Loon Preservation Committee NEWSLETTER

P.O. Box 604, Lee's Mill Road, Moultonborough, NH 03254; www.loon.org

SUMMER 2012

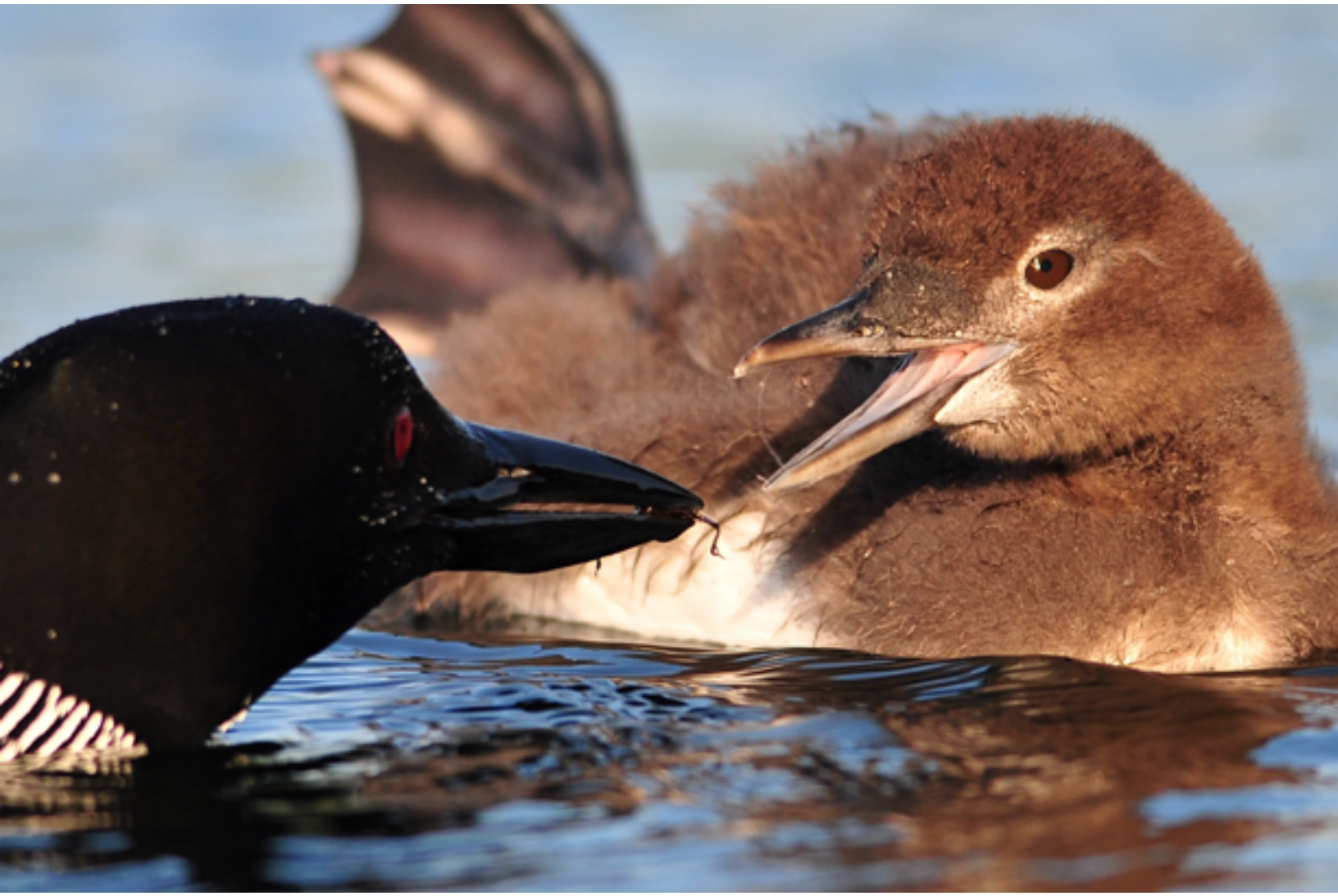

Photo Courtesy of Alexander Constan

The Loon Preservation Committee
183 Lee's Mill Road, P.O. Box 604
Moultonborough, NH 03254
603-476-LOON (5666); *www.loon.org*

The Loon Preservation Committee (LPC) is a non-profit, self-directed and self-funded affiliate of the Audubon Society of New Hampshire (ASNH). Autonomous in membership and fundraising, LPC works to preserve loons and their habitats in New Hampshire through monitoring, research, management and education.

DIRECTOR'S MESSAGE

Loons and Politics

Every few years or so I have a minor brush with politics, and it makes me remember how happy I am to spend most of my time in pursuits in which facts matter and truths are verifiable. As you may have heard by now, our work to convince our Legislature that loons and other wildlife are in need of protection from lead fishing tackle met a less than ideal end. After passing the Senate with overwhelming support, the House Fish and Game and Marine Resources Committee voted 14-2 to refer the bill to interim study, and the full House concurred. Referring a bill to study can be a good-faith effort to further explore complex issues, but it is more often an easy way to ensure the death of a troublesome bill. I could speculate on which case this is, but time will tell soon enough.

So for now we continue to live in a society that bans minute amounts of lead in paint, solder, packaging and gasoline because of its well-known toxic properties, yet encourages us to put tackle that is virtually 100% lead into the hands of our kids and other anglers and throw it directly into our lakes for the purposes of recreation. And we do this despite the fact that it kills loons and other wildlife and that safe, cheap, and effective alternatives exist and are readily available. I am perplexed that this makes perfect sense to some, including many of our Fish & Game Department Commissioners and House Representatives.

This year our loons will likely be challenged once again by extremes of water levels and temperatures due to the increasing variability of our weather, as well as other consequences of human activities. Not the least of these challenges is the shortsightedness of some among our human population, including some of those entrusted with their preservation.

Yet there were heroes among NH Fish & Game staff, commissioners, and legislators of both parties in the Senate and House that stood with us to support these needed protections for our loons and other wildlife. That makes me believe the winds of change may indeed be blowing, and we will continue to work with these individuals to fan that hopeful spark into flame. It is too important to our loons and other wildlife to do otherwise.

This time, cheap, toxic lead fishing tackle won out over loons and other wildlife. But I take some satisfaction in the fact that we impressed both our opponents and supporters with our enthusiasm and tenacity in making our case for the loons. I assured our opponents that we would see them again and be ready to present this same choice to a new Legislature in the fall.

Highlights from the 23rd Annual Meeting of NELSWG

On March 15-16, LPC hosted the 23rd annual meeting of the Northeast Loon Study Working Group, or NELSWG. The two-day NELSWG meetings begin with a roundtable comparison of recent loon monitoring results by state, assessing population and breeding trends and management. This year, former LPC field biologist Vincent Spagnuolo presented his graduate work, tracking down newly colonized and potential loon habitat throughout Massachusetts, and developing a Population Viability Analysis for loons in that state. Anne Kuhn of the US Environmental Protection Agency's research lab in Narragansett, RI, described her development of a regional public-access wildlife and limnology/habitat database, and her co-worker Bette Kreakie outlined plans to model regional loon demographics.

Thursday afternoon presentations included a review of wildlife climate change planning in New Hampshire by Emily Brunkhurst of NH Fish and Game, a summary of University of Maine student Allison Byrd's investigation of climate and loons across North America, and goals for proposed climate change impact research by BioDiversity Research Institute (BRI) in western Maine. David Evers, speaking for BRI, presented intriguing data that showed that mercury burdens may impact the ability of loons to cope with climatic stress. These results show that loons with higher mercury loads experience a greater drop in breeding success in years of drought compared with less contaminated loons. Evers also noted that regional mercury deposition may be increasing from global sources, potentially reversing the improvements seen in the 1990s and early 2000s, the decade after passage of the Clean Air Act.

The massive Deepwater Horizon oil rig accident in the Gulf of Mexico in April 2010 has produced ground-breaking information about loons and other wildlife in the Gulf. Jim Paruk, of BRI, described satellite transmitter data from loons captured along the Louisiana coast following the spill. Paruk was greatly surprised to find that after capture these loons migrated from the Gulf to the mid-Atlantic coast, near Chesapeake Bay, and then northwest across the Great Lakes to breeding lakes as far west as Saskatchewan. One loon returned in the fall by a more direct route across Midwestern states to within a few miles of the original capture location in the Gulf, for a total round trip migration distance of over 5,000 miles! Breeding loons from the western half of Canada apparently have a choice between wintering nearby, on the West coast, or migrating to the Gulf. The circuitous, long-distance loon migration revealed by the Gulf spill transmitter data brings to mind the shared ancestry of loons and marine species like albatrosses, who can fly tens of thousands of miles each year.

On day two of NELSWG, Dr. Jay Mager, of Ohio Northern University, described his research into the yodel calls of male loons and their offspring. Do male loons inherit or learn their yodel

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Photo Courtesy of Alexander Constan

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from their fathers, allowing them to recognize each other and avoid lethal conflict as the young males seek a territory for the first time? Dr. Mager's analysis of yodel characteristics for 28 father-son pairings showed that there were only a few similarities between the yodels of related loons, which appeared in the duration of the call but not the frequency or pitch. Are these similarities enough to permit recognition between related male loons? Could they also use other, more elusive aspects of the yodel call for the same purpose? In addition to these questions, Dr. Mager is hoping to investigate how yodel characteristics depend on loon fitness and breeding success. Jay's collaborator, Dr. Charlie Walcott of the Loon Project at Cornell, described his own finding that yodels tend to be similar among loons from neighboring territories and lakes, suggesting that yodels (and perhaps other loon vocalizations) may fall into dialects within a landscape or population.

Also on Friday, Tufts University researcher Jessica Smith described her work with Dr. Mark Pokras to apply image recognition software to identify individual loons. This technique has the potential to track individual behavior and movement without capture and banding, a huge benefit. It has been used successfully in wildlife species like whale sharks, tigers and zebras. Jessica has had mixed success with loons in training the software to discriminate between photos of different individuals. She is working with software developers and loon photographers to refine a method that will select the most suitable loon features, like bill length, in addition to plumage patterns, on a larger sample of photographed loons.

Informal discussions of loon management and monitoring strategies, and unanswered research questions, are another invaluable part of NELWSG proceedings each year. The meeting concluded with plans to organize a loon research workshop at the August 2012 meetings of the North American Ornithological Congress in Vancouver, Canada. NELSWG sessions also included presentations and discussion on LPC's volunteer outreach and citizen science, water level management, and lead fishing tackle mortality and policy work.

~John Cooley, Jr.

Photo Courtesy of greyszebratrust.org

Photo Courtesy of Alexander Constan

Tufts University researcher Jessica Smith is investigating the feasibility of using image recognition software such as Stripespotter (developed for identifying zebras by their stripe patterns) in identifying individual loons by their plumage patterns.

Hard Work Pays Off: LPC's Loon Recovery Plan

LPC's Loon Recovery Plan (LRP) was created in 2009 in response to a five-year declining trend in the number of surviving loon chicks on New Hampshire's lakes between 2004 and 2008 and significant population declines or mortality incidents on the state's three largest lakes (Winnipesaukee, Squam and Umbagog) in the previous eight years. These declines threatened to undo the hard-won gains that LPC's research, management strategies, and educational efforts had achieved since its creation in 1975.

LPC wrote the Loon Recovery Plan to inform and direct its work to promote a healthy loon population throughout New Hampshire. The plan includes analyses that establish the number of loons New Hampshire's lakes should support; population models to measure the effects of man-made stressors on loon survival and breeding success; an assessment of our ability to help loons cope with these challenges through research, management activities and outreach/education; and strategies to increase loon populations to as close as possible to historical levels of an estimated 450 loon pairs – almost 200 pairs above current levels.

The long-term goals of the Loon Recovery Plan are to recover and maintain a viable population of loons in New Hampshire as a component of a healthy regional population and ecosystem. To achieve these goals it will be necessary to decrease human-caused mortality of adult loons and increase the breeding success of loon pairs. Therefore, LPC created two measurable short-term objectives, to be achieved by the end of Year Three of the Plan (March 31st of 2013):

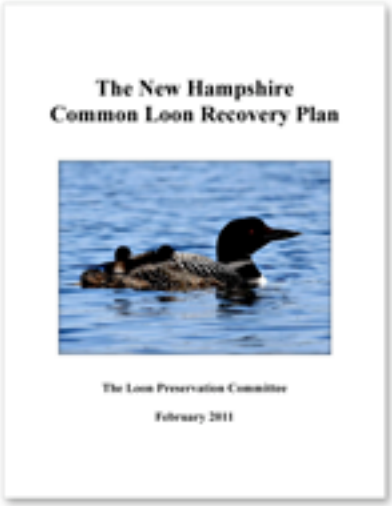
Objective #1: Decrease mortality of adult loons resulting from lead fishing tackle, boat collisions, and other human causes from approximately 8 yearly mortalities (avg 2005-2009) to an average of 5.5 mortalities annually – a 31% decrease in human-caused mortality.

Objective #2: Increase reproductive success of loon pairs from pre-LRP levels of 41 chicks surviving per 100 pairs (avg 2005-2009) to a minimum of 48 chicks surviving to fledge per 100 pairs (the number needed for a stable population) – a 17% increase in reproductive success of pairs.

We identified six key strategies to help us achieve these objectives, to wit:

a. Increase the number of nesting loon pairs protected by floating signs and ropelines from 61 pairs (avg. 2005-2009) to 80 pairs by Year Three of the Recovery Plan.

b. Increase the total number of loon nesting rafts floated in New Hampshire each year from 54 rafts (avg. 2005-2009) to 75 rafts annually by Year Three of the Recovery Plan.



c. Increase the number of LPC exhibits at events, and public presentations made by LPC staff from 58 (avg. 2005-2009) to 75 by Year Three of the Recovery Plan.

d. Increase the awareness of legislators and decision-makers to challenges facing loons in order to encourage informed discussion and actions that protect loons and other wildlife in New Hampshire.

e. Investigate new and increasing challenges to loon survival and reproductive success.

f. Investigate our ability to mitigate these challenges through new management and outreach activities and enhancements to LPC's current management and outreach efforts.

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The goals of the New Hampshire Loon Recovery Plan are to recover and maintain a viable population of loons in New Hampshire as a component of a healthy regional population and ecosystem.

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YEAR TWO LOON RECOVERY PLAN WORK AND RESULTS

We are happy to report that the support of our members and friends allowed LPC to make dramatic gains in our management and outreach in support of New Hampshire's loons in Year Two of the Loon Recovery Plan. In 2011, LPC staff and volunteers protected a record 75 nesting pairs of loons with signs and ropelines, a 23% increase over pre-Loon Recovery Plan numbers. Loon pairs supplied with ropes and signs hatched 70 chicks, 38% of the total number of loon chicks hatched in New Hampshire.

Staff and volunteers also floated 76 rafts on lakes throughout the state to help loons cope with shoreline development, a 41% gain over pre-LRP levels. Loons nesting on those rafts produced 41 chicks, 22% of chicks hatched in the state.

For the first time in its history, LPC exceeded 100 exhibits and presentations in a single year. Staff and volunteers gave talks or presented exhibits 106 times at venues throughout the state, an 83% increase over pre-LRP levels. LPC also greatly expanded its other outreach, including its Facebook page and e-newsletter, to increase its communications with members and friends.

Those of you who regularly receive our e-newsletter will be familiar with LPC's major legislative effort this past year: Our cooperative work with the New Hampshire Lakes Association (NH LAKES) to make legislators aware of, and encourage them to react to, the effects of lead fishing tackle on our loon population. While the outcome of that joint venture can best be described as a draw, LPC and NH LAKES brought much attention to this problem, and legislators were impressed with the enthusiasm and vigor with which we pursued this issue.

LPC also continued and expanded its research into contaminants in loon eggs, and investigated isotope ratios of egg contents to definitively determine that the sources of these contaminants were New Hampshire's freshwater lakes and not ocean sources.

The results of these many efforts were a decrease in the number of human-caused mortalities of loons and an increase in the number of loon chicks hatched in New Hampshire, i.e. ***success*** in our two main objectives outlined above. In 2011, 271 pairs of loons on our lakes hatched a total of 186 chicks; 149 of these were surviving as of mid August and presumed to have fledged. This gain of 20 surviving chicks over 2010 represents a breeding success of 55 surviving chicks per 100 loon pairs – the first time in six years that our loons exceeded the rate of 48 chicks/100 pairs needed to maintain a stable loon population.

The support of our members and friends allowed LPC to make dramatic gains in our management and outreach in support of New Hampshire's loons in Year Two of the Loon Recovery Plan.

At least as important as reproductive success of loons is adult survival. Research by LPC and others has revealed the critical importance of adult loon survival to the continued viability of loon populations; therefore, limiting adult loon mortality remains of paramount importance to LPC. In 2011 LPC staff recovered 13 deceased adult loons. Of these mortalities, four were a result of lead poisoning from ingested lead fishing tackle, which despite our outreach and legislative efforts remains the largest avoidable cause of death of adult loons in the state. We also collected an 11-week old loon chick that died of ingested lead tackle, an exceedingly rare occurrence (lead tackle affects adult loons almost exclusively). Three adult loons died from fungal infections (aspergillosis); two of unknown trauma; one of trauma from another loon; one from an infection; and one from entanglement in monofilament fishing line. The cause of death of one other adult loon has yet to be determined. Therefore, a minimum of five loons collected by LPC were killed as a direct result of human activity; technically we met our goal, but human-caused mortality of loons is still disturbingly high, especially the continuing deaths from lead fishing tackle.

ONWARD: YEAR THREE

With your continued support of the Loon Recovery Plan, we will maintain and increase our monitoring, research, management and outreach in 2012 to allow our loons to thrive. A key component of these efforts will be continued work to educate decision-makers in the New Hampshire Legislature. LPC will be an active participant in the NH House study committee to encourage informed discussion of the issue of lead fishing tackle mortality and will again press for measures to protect our loons from lead tackle in the next legislative session beginning this fall. We will continue our partnership

with NH LAKES by launching a joint educational effort, the Lead-Free Lakes Initiative, that will complement new law when it is finally passed by the Legislature.

We will cooperate with other researchers to continue sampling contaminants in loon eggs and expand sampling to lake sediments and crayfish to better understand the possible sources of contaminants and their bioaccumulation in aquatic food webs. And of course we will continue our work with Mark Pokras and students at Tufts University School of Veterinary Medicine to study indicators of loon health and stressors affecting loon health, including contaminants, blood parasites and other pathogens.

LPC will also partner with researchers assessing the utility of nest cameras to determine causes of loon nest failures, study the contribution of temperature to nest failures, and attach small, lightweight data loggers to plastic leg bands placed on loons as part of our banding program. We will also continue to expand our management activities (nesting rafts, signs and ropelines) to mitigate specific challenges to nesting loons; expand our communications with dam owners to maintain stable water levels during users about the needs of nesting loons and loon families. Funding to implement Year Three of the Loon Recovery Plan will support the increased monitoring, research and management activities described above, toward the ultimate goal of a recovered and viable loon population in New Hampshire. I invite you to support all of the efforts described above by donating to the Loon Recovery Plan. **To support the Loon Recovery Plan, please visit our website and click on the "Donate to LPC" button on the home page and select "Loon Recovery Plan." Thank you for your support of this important work!**

~Harry Vogel

Photo Courtesy of Kittie Wilson

The results of our efforts were a decrease in the number of human-caused mortalities of loons, and an increase in the number of chicks hatched in New Hampshire, i.e. success in our two main objectives.

To report a stranded loon, loon harassment, or an injured or dead loon, please call the Loon Preservation Committee: 603-476-5666, or New Hampshire Fish & Game Dispatch: 603-271-3361.

Thank you!

Confronting the Challenges on Squam Lake

Another busy breeding season is underway throughout New Hampshire, and Squam Lake is no exception. LPC has been carrying out intensive management and monitoring on Squam Lake since the Squam Lake Loon Initiative (SLLI) was launched in 2007 in response to unprecedented declines in adult survival and reproductive success among Squam's loons. Once again this year, loons are being closely monitored to detect the return rate of banded individuals. Fifteen banded loons are part of territorial pairs this year, accounting for over half of the paired loons on Squam. These known individuals will continue to provide LPC with valuable information on loon productivity, health, contaminant burdens, survival, territory fidelity, and other information that will extend LPC's knowledge of the impact of various stressors on loons and enhance our ability to preserve loons throughout New Hampshire. LPC floated eight artificial nesting rafts on Squam this year, and we are already floating ropes and signs to protect nests and chicks. LPC has a busy outreach schedule for Squam residents and visitors as well. We are now in our fourth year of collaborating with the Squam Lakes Natural Science Center on a weekly "loon cruise" on Squam Lake, and we are continuing LPC's tradition of weekly presentations to guests of Rockywold-Deephaven Camps.

In addition to our monitoring, management, and outreach on Squam, LPC's research on contaminant levels and other stressors that may have contributed to the decline is ongoing. As part of the SLLI, we have now tested 17 eggs from Squam Lake, and the results from our most recently tested 5 eggs continue to suggest disturbing trends on the lake. The same female loon had eggs tested from both 2005 and 2010, and, disturbingly, both of her eggs had virtually the same levels of the flame retardant PBDE-99, a chemical found at high levels in Squam loons from 2005-2007. Also indicating cause for concern, levels of DDT and total PCB's in an egg from Moultonborough Bay in 1995 were comparable to the extremely high levels of these contaminants found in eggs from the same bay in 2007. High levels of these "legacy contaminants" (i.e., chemicals that have been banned for decades but still persist in the environment) are not unexpected in eggs from earlier years; but the elevated levels in Moultonborough Bay in eggs from over a decade apart could suggest that either certain areas of the lake experienced greater levels of contamination or repeated contamination events. In general, levels of contaminants in eggs from 2010 were lower than levels measured during the critical period of loon decline and reproductive failure in 2005-2007, but we will continue to monitor contaminants in eggs from 2011 and 2012.

To help us understand what this means for Squam's loons, we will need to test additional eggs from key territories and years to understand the variability in levels of contamination on the lake. In addition to eggs, we will also begin testing sediments and crayfish. The sediments will help us better understand the spatial distribution of contaminants in the lake, while results from crayfish will help us better understand the food web on Squam and possible changes in the prey base that loons may be feeding on.

We are very excited to undertake this expanded research. Ultimately, our findings will benefit not just the loons of Squam but loons throughout New Hampshire as we gain a better understanding of the multiple stressors facing loons, how loon populations respond to changes in their environment, and how LPC can respond to these stressors to preserve loons in New Hampshire.

To help LPC's research and management on Squam, Wendy Van de Poll and her swim team will again be swimming the 7-mile length of the lake to raise funds for the SLLI. You can show your appreciation and support for Wendy and her team's tremendous effort by coming to the Sandwich Town Beach on August 3rd to welcome her and the team in. Also, please consider supporting Wendy's efforts by donating at www.loon.org. Simply click on the "Donate to LPC" button and select the Squam Swim/Squam Lake Loon Initiative option.

~Tiffany Grade

Photo Courtesy of Kittie Wilson

LPC Welcomes Tiffany Grade in Her "New" Role at LPC

When LPC hired Tiffany Grade as our Squam Lakes Biologist in 2008, we knew a little of her colorful past but had no idea of her future importance to LPC's work to protect loons on Squam Lake and throughout the state.

Tiffany first became enthralled with loons at her parents' cabin in Wisconsin when she was three years old, and had expanded that passion to other birds by the age of ten. She then took a brief detour to gain her Ph.D. in Medieval History at the University of Notre Dame (writing her dissertation on "Warfare, the Royal Image, and National Identity: Succession and Propaganda During the Hundred Years War, 1337-1422") before completing her B.S. in Natural Sciences, Wildlife Ecology at University of Wisconsin-Madison. So in total, she earned her B.A., M. Phil., M.A., Ph.D., and B.S. degrees in that order, making her the most educated staff member LPC has ever employed! She has put her diverse skills to good use as LPC's Squam Lakes Biologist every summer for the past five years. As the Squam loon population crashed, it was natural for LPC to expand her role as we expanded our monitoring, research, management and outreach to investigate this issue and recover Squam's loons. The Squam Lake Loon Initiative has resulted in a greatly increased set of responsibilities for Tiffany including the overall coordination of LPC's work on Squam.

Photo Courtesy of Mark Wilson

The loss of Squam's Great Island male loon in 2010 to a lead-headed fishing jig focused Tiffany's attention on the effects of lead tackle on loons in New Hampshire. Her research was a major driver of LPC's continuing effort to restrict the sale and use of certain types of lead tackle, and resulted in a M.S. thesis and degree to add to Tiffany's considerable collection. Plans are underway to have Tiffany lead a New England-wide analysis of this critically important issue for loons. We expect that the combination of her work on Squam and continued research on causes of adult loon mortality will keep even Tiffany challenged and busy protecting our loons for some time to come!

~Harry Vogel

LPC Annual Meeting
August 23, 2012

The LPC Annual Meeting will take place immediately following the 2012 Loon Season Report by LPC Executive Director Harry Vogel (see page 18). The meeting will be held at The Loon Center, 183 Lee's Mill Road, Moultonborough, NH. The LPC Board welcomes your participation.

Chick Watch Returns to Squam and Winnipesaukee!

Those of you who have been with LPC for a long time may remember "Chick Watch," in which lake residents on Squam and Winnipesaukee organized among themselves to take turns parking their boats in the vicinity of a loon family to protect them from speeding boats or boaters trying to get too close. LPC's data shows that, among collected chick mortalities, boat trauma is the second leading cause of death; and Chick Watch was a wonderful way for lake residents to protect their loons, help ensure the survival of the chicks, and educate other lake residents and visitors about the needs of the loons.

Happily for the loons, Chick Watch is being revived on Squam and Winnipesaukee through the dedicated efforts of some of our volunteers. Whether it's a big or small lake, everyone can help protect loons and loon families on their lake and educate others about loons. Perhaps at the end of the summer, you can look at a loon chick with the sure knowledge that you helped ensure the safety of that chick.

If you would like to organize a Chick Watch on your lake or pond, we are here to help. Just email Susie Burbidge at volunteers@loon.org for advice on how to get started.

MANY THANKS!

New Hampshire loons enjoyed the support this year of two enthusiastic nest-raft building crews, one from Deb Norwood's 5th grade science class at Franklin Middle School, and also from the Stewardship class at The Community School in S. Tamworth, NH. These rafts are floated on Lakes Region ponds and on Lake Winnipesaukee and Squam. Thanks to the students in both classes for their hard work and enthusiasm, and to Deb, Assistant Principal Scott Maxner, and Technical Arts teacher Allan Quinney at Franklin, and to Chris and Kathy Flaccus at The Community School.

Many thanks to the following companies for their support in the way of donated and discounted materials for signs and rafts this spring: Uncle Hilde's (Tilton), Boulia-Gorell Lumber Company (Laconia) and BF Products; and to Wild Meadows Canoes and Kayaks for their donation of a paddle.

SAVE THE DATE!
Annual Loon Census - July 21, 2012

LPC's annual Loon Census will be held on Saturday, July 21, 2012 from 8-9 am. Last year 572 observers covered 124 lakes around the state. We are hoping for an even greater turnout this year. If you don't already have a lake to cover please send an email to volunteers@loon.org.

Don't forget you can save a stamp and submit your observations online again this year (http://www.loon.org/census-form.php). If you prefer you can download the form from our website (http://www.loon.org/volunteer-field.php#voldocs) and mail it in.

2012 LPC SUMMER STAFF

LAKES REGION

Cory Gucwa

A graduate of the University of Tampa with a BS in Environmental Science, Corey began monitoring loons as a volunteer on Winnipesaukee and a part-time biologist in the Seacoast Region last summer. We are delighted to welcome him back as the Lakes Region biologist.

SEACOAST

Alexis Rudko

Alexis earned a Master's Degree at the University of New Hampshire using GIS mapping software and LPC loon habitat data. No stranger to the Seacoast Region, she spent her first season monitoring loons for LPC in 2008 and is looking forward to returning this summer.

MONADNOCK NORTH

Susie Burbidge

Susie returns for a fourth summer covering the northern Monadnock territory, as well as doing year-long, half-time duty as Outreach/Volunteer Coordinator at The Loon Center. Her outreach efforts include the e-newsletter and LPC's Facebook page among others.

SQUAM LAKES

Tiffany Grade

A veteran biologist on Squam Lake, Tiffany has expanded her role at LPC year-round as the new Squam Lake Project Biologist. She will continue her monitoring work on Squam as well as research on causes of adult loon mortality (see article page 9).

MONADNOCK SOUTH

Kathy Gunther

Kathy spent last summer working in the Ossipee Pine Barrens on a whip-poor-will project with the Audubon Society of New Hampshire. This was followed by a trip to Chile to track tundra peregrine falcons with the International Peregrine Project. Now it's on to loons!

UMBAGOG

Michael O'Brien

A graduate student at SUNY-Syracuse, Mike will study Maine populations of rusty blackbirds in the fall. He hopes to gain some initial experience through a study with NH Audubon this summer. He returns to LPC for his second season monitoring loons on Umbagog.

NORTH COUNTRY

Mary Raikes

Mary is a graduate of the College of the Atlantic where she earned a degree in Human Ecology. She recently spent time observing raptors in Wyoming with HawkWatch International. She arrives with a wealth of experience in avian monitoring and data collection.

WINNIPESAUKEE

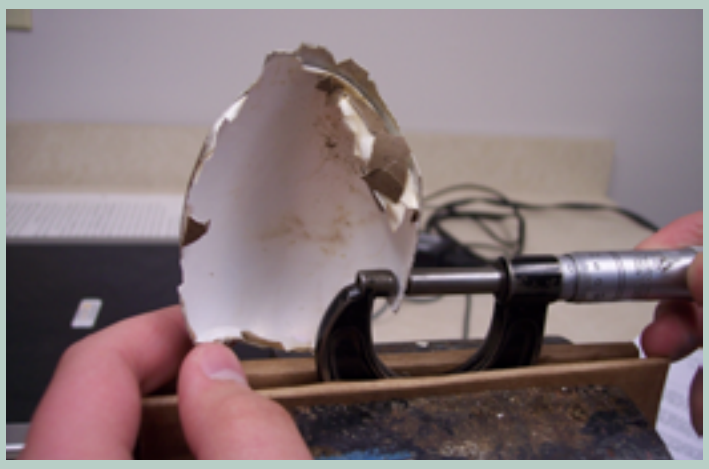
Elizabeth Jackson

Liz returns for a second season of monitoring loons on the big lake. She has initiated an independent project through her studies at the University of Vermont to place motion-sensitive cameras at loon nest sites to detect potential predators and nest disturbance.

Editors note: Beginning this January, local high school student Ross MacFadyen has been a weekly volunteer at LPC, contributing to a new analysis of eggshell thicknesses using eggshells archived by LPC since the 1970s. We didn't know what we'd find and the project proved to be a great early introduction for Ross to all the vagaries and unknowns of "real world" science. Ross' patient efforts on the project were much appreciated.

~John Cooley, Jr.

Eggshell Thickness Project Summary
Ross MacFadyen



The Loon Preservation Committee has been collecting failed loon eggs and loon eggshells for decades, and they have provided vital information for the preservation of loons. In the 1970s, eggshell thinning had been observed in many bird species, and laboratory and field studies correlated this thinning to the rise of the pesticide DDT in the environment, beginning with the first widespread use of DDT in the late 1940s. A study of New Hampshire loon eggs collected in 1975 and 1976 found that eggshell thickness was significantly correlated with DDT concentrations in the individual eggs (Sutcliffe 1978). For loons, the thinning was not severe enough to cause eggs to break, in contrast to the decimating effects of DDT-induced eggshell thinning on species like eagles and peregrine falcons. Although the mechanism by which pesticides cause eggshells to thin is not entirely understood, it is thought that it impairs the ability of the shell gland to metabolize calcium as the eggshell is formed. Fish-eating waterfowl are especially vulnerable to this. Another study, done with eggs from 1979 and 1981, after these pesticides were banned in the United States, suggested a return to pre-pesticide thickness. Decades later, we looked at eggshell thickness again, using eggs from 2001-2011.

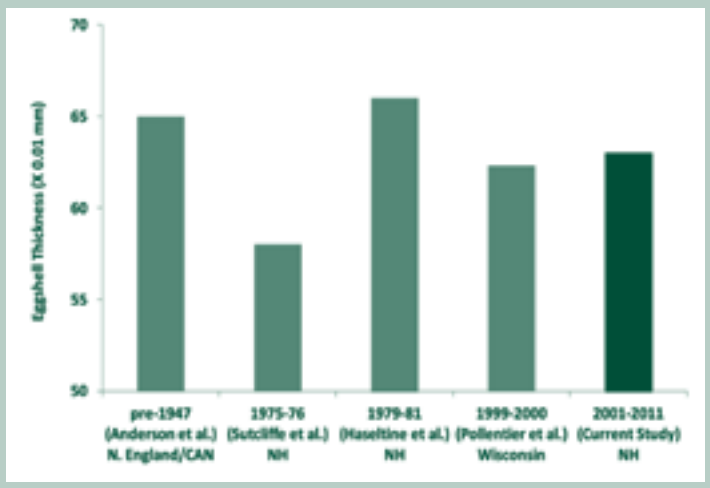


Figure 1. Loon eggshell thicknesses from before and after the period of widespread DDT use. (1940s to 1972).

Like previous studies, we measured with a micrometer accurate to 0.01 mm (for reference, a piece of paper is about 0.10 mm thick) at four locations. Most eggs we measured still had a membrane attached; the average size of the membrane, taken by subtracting the average thickness of eggs without membranes from the average thickness with it, was added to those that did not. We found that shell thickness varies significantly on different parts of the egg, and so took four measurements from the girth (widest part) of the egg only. Thirty eggs from 2001-2011 were measured. All measurements reported have a standard error of approximately 0.01 mm.

The average eggshell thickness for the first study (1975-1976) was 0.58 mm, an 11% reduction from the average of 0.65 mm found in pre-pesticide levels from museum egg specimens. The average for the 1979-1981 study was 0.66 mm (1979) and 0.65 mm (1981). This matches up with pre-DDT measurements of 0.65 mm. These values are displayed in Figure 1.

Although we expected to find similar numbers to the museum study and values in 1979 and 1981, our study found an average thickness of 0.63 mm, slightly but significantly lower than the other two studies. As of yet, we have no explanation for this, but we suspect other contaminants may be responsible.

Loons and Climate Change

An 80-degree heat wave? In March? One of the mildest New Hampshire winters in recent times came to a fitting close on March 23rd, with the earliest ice-out date on Lake Winnipesaukee in 126 years of record-keeping. This eclipsed the record set in 2010 by a single day, continuing a consistent trend toward earlier ice-out dates over the last thirty years. New Hampshire is warming up.

For loons, the implications of continued unchecked warming are stark. Neil Rodenhouse, a New England ornithologist, and collaborators at the US Forest Service have studied potential impacts of predicted climate change on suitable habitat for 147 northeastern US bird species, including loons. Their study predicts that over the next century, suitable climatic conditions for Common Loons will shift northward almost entirely out of New Hampshire if not mitigated in some way.

The specific mechanisms by which global warming and associated climate change will impact New Hampshire's loons are not all clear. But ice-out timing is a convenient and closely watched climate indicator, and loons are famous for returning to the lakes within a day or two of ice-out (sometimes within hours). Their return begins a critical period of territory establishment before nesting. In most years, this period lasts for seven or eight weeks, with nest initiation peaking in early June. Figure 1 shows that the relationship between nesting dates (on the vertical axis) and ice-out (on the horizontal) is a loose one. Seven weeks may be the average, but there are some years where an early ice-out is followed by late nesting. However, the inverse is not true. We simply don't see years with a late ice-out and early nesting; the lower right hand corner of the graph is empty. It appears that loons need some minimum length of time to prepare for nesting, most evident when a late ice-out pushes that lag time further back on our human calendar. It's unclear what would determine the length of this pre-nesting period. For some of this time the first territory-holder to return is waiting for the return of its mate. As this happens, there is some evidence that an early ice-out may provide a longer opportunity for non-breeding loons to displace established breeders, winning a territory before the nesting season starts. Working with color-banded loons in Wisconsin, Dr. Walter Piper has noted an apparent increase in mate turnovers during years with early ice-out.

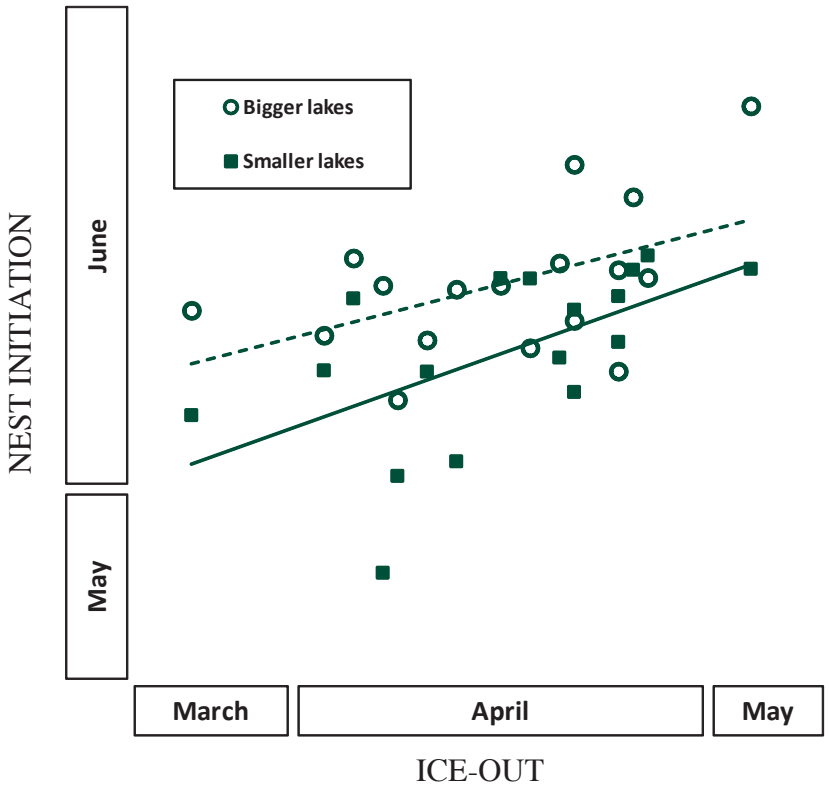


Figure 1. Ice-out and loon nest initiation dates in New Hampshire Lakes Region, 1995-2011.

So, if past patterns hold true, this year's ice-out record will bring a slightly earlier loon nesting season and we may see a few more territorial takeovers than otherwise. For now, in anticipating the consequences of climate change, that's about as far into the future as we can safely guess.

~John Cooley, Jr.

On an eerie night
The loon's cry rendering me
Unconscious of time.

~Judith Rahilly, 1969

LPC Welcomes New Board Members

The Loon Preservation Committee is honored to welcome three new members to the Board of Trustees: Elizabeth Painter Gabel, Sheila J. Kabat and Suzanne R. Beach. Each of these talented women brings a unique skill set to the Board which will greatly enhance LPC's operations.

Elizabeth (Liz) Gabel, and husband Bob, reside on Lake Winnipesaukee in Moultonborough where they are avid kayakers. A graduate of the College of St. Elizabeth (BA, English) and the University of Colorado (MA, English with a concentration in Computer Science) Liz had a successful career as a Technical Writer and Editor, including Digital Equipment Corporation and Sybase Inc. She is currently a Board Member and the Newsletter Editor of the Lakes Region Newcomers Club, a trail maintenance volunteer for the Lakes Region Conservation Trust, and has been an invaluable asset to LPC's Summer Luncheon Committee and Spring Migration Gathering for the past two years.

Sheila Kabat hails from Nashua (NH) with a seasonal home on Little Squam Lake in Holderness. Recently recognized by **Cambridge Who's Who**, Sheila is a gifted and accomplished Human Resource professional and Organizational Development practitioner. She has worked throughout the Northeast with extensive and diverse experience in senior leadership roles. Sheila earned an MS in Business from Lesley University, and an MA and BA in Liberal Arts from Sienna Heights University. She is active in her community and professional associations, and is currently a Business Curriculum professor at Hesser College. She will add to the legacy of her late husband, Joe Kabat, on the LPC Board.

Suzanne (Suzy) Beach, and husband Tom, make their home on Squam Lake in Moultonborough, as well as Bryn Mawr (PA) and Naples (FL). Suzy has been an enthusiastic participant in the annual Loon Census on Squam for over 15 years. She enjoyed a career as an Interior Designer in both the residential and commercial sectors, attending St. Lawrence University, Moravian College and Moore College of Art along the way. Now retired, she is an avid traveler, golfer, and art enthusiast. As required by her profession, Suzy is energetic, charming and poised and looks forward to contributing her talents to LPC's special events.

We are delighted to welcome Liz, Sheila, and Suzy to the Board and look forward to benefitting from their guidance as we work together to protect loons in New Hampshire. *~Harry Vogel*

Paying Tribute: Dick Long of Conway Lake

A recent email from Pat and Dave Dick of Conway Lake captured well the work over many years of local loon hero Dick Long, who is moving off the lake. The email is a fitting tribute to our "Loon Rangers" throughout the state—incomparable, all of them, but equally appreciated. On Conway Lake, Dick has done an extraordinary job coordinating the day-to-day loon sightings as well as loon signs and rescues, and an extremely accurate count during the annual July census. We will miss you Dick!

"Spring is here, summer is coming, and what will we do without Dick Long! We will just have to face the loss of another pillar/protector/champion of our beloved Lake. We know the acknowledgement and accolades occurred a while ago, but your contributions will remain long after all of us are gone.

One's legacy is really what matters. Have we made this world a better place? Your presence here these many years will forever be, and this is a better place for it. In the sunrise, the mists, the clear blue water, and the lonely/longing call of the loons, your work and love for our lake is embedded forever. Thank you is not enough, but perhaps our commitment to carry on your work, your teaching, and example will suffice. You must know, every water sample, every loon sign, every weed search, etc. has your DNA." ~Pat and Dave Dick

What's All the Yakking About?

NEW THIS YEAR…YAKKING FOR LOONS!

Dust off your kayak and join us for the first annual LPC Kayak-A-Thon to be held on Friday, July 13th. Paddlers will meet at Lee's Mill Landing, just down the road from The Loon Center on Lake Winnipesaukee, at 8:00 a.m. for registration. Choose between the 2.5 mile "Ganzy" course or the 4.6 mile "Green's Basin" course, or do BOTH! You can also rent a kayak, paddle and lifejacket for only $20!

Registration is $10/person and includes a light lunch. Yakkers can also solicit additional sponsors if they choose. The first 50 to register receive an LPC "Yakking for Loons" baseball cap, and there will be a prize for most funds raised. Registration and pledge forms can be downloaded from LPC's website: www.loon.org/yakking.php. Children under 18 years of age must be accompanied by an adult.

Co-chairing the event are LPC members, and neighbors on Lake Winnipesaukee, Linda Allen and Joanne Chesley. Their love for paddling and their resident loons prompted them to approach LPC with this great idea and we are thrilled to add it to our summer schedule!

For more information contact Lin O'Bara at lobara@loon.org or 603-476-LOON.

People Come from Near and Far to Visit The Loon Center

Although we are a small center in Moultonborough, New Hampshire, visitors come from all over the country and world to visit us! In 2011 we had approximately 8,950 visitors from 46 states and 15 countries (states and countries were tallied according to guests who signed our visitor log). The top 5 states represented were: 1) the Granite State (NH); 2) our neighbors to the south and home to approximately 73 loons (MA); 3) the Empire State (NY); 4) the Constitution State (CT); and 5) the Keystone State (PA). The only states missing in our visitor log were Arkansas, North Dakota, South Dakota and Oklahoma (if you have any friends who live there, bring them over for a visit!). The top five international visitors came from Canada, the UK, Australia, France and New Zealand, but we also had visitors from Egypt, Brazil and Singapore among others.

If you haven't been to The Loon Center make sure to come by for a visit soon. There are two nature trails that wind their way through the Markus Wildlife Sanctuary which abuts Lake Winnipesaukee. Inside we have wonderful exhibits, an award-winning video which was filmed on "Golden Pond" (aka Squam Lake) and a gift shop with unique items for self-acclaimed loon lovers. There are activities for the kids as well, including a chance to earn a "Junior Loon Biologist" badge!

Until June 30, 2012 we are open Monday-Saturday from 9:00 a.m. - 5:00 p.m. Starting July 1 through Columbus Day we are open seven days a week from 9:00 a.m. – 5:00 p.m. Come see why visitors travel from near and far to visit The Loon Center!

~Susie Burbidge

PLEASE SUPPORT THE SQUAM SWIM

August 3, 2012
7:00 a.m.

Once again a group of intrepid swimmers led by Wendy Van de Poll will swim the 7-mile length of Squam Lake, from the Squam Channel Outlet in Holderness to the Sandwich Town Beach, to raise funds for LPC's Squam Lake Loon Initiative (see page 8). You can show your support for Wendy and her team by coming to the Sandwich Town Beach around 11:30 a.m. on the 3rd to welcome them in, or by making a donation at:

http://www.loon.org/donation-form.php

and select the Squam Swim/Squam Lake Loon Initiative option. You can also mail your gift to: Loon Preservation Committee, PO Box 604, Moultonborough, NH 03254.

2012 Swim Team: Wendy Van de Poll, Rick Van de Poll, Rose de Mars, Sara Prouty, Mark Longley and Kit Kilbourn.

Carl R. Johnson Memorial Golf Tournament

August 20, 2012
Ridgewood Country Club, Moultonborough NH

Registration 7:00 a.m. ◆ Shotgun Start 8:00 a.m. ◆ Lunch/Awards 1:00 p.m.
Scramble Format/Teams of Four

★★★PRE-REGISTRATION REQUIRED★★★

Proceeds benefit the Loon Preservation Committee and its work to protect loons and their habitats in New Hampshire

Reason

Whenever the gods call out to the loons
and the loons reply across the still morning lake
and the sun squints pensively above them
and the trees shift, making lofts for their song,

It must be to soften a person's sorrow,
taking its steady-going stream across
the mountain range through clouds that
wind and cushion it like an accidental plaything.

It must be to settle the placement of change,
the way mist will rise balloon-like over the lake
making visible blue pickerel weed, swamp grass,
and the glazed broad faces of lily pads.

Or to let you feel, yet not quite understand
the sadness that surrounds this body of
remembrance, wafting above you,
above this chill New England day.

-Page Coulter

Page Coulter has published five books of poetry and offers weekly poetry workshops at her home near Red Hill Pond in Sandwich, NH. The poem "Reasons" appears in Snow Over the Ossipees.

We dedicate this poem to Eugene "Gene" S. Martin, a former Chair of the LPC Board and dedicated member of LPC, who passed away on May 31 at the age of 84. His spirit will forever keep watch over the loons at Pine Point on Lake Umbagog and help guide our work here at LPC.

JOHN DAVID GEERY PHOTO

www.loon.org/gift-shop.php

Can't make it to The Loon's Feather Gift Shop? Then be sure and check out our wonderful assortment of loon and nature-themed gifts online!

Choose from books & calendars, clothing & jewelry, CDs & DVDs, home & kitchen, toys & games, and much more! If you don't see what you're looking for, please give us a call and we will be happy to assist you by phone: 603-476-LOON.

Loon Flute $23.95

Your on-line resource for "all things loon" and more!

Visit the Loon Center

A recent addition to The Loon Center is the nesting raft activity for our younger visitors. Mud pillows, synthetic weeds, wooden eggs, stuffed toy loon adults and chicks, float lines and signs allow children to earn their Junior Loon Biologist sticker when they "Help Our Loons Nest on Our Raft." Many thanks to LPC volunteers Dan Jackson, Cydonia Hubicki and Anne McLean for their help in the construction of the exhibit.

DISPLAYS

EXHIBITS

VIDEOS

NATURE TRAILS

GIFT SHOP

Selling "all things loon" and more!

Summer 2012 Nature Talk Series

at The Loon Center
Lee's Mill Road, Moultonborough, NH
Thursdays, 7:30pm ◆ Admission Free ◆ Donations Appreciated

Thursday, July 5 **LOONS – The Call of the Wild**

Loon Preservation Committee Director Harry Vogel and loon expert, author, and award-winning nature photographer John Rockwood team up for a presentation for loon lovers. John's multi-media show follows loons from their arrival in the spring to their departure in the fall. Harry will talk about the work of LPC biologists and how loon watcher volunteers can help to preserve loons.

Thursday, July 12 **Among The Bears**

Author and filmmaker Benjamin Kilham shares his unique experiences with black bears. A resident of Lyme, NH, Kilham has fostered and rehabilitated dozens of bears on his wooded preserve, including an injured cub rescued near The Loon Center. Ben's approach to rehabilitation has garnered information on black bear behavior that was previously unknown.

Thursday, July 19 **The Hand of Man**

Award-winning gardner and world traveller, Arabella Dane, will take us on a global adventure looking at several sensitive situations caused by the hand of man. As we measure risk vs. benefit, there are increasing concerns about the consequences of our actions in far corners of the earth, such as the plight of the Polar Bears. Arabella will take us to various parts of the world to see some of the ways the hand of man is affecting our planet.

Thursday, July 26 **Investigating Wildlife**

Forester Lynn Levine, author of "Mammal Tracks and Scat: Life-Size Tracking Guide" and "Snow Secrets," will present an interactive program that delves into the "ephemeral stories" that New England's wildlife leave behind. Through storytelling, participants magically transform into animal detectives who learn skills to read the signs of their wildlife neighbors with a special emphasis on interpreting clues for summertime tracking.

Thursday, August 2 **Featherbed Time**

Come celebrate the first precious days in the life of a loon chick, a time spent snuggling in the warmth of the featherbed on Mother and Father Loon's broad back. Loons are amazing bird parents, very gentle and loving with their chicks. Kittie Wilson, proud recipient of the 2009 Spirit of the Loon Award, will share her observations and photographs of this magical time.

Thursday, August 9 **Taming of the Shrew - Small Mammals of New England**

Ever wonder what the smallest mammal is in North America? Did you know that New England has one of two venomous small mammals in the world? Or that the biomass of small mammals per square mile outpaces deer by 40:1? Come to this special slide show lecture by Dr. Rick Van de Poll of Sandwich as he describes the 20 species of small mammals we have in the New England area, to include specimens, skulls and skins!

Thursday, August 16 **The Nature of New Hampshire: Natural Communities in the Granite State**

Come see New Hampshire's natural beauty through the lens of Natural Heritage Bureau ecologists/photographers Ben Kimball and Dan Sperduto. Lou and Marilyn Lieto will be your presenters and help you discover new places to visit and new ways to observe New Hampshire's natural landscape. The presentation is provided by the UNH Cooperative Extension through its COVERTS Project initiative.

Thursday, August 23 **2012 Loon Season Report**

LPC Director Harry Vogel will present trends in New Hampshire's loon population and preliminary statistics on how loons fared in New Hampshire over the last year. Also featured will be a slide show by nature photographer John Rockwood. The Loon Preservation Committee Annual Meeting will follow.

PHOTO COURTESY OF NORDEL GAGNON

Loon Preservation Committee
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The Loon Preservation Committee gratefully acknowledges our friends at Squam Boat Livery, Inc. for underwriting this publication.

Photo courtesy of John Rockwood