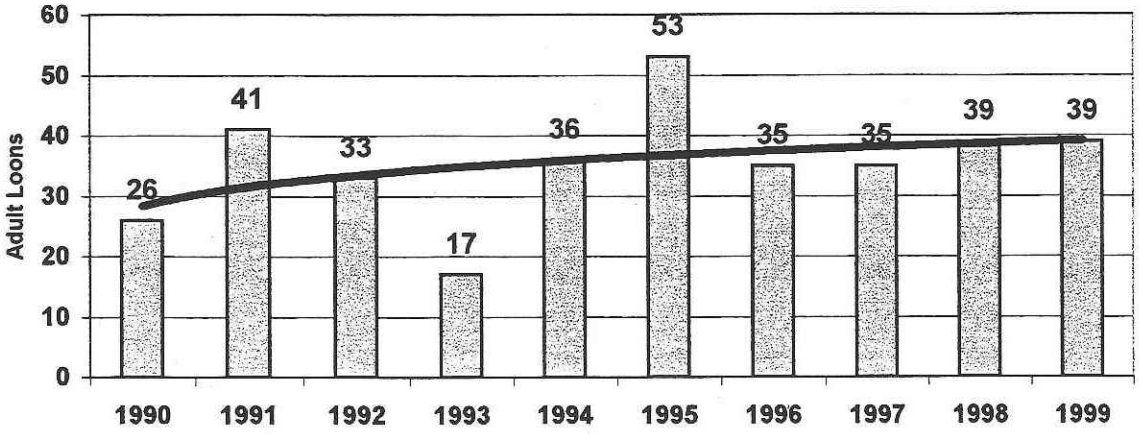
China Lake Loon Count

by Bob O'Connor, Loon Count Coordinator

The Maine Audubon Society conducts an annual July loon count on 264 lakes and ponds in Maine. In 1999, seven local volunteer groups covering seven areas on China Lake counted 39 loons. This was the fourth highest loon count of all the Maine lakes surveyed by the Audubon Society during that count.

This year, before the July 15th count, Lorelei Robie reported that her family saw two adult loons with two baby chicks at their cottage at the south end of the lake. This is great news. In recent years, no loon countrs have reported seeing baby loon chicks.

From our China Lake loon counts over the past 10 years, the loon population has been stable with a slightly increasing trend. We now count about 39 adult loons. Long live the loons!



Please send me information about...

__Buffer Strip Program, advice and assistance with shorefront planting of shrubs to reduce phosphorus runoff.

__Camp Road Program, advice and assist ance regarding erosion prevention on camp roads.

__Shoreline Stabilization, rip-rap stones placed on banks of lake to prevent erosion.

I would like to volunteer to help with: __ Watershed Survey __ Lake Day __ Loon Count

__ I am interested in joining the CLA Board.

I would like to purchase _____ China Lake maps. (Please include $5 for each map purchased.)

Name_____ phone _____

Mark you calendars! Annual Meeting date is August 10

It's time to renew your membership!

Please consider increasing your contribution this year.

MEMBERSHIP FORM
China Lake Association

Please renew my annual membership.
____I am a new member.

Name(s)_____

Address:_____

City, ST, Zip:_____

Phone:_____ Date:_____

__Annual Family Membership: $20

__Friend: $35
__Patron: $50
__Sponsor: $100
__Benefactor: $500
__Other: _____

Please make check payable to **China Lake Association** and mail to P.O. Box 215, China, ME 04926.
Thank you very much for your tax deductible contribution!

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