



# *Loon Preservation Committee* **NEWSLETTER**

*P.O. Box 604, Lee's Mill Road, Moultonborough, NH 03254 603-476-LOON (5666)*

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FALL 2008



## DIRECTOR'S MESSAGE

### *Second Nature*

Democracy and science share at least one thing in common: They are both, despite their imperfections, the best ways we know to accomplish their respective tasks, whether it be governance of human societies or understanding our world. But we've learned something recently about the limits of human understanding, and the fallibility of so-called experts, in ensuring a safe and stable world. I hope this lesson in humility will be applied to other systems that are rarely given the same prominence in our debates - like our ecosystem, for one, on which our very lives, and not just our fortunes, depend.

Scientists have been sounding alarms about our environment and wildlife more urgently and with far greater consensus than the talking heads did about our finances, but our past responses to both issues - ignoring the problems and hoping they would go away - have been largely the same. You need look no further than a loon egg to see the impacts of this lack of caution on our wildlife, and by extension on us. The reduced hatching success of our loons' eggs, and the contaminants LPC has found in them (see pages 3-6), are signs of troubles in our ecosystem just as surely as the state of my 401(k) is an indicator of our financial crisis.

The economic difficulties in which we find ourselves were not predicted, except by a few wise voices which were drowned out by Market Forces. LPC was just such a voice in the wilderness when it was created, in 1975, to preserve a voice in the wilderness. That wild voice, the spirit of our northern lakes, came perilously close to being stilled because of human activities. Since then, we have made great progress in illuminating the value of loons and other wildlife to our experience of New Hampshire; reversed the decline of loons; and helped to form organizations throughout North America working to save threatened and endangered species, based on LPC's very successful model.

The number and extent of challenges facing our loons and other wildlife continue to grow; but I am confident that science can illuminate the dangers we are facing, and the actions needed to beat them. I also have confidence that, if enough people are made aware of this other crisis we are facing, we can find solutions before we experience ecological problems that will more than rival our latest financial downturn.

As ever more attention is focused on our fortunes, it's also in our power to balance our short-sighted self-interest with some far-sighted concern for the Earth and all of its inhabitants. Maybe recent events will encourage us to re-evaluate some long-held truths about our effects on our world, and the rewards we can expect to reap from our actions. A little common sense would serve us well in both of these situations. After all, it ought to be second nature, to take care of nature.



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*The Loon Preservation Committee (LPC) is a non-profit, self-directed and self-funded constituent organization 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 research, management and education.*

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## Good News and Bad: New Hampshire's Loons in 2008

Each year, the Loon Preservation Committee (LPC) works to preserve loons and their habitats in New Hampshire through monitoring, research, management and education. The 2008 field season brought both good news and bad for New Hampshire's loons:

### MONITORING

First, the good news: LPC volunteers and field staff documented a record-breaking 247 pairs of loons in New Hampshire, up from 224 pairs in 2007. The number of pairs that nested also increased to a new high, from 141 in 2007 to 160 this year (Table 1; Figure 1). From Cold Spring Pond in southwestern New Hampshire to Upper Moose Falls in Coos County, these new pairs and nest sites are signs that our loon population is slowly regaining the lakes left vacant by historic declines. The increases in the numbers of adult loons observed in 2008 could be a result of the relatively high reproductive success experienced by loons from 2000 to 2005 (Figure 2). Research done by the Loon Preservation Committee, the Biodiversity Research Institute

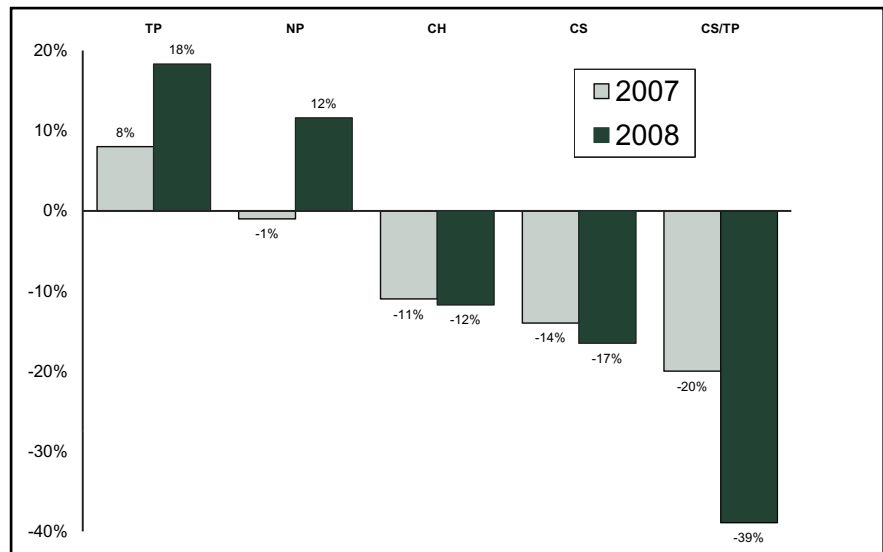


Figure 1. 2007-2008 Loon Nesting vs 5-Year Average (2003-2007) (% change)

and other groups has shown that the average age of first breeding of loons is 6-7 years old, so the cohort of chicks born during this loon baby boom is probably making its very welcome presence felt on our lakes.

The bad news is that 2008 was a dismal year for nesting success of our loons. This year marked the fifth consecutive year of declining nesting success for New Hampshire loons, a trend not seen before in LPC's 34 years of monitoring (Figure 2). Total

nest failures for this year tied the record of 89 set in 1998, which still holds the dubious distinction of the highest number of nest failures due to water level change. Loons experienced greater than average nest failures due to water level changes in 2008 (and also in 2005 and 2006; perhaps a sign of increased rain events as predicted in global climate change models). However, predation and other causes of nest failures were also high (Figure 3). Nest failures

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Table 1: Results for 2008 Common Loon Breeding Season in New Hampshire

	2007	2008	% Diff from 5 yr. average	2008 Rank in 33 yr. monitoring period
Breeding (territorial) pairs (TP)	223	247	+18%	1st
Nesting Pairs (NP)	141	160	+12%	1st
Chicks Hatched (CH)	131	128	-12%	10th
Chicks Surviving to mid-August (CS)	103	97	-17%	10th
Nest Failures (NF)	70	89	+29%	1st (tied)
NP/TP	0.63	0.63	-11%	22nd
CH/NP	0.93	0.71	-24%	31st
CS/CH	0.79	0.65	-15%	24th
NF/NP	0.50	0.55	+41%	2nd
CS/TP	0.46	0.31	-39%	33rd

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are often due to a mix of factors, such as competition among loons for territories that can result in less time on the nest; unnaturally high populations of scavengers or predators due to the availability of human refuse; contaminants in eggs that can affect hatching success; and disturbance of nesting loons by boaters or other lake users. The combined effect of these stressors resulted in this season's record number of nesting loon pairs producing only 97 surviving chicks, fewer than last year's 103 surviving young. Statewide reproductive success was only 0.39 chicks per territorial loon pair. For the past three years, the breeding success of our loons has been below the rate required to sustain a stable population (Figure 2).

Breeding success was especially low on the state's three biggest lakes: Squam, Umbagog, and Winnepesaukee. Only four chicks survived on Winnepesaukee, two chicks on Squam Lake, and one on Umbagog. The combined total of seven chicks surviving on these three lakes ties a record for the lowest ever recorded, set in 1975 – the first year of LPC surveys – and again in 1980. Loons on Massabesic and Conway Lakes also experienced low breeding success, fledging one and zero chicks respectively from a combined total of 10 territorial pairs.

### THE LOON CENSUS

Volunteers continued to play a critical role in monitoring New Hampshire's loons in 2008. On Saturday, July 19th, 549 loon watchers throughout New Hampshire took part in the annual volunteer loon census, covering 122 lakes (Table 2). These observers counted 401 adult loons and 45 chicks. Census observations were combined with season-

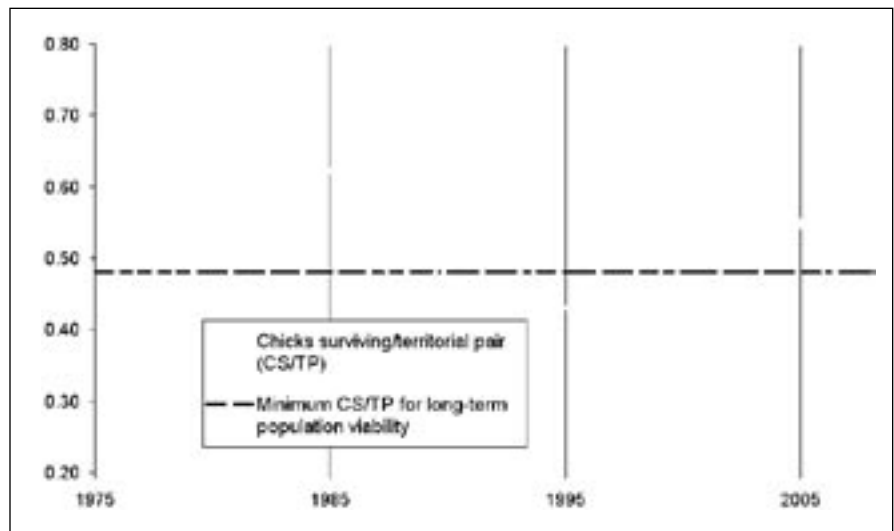


Figure 2. Chicks surviving per territorial pair

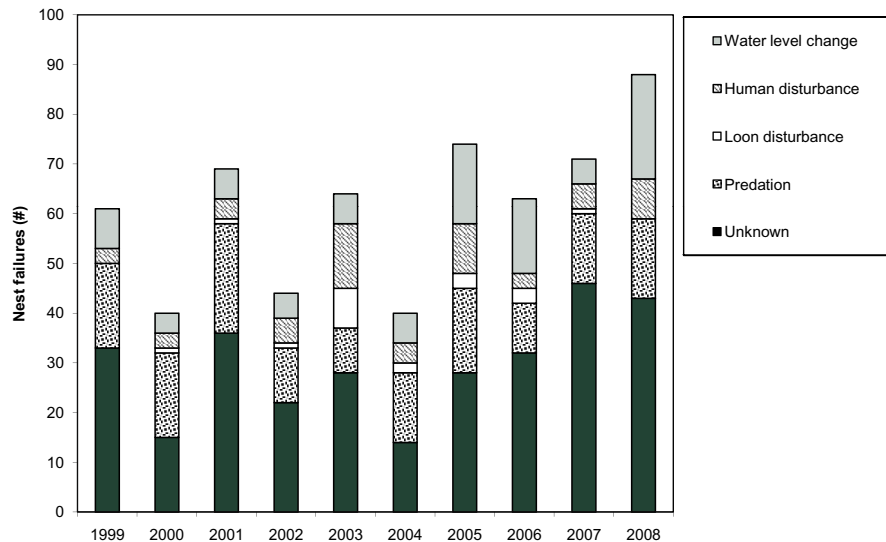


Figure 3. Common Loon nest failure causes, New Hampshire, 1999-2008

	2008	2007	2006
Adult Loons	401	354	386
Chicks	45	57	52
Immatures	6	8	12
Total Loons	452	419	450
Lakes Censused	122	110	114
Observers	549	513	512

long survey data for these and 142 additional lakes to arrive at the state-wide numbers in Table 1. The census event requires an organized effort on the big lakes, where crews of friends and neighbors each cover a section of the lake and then compile their tallies. On many of these big lakes, the census coordinators also provide lake access and local knowledge — informal on-the-job training — to LPC field staff throughout the season. They would not be able to effectively cover the many loon territories on these lakes without this help.

With grant funding from the New Hampshire Charitable Foundation, LPC looks forward to offering several volunteer training workshops in early summer 2009 to continue to increase the number of volunteers who help us count loons on lakes across the state. Please contact LPC (603-476-LOON) to find out more.

#### SQUAM LAKE LOON STUDY

The Loon Preservation Committee has been working to determine the causes of the dramatic decline of loons on Squam Lake, and the reproductive failure of the remaining loon population. The Squam Lake Loon Study begun in 2007 includes an increased monitoring and research effort to: establish overall survival and reproductive success of Squam's remaining loon population; assess causes of nest failure and collect inviable eggs from failed nests for analysis of a wide range of contaminants and pathogens; find and collect loon carcasses and test liver samples from dead loons for contaminants and pathogens; band loons to allow us to identify individual birds and collect blood and feather samples for analysis; determine survival and breeding success of previously banded and sampled loons, and relate survival

and breeding success of individuals to their levels of contaminants and pathogens; and create a systems dynamics model to determine the relative contributions of a wide range of possible stressors on the mortality and reproductive failure of loons on Squam Lake.

In 2007 and 2008, LPC biologists monitored loons on Squam Lake and Little Squam Lake throughout the breeding season, and LPC staff and volunteers conducted four intensive sweeps of Squam Lake in addition to the Loon Censuses on July 21st, 2007 and on July 19th, 2008. Staff from the Tufts University Cummings School of Veterinary Medicine and the University of New Hampshire performed necropsies on six adult loons found dead on Squam Lake between 2004 and 2007. They found that two loons were killed by boat strikes; two were killed as a result of ingested lead fishing tackle; one was likely killed as a result of a fishing hook that had pierced its stomach wall; and one adult was killed as a result of wounds from another loon. Necropsies did not reveal excessive parasite burdens or identify other pathogens that might have contributed to the declines on Squam, but the state of decomposition of most carcasses limited our ability to detect these pathogens. Many more Squam Lake loons missing during this time period remain unaccounted for and are presumed to have died on their ocean wintering grounds. Frozen liver samples from loons collected on Squam Lake and from "control" lakes (those that did not experience dramatic declines in adult loons or breeding success) have been submitted to a laboratory for testing. LPC will test as many liver samples as funding allows.

A team of biologists from the Loon Preservation Committee, the

Biodiversity Research Institute, and Tufts University banded 13 loons on the Squam Lakes in 2007 and 2008. Blood and feather samples were taken from each banded loon to test for contaminants and pathogens. Feathers taken from loons on Squam Lake and other lakes in New England revealed the presence of cyanobacteria toxins. This is the first time loons have been tested for cyanotoxins and it is difficult to determine what effect the toxins might have. However, the levels found in some loons would be a cause for concern in other animals. Preliminary analyses of blood samples collected during banding have not revealed blood parasites or elevated white blood cell counts that would indicate disease, and blood serum has been sent to labs to be tested for disease agents including bacteria and viruses.

LPC biologists collected 13 inviable loon eggs from failed loon nests on Squam Lake in 2007 and 2008. Initial results from eggs collected on Squam Lake and three control lakes revealed very high levels of a number of contaminants including PFOS (a chemical used in stain guards in a wide variety of consumer goods), PBDE (a widely-used flame retardant) and PCB. LPC is awaiting results of tests on four other loon eggs collected from failed nests on Squam Lake in 2007, and submitted to a United States Fish and Wildlife Service lab in January of 2008. We will test as many eggs collected from failed nests on Squam Lake in 2008 as funding allows.

Plymouth State University mathematics professor Tom Boucher and students in his Special Topics course partnered with LPC to investigate the effects of a large number of variables on the breeding success of loons on Squam Lake, including air

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temperature, precipitation, extreme weather events, fish populations, predator populations, recreational use of lakes, and LPC's management to mitigate these effects. Connections made during the course prompted one of its students, Chris "Biff" Conrod, to come on staff in 2008 as Field Program Coordinator, bringing with him an interest and training in this kind of statistical ecology. Preliminary results of these analyses have been submitted to a peer-reviewed journal.

LPC is working with Lori Siegel of Siegel Environmental Dynamics to integrate results of all of the above analyses into a systems dynamics model. This model will determine the relative contributions of a wide range of possible stressors on the mortality and reproductive failure of loons on Squam Lake.

The Squam Lake Loon Study has already provided invaluable baseline data on contaminants and other environmental stressors on loons. The collaboration of researchers formed as a result of the decline of loons on Squam Lake is unprecedented, and the testing being done on loon samples is the most comprehensive undertaken ever. We anticipate that this study will help avoid future declines of loons on Squam Lake or on other lakes; bring to light what could be a much larger, more systemic problem on Squam indicated by the decline of loons; and educate ourselves and the public about loons and the factors affecting loons on Squam Lake and statewide.

LPC and its collaborators have collected and archived samples of loon blood, tissues and eggs for many years, but budgetary limitations have prevented the analyses of these samples before this study. The results of this study

will provide basic knowledge of contaminants and pathogens in loons that is lacking at present, and baseline data which will be invaluable to assess changes in the presence and concentrations of these contaminants and pathogens in the future. Our thanks to the many donors who have made this project possible.

#### MANAGEMENT

Each year, LPC floats artificial nesting rafts to help loons cope with changing water levels and populations of shoreline nest predators that have increased to unnaturally high levels because of human activities. Staff and volunteers also float signs around active nesting and brooding sites to give loons in threatened locations some protection from boating and other human activities on the lakes. A record 57 artificial nesting rafts were floated this year and provided ropes or signs at 66 nesting or brooding sites. Approximately half of the rafts floated in 2008 were used by nesting loons. LPC also worked with dam owners and hydroelectric power companies to ensure stable water levels during critical nesting periods. Altogether, 46% of the loon chicks hatched in 2008 benefitted from at least one of these forms of management.

#### EDUCATION

LPC staff and volunteers have exhibited displays or given presentations 62 times to date this year to inform the public and lake users about loons and their needs, more than any previous year in LPC's history. This was possible in part thanks to the dedication and willingness of several 2008 field biologists, and 2007 Monadnock field biologist Jill Rolph. Several additional presentations are scheduled before the end of the year.

Visitors were welcomed to The Loon Center to learn about loons during regular hours of operations (7 days a week from July through Columbus Day, and six days a week throughout the rest of the year), at our free Thursday night Nature Talk series in July and August, and at special events like our annual Gala Luncheon and Loon Festival.

Perhaps LPC's most important educational activities were a result of the innumerable encounters between our field staff and volunteers, and lake users. Each of these meetings provided an opportunity to educate lake users about loons and their needs, and promote the culture of respect and appreciation that is necessary if loons are to continue to inhabit New Hampshire's lakes.



Photo courtesy of Kevin Warren

## THANK YOU

LPC wishes to thank all of those who worked to encourage and safeguard loons in New Hampshire this year. Thanks to Chris Conrod for a standout job as Field Program Coordinator, and our outstanding group of field biologists that made 2008 an enjoyable and productive field season: Emily Bastian, Keith Blanchette, Chris Free, Tiffany Grade, Michelle Kneeland, Todd Loffredo, Alexis Rudko, and Sarah Woodman. Former LPC staff Chris Persico and Mike Chickering were also skilled collaborators this year as BioDiversity Research Institute banding crew leaders – thanks to the “B” team. We are especially grateful to the veterinarians and rehabilitators who work with us to save sick or injured loons, or help to determine causes of mortality: Dr. Mark Pokras and staff at Tufts University Cummings School of Veterinary Medicine; Drs. Moritz, Cody, Tighe and staff at the Plymouth Animal Hospital; Dr. Julie Dolan at the Sandwich Animal Hospital; Dr. Dutton at Moore Animal Hospital; Dr. George Messenger at Fisherville Animal Hospital; Maria Colby at Wings of Dawn; Kappy Sprenger; and Cathi Gregg and Bethani Garland at Elaine Conners Center for Wildlife. We received much appreciated support in daily logistics from Squam Boat Livery, New Hampshire Fish and Game Department, and Squam Lakes Association.

We would also like to thank the close to 1,000 volunteers who carefully watched our loons, assisted our field staff, and worked to protect loons on the lakes. LPC’s work would not be possible without the caring and dedication of these outstanding people.

*~John H. Cooley, Jr., Harry Vogel,  
& Chris Conrod*

## *Rescues and Recoveries: Anatomy of a Loon Emergency*

A special attraction of biological fieldwork is the chance to work “up close and personal” with the species being studied. Invariably, LPC’s summer field biologists take the position because of the chance to spend a summer on the lakes observing loons in their natural habitat and learning the behavior and life history of these remarkable birds. On being promised during training that there will be many opportunities to handle loons, our novitiates’ faces light up in eager anticipation.

Reality, however, soon reveals the darker side of fieldwork. Often, this hands-on fieldwork involves working with sick, injured, or dead loons. Loon emergencies occur frequently but successful outcomes, sadly, are rare. Many of these emergencies culminate in the addition of another loon to LPC’s freezers to await necropsy. Of the 24 loons collected by LPC this past summer, only five were successfully released into their natural habitat. We dream of the perfect rescue and release, but often we must deal with the reality of euthanasia or recovery of carcasses.

There are two prime reasons for the less than stellar success rate of our attempts to save loons. First, we can’t respond to an emergency until we are aware of it. With 340 New Hampshire lakes capable of supporting loons, it can be three or four weeks between visits to any one lake. We become aware of the majority of loon emergencies through our volunteers and the general public, who may call directly or be referred to LPC by New Hampshire Fish and Game or New Hampshire Audubon. Once the presence of a dis-

tressed loon is reported, we make an assessment of the loon’s condition. Depending on the information supplied by the volunteer, this involves a visit to the lake by one of our biologists, who must evaluate our second challenge: Loons often display obvious signs of distress while still being fully capable of swimming and diving, and therefore evading capture. Any rescue efforts at this stage put additional stress on the loon and increase the probability of further injury. If we are fortunate, a volunteer can watch the loon and make periodic reports until we determine that it is able to be captured. Without the assistance of a watchful volunteer, daily visits are necessary, which means less time monitoring loons on our other lakes.

The capture process normally involves two people in order to restrain the loon to prevent further injury and to transport the bird. If the lake is distant from The Loon Center, this can tie up two biologists for the better part of a day. Again, we are beholden to volunteers who assist in captures by providing boats or serving as one of the handlers. Usually by the time we have a loon in the travel container we have a fair idea of the cause of the problem. A veterinarian is usually the first stop. Especially helpful this year in supplying free or low-cost services were Dr. Julie Dolan of North Sandwich Animal Hospital and veterinarians at the Plymouth Animal Hospital. We have three rehabilitators who will accept a convalescent loon whenever needed: Kappy Sprenger of Bridgeton, Maine, Elaine Conners Center for Wildlife in Madison, and Maria

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Colby, who runs Wings of Dawn in Henniker. Sadly, the majority of our rescued loons must be euthanized because their health has been irreversibly compromised from an ingested lead sinker or jig, or other issue. However, this is not the end of the story. A loon cadaver holds great value for helping us understand the health of the overall population (please see Michelle Kneeland's article, page 10).

It is worth the effort to save loons, even if the results of these attempts are often disappointing. An adult loon has made it past the age of highest mortality and has the potential of producing as many as 25 chicks during its lifetime. Each life saved contributes toward ensuring a viable loon population in New Hampshire. And besides, an ailing loon tugs at the heart of all who witness it. We can't stand by and watch without trying to help. We are dependent on and immensely grateful for all the volunteer help we receive.

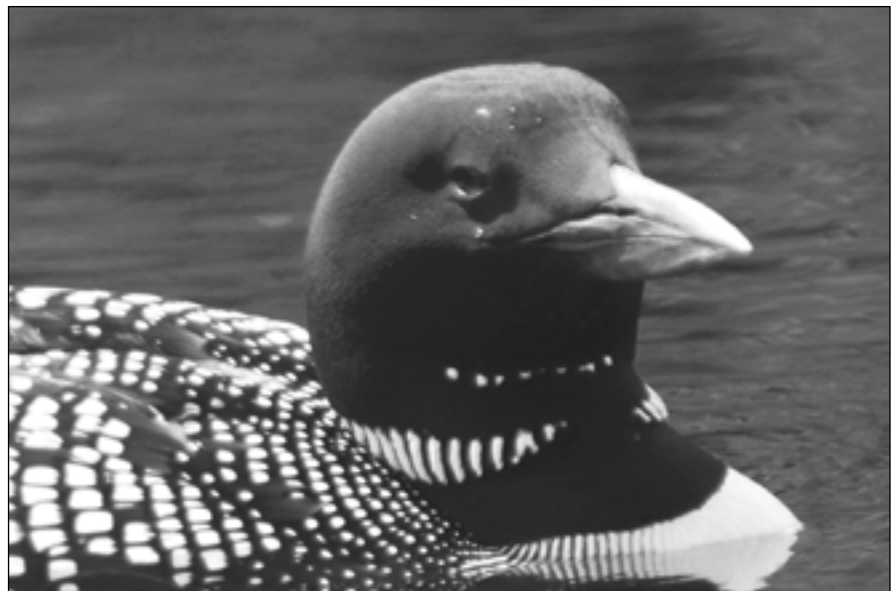
#### LEAD LOONS

It was an uneventful early season in terms of loon emergencies until Saturday, June 28, when Jay Aldrich of Marlow called to report a beached loon on Sand Pond. Field Program Coordinator Chris Conrod was on weekend standby and, with no other staff available, was forced to enter the world of loon rescues solo. Happily, it turned out that Jay was raised on a farm and she was very comfortable working with animals. Not only had she managed to scoop the ailing loon into a cardboard box but Jay offered to meet Chris at an intermediate point to help him transfer the loon from the soggy box into a fresh travel container. Later in the season, we called upon Jay once



*Above: The tiny bright object in this x-ray will kill the healthiest loon within two weeks of ingestion. Lead sinkers one ounce or less and lead jigs less than one inch long are banned in New Hampshire but they continue to be found in our lakes.*

*Below: This emaciated loon on Pleasant Lake was in the final days of its life when photographed in early July of this year. It became the third lead mortality of the season. Photo courtesy of Kittie Wilson.*



again to oversee a loon recovery near her house. Jay's willing and cheerful assistance saved many hours of LPC staff time.

Three days later, LPC biologist Emily Bastian responded to a report of a beached loon on Deering Reservoir. She was able to capture the loon with help from a lake resident and she brought the loon to Dr. George Messenger at Fisherville Animal Hospital in Concord. A radiograph revealed the presence of a fishing sinker in the gizzard. The loon was euthanized and brought to The Loon Center for a necropsy, which confirmed lead poisoning. The rescue took Emily away from her lake monitoring for an entire day. This is critical time, especially in the Monadnock Region, which is LPC's largest monitoring region in terms of numbers of loons and territories.

At the same time Emily was dealing with the Deering Reservoir loon, LPC volunteer Kittie Wilson began to notice that one of the loons on Pleasant Lake in New London appeared lethargic. This was a particularly heartrending case because the loon valiantly held on for a week, continuing to feed and moving around the lake, thus evading capture. Finally field biologists Chris Free and Todd Loffredo were able to net the loon with the help of Kittie and her husband as boat operators and guides. The loon died in transit to the veterinarian's office and a necropsy confirmed lead poisoning.

The occurrence of three lead poisonings in less than a week created quite a stir. The multiple occurrence of a needless cause of mortality is a strong motivator for those who witness it. Monadnock biologist Emily Bastian doubled her outreach efforts by posting more lead cautionary signs at public boat launches and gave a presentation in her region on

loon biology and lead poisoning. Kittie Wilson spearheaded a "Get the Lead Out" campaign through her local lake association. At last report, the campaign had reached over 500 lake residents and users in the New London area. As for the lead sinkers themselves, the ongoing efforts of Kittie and the Pleasant Lake Protective Association have resulted in the removal of five pounds of lead from tackle boxes and bait shop shelves since 2000; a remarkable and important contribution to the preservation of loons in New Hampshire.

#### SUCCESS STORIES

On some occasions, responding to loon emergencies can be a happy experience. One such case occurred this summer on White Pond in Ossipee. Sometime late in July a single adult loon dropped in for a visit, only to find a mated pair that was very protective of their chick. A scuffle ensued, which is not uncommon in such a situation, and the unpaired adult received a wing injury that prevented it from leaving the lake. The problem became apparent to nearby residents when they would occasionally notice the injured loon beached, sometimes up to 20 feet from the pond, cowering behind a bush or fallen log. After three or four rescue attempts where the loon would return to the pond before we could respond, Lakes Region biologist Chris Free captured the loon on August 5th. An examination re-

vealed no serious injuries and it was released on Ossipee Lake where there is enough area to recuperate in peace. At last check, it was doing well.

On August 14th, a call came in from the Lee Police Department reporting that an officer had found an injured loon on the side of the road. Field Program Coordinator Chris Conrod drove down to spring it out of jail (in this case a large cage kept in the garage). An examination revealed no injuries. The report of an injury was based on the officer's observation that the loon was having a difficult time getting about on dry land. An explanation that loons are birds of the water and the air, rather than dry land, cleared up that misunderstanding. How it came to be on the side of a busy town road can only be a matter of speculation because the weather was dry and sunny. It was unlikely that the loon mistook the pavement for water, which occasionally happens during storms. It was released on Wheelwright Pond, where it immediately began diving and then preening. If loons can display an expression of relief and contentment, this loon surely had that look. For all the frustration and disappointment we feel while performing too-late rescues and recoveries, the momentary bliss of a successful rescue and release makes it all worthwhile.

~Chris Conrod

Anything is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.

~Aldo Leopold

## *Coming Full Circle: What the death of a loon can teach us about the life of these amazing birds, and how we can better protect them.*

I guess you could say I know loons inside and out.

As a veterinary student concentrating on Wildlife and Conservation Medicine at Tufts Veterinary School, I spent this past summer working for LPC as their resident pathology intern. My main task for the summer: conduct necropsies (an animal autopsy) on deceased loons collected by LPC.

To many people, the idea of spending an entire summer dissecting dead things is, well, morbid and depressing. This is because death is usually seen as an endpoint. It's the termination of life, the permanent cessation of all biological function, and people usually don't like to talk about it, let alone study it. But performing necropsies allows the death of a loon to become not just a tragic endpoint, but instead an opportunity for unique insight into the lives of these awe-inspiring birds. The knowledge we gain through necropsies can then be directly employed to help conserve and protect the species as a whole.

While the ultimate goal of a necropsy is to determine a cause of death, this is only a small part of the story. When I am examining a loon, I try to look at the whole picture rather than just focusing on finding that one obvious ailment to blame for the death. In many ways, performing a necropsy is similar to a forensic investigation; by examining all the subtle clues in front of you, it is possible to reconstruct the life of that loon leading up to its death.

For example, carefully inspecting the feather condition, from the brilliant green-black iridescent neck feathers to the tips of those

long primary wing feathers, you can establish whether the bird had been struggling on land just prior to its death. By weighing the loon and observing the amount of fat within the body cavity, you can deduce whether the bird died suddenly or became incapacitated and slowly declined. By opening the digestive tract, you can learn where and how long ago the bird was feeding.

You can even learn something about a loon's individual behavior through a necropsy by the presence of "sternal punctures." These are literally holes or indentations in the cartilage of the loon's sternum that result from the stabbing of a rival loon's dagger-like bill during a dispute. While this sounds gruesome, these sternal punctures are generally not fatal. In fact, it is common for older birds to have several old healed sternal punctures. Some loons have none, while others have multiple punctures in varying stages of healing. This seems to indicate that some loons are scrappier by nature than others.

Sometimes the internal examination reveals an entire story that was hidden behind the black and white exterior. This was the case with a female loon that was found dead at Conway Lake on July 7. The bird had been lethargic for over a week prior to its death, and lead poisoning was suspected. But the plot thickened when a radiograph showed no ingested metal, and a blood lead test concluded that the bird had not been lead poisoned. Although emaciated, the bird appeared pretty normal on the outside. The necropsy, however, revealed a much different story. The internal exam revealed massive amounts

of hardened fibrin deposits within the chest cavity and the neck. Fibrin is a protein involved in blood clotting, so the presence of fibrin buildup indicates past internal trauma that has healed. This loon also had an old injury in her cervical vertebrae that left her neck literally kinked to one side and unable to be straightened. To top it all off, she also had a broken toe. It was apparent that this unlucky loon had undergone some serious trauma in the past (possibly a boat strike), but somehow survived and carried on for quite some time afterwards. The example of the Conway loon truly gives you respect for these loons and their ability to persevere in the face of pain and extreme physical impairment. Seeing cases like this really puts things into perspective, and makes your own everyday aches and pains seem trivial compared to what these animals can endure.

So what was the most common cause of death observed this summer? Unfortunately, lead poisoning remains the single biggest cause of adult loon mortality. Of the seven adult loons necropsied by mid-August, four were found to have lead poisoning as a result of ingested lead fishing gear. These four cases all occurred between June 25 and July 6, which not surprisingly corresponds exactly with the height of the fishing season. The most interesting of these four cases was a loon that was collected live from Deering Reservoir on June 30, and later euthanized when a radiograph revealed metal fishing gear in his gizzard. He was an absolutely stunning male, flawless breeding plumage with not one feather out of place and pristine

snowy white breast feathers. He was probably the healthiest, most robust looking loon I have ever examined. On the internal exam, the first thing that immediately jumped out at me was a hardened lump jutting out from his gizzard. This turned out to be a part of a fishing hook that had actually pierced the thick gizzard wall and then healed over without causing the loon any real problems. Upon opening the gizzard, I recovered not only the lead jighead responsible for his death, but also a non-lead fishing sinker. The fishing gear was measured, and as it turns out the lead jighead was of legal size according to the current NH law (greater than one inch including the hook). A blood lead test revealed that lead poisoning was indeed the cause of death, and not some other complication related to the hook or non-lead sinker. The sad irony of this example perfectly illustrates a key point: a hook will not kill a loon, a non-lead sinker will not kill a loon, but a lead-headed jig will kill a loon. It was the third strike that ultimately did him in.

The current New Hampshire lead fishing gear laws are a vital step in the right direction that came about as the result of data collected from loon necropsies over the past two decades. However, the Deering Reservoir loon serves as a testament to the fact that these measures to protect loons from lead poisoning need to be expanded if we want to eliminate the problem for good. Perhaps we need to take a wider view of the lead poisoning problem and realize the interconnectedness of wildlife health and human health. Loons can serve as sentinels of human health in this case; seeing a perfectly healthy adult loon perish because it accidentally ingested a piece of lead the size of a sunflower seed



*Michelle Kneeland performs an on-site necropsy at The Loon Center.*

really makes you appreciate the potent toxicity of this metal that is being sold so readily to the public. Phasing out the use of lead fishing gear completely would help protect human health as well as loon health.

Loons are truly captivating birds. They have the ability to transcend the human/animal boundary and evoke deep emotion within the hearts of those who are lucky enough to encoun-

ter them. Necropsies can serve as an important part of our total understanding of loon health and conservation. In this way, the death of one loon can help protect the lives of countless others, and everything comes full circle.

*~Michelle R. Kneeland, B.S.  
D.V.M. Class of 2012  
Tufts University Cummings  
School of Veterinary Medicine*



*LPC Welcomes Three New Board Members*

The Loon Preservation Committee has been fortunate in attracting the attention of three community and business leaders willing to help loons by volunteering their time and expertise on LPC's Board. **Bill Irwin**, Vice President and Sales Manager at Irwin Marine in Laconia, comes from a family with strong ties to LPC. Bill's mother Jane was involved with LPC from its earliest days as a strong advocate and protector of loons on Lake Winnepesaukee. Jane was instrumental in recruiting volunteers to watch over loon families. It seems fitting to have Bill join LPC's Board, and he brings good business sense and strong community ties to benefit LPC's work to preserve loons. Bill lives in Meredith, NH, and is the father of two boys, Hale and Lee. He has coached soccer, alpine skiing and baseball, and sits on the boards of Easter Seals, the Inter-Lakes Athletic Committee, and the Gunstock Ski Club. He is a graduate of Saint Anselm College. Bill has been impressed with the passion that he has seen among LPC Board members for the mission and the organization.

**Nancy Christie** is a life-long lover of loons, and has long admired and appreciated the research, educational and conservation work of the Loon Preservation Committee. That is saying something because Nancy has 35 years of experience working for non-profit environmental organizations as an administrator, program director, grant writer, educator, curriculum developer, and adjunct college faculty member. Many of LPC's staff and Board members worked closely with Nancy when she was President of the New Hampshire Lakes Association, and she sits on the



*Bill Irwin*

Pittsfield Conservation Commission and the New Hampshire Water Council. Nancy is a graduate of the Antioch/New England Graduate School and lives with her husband in Pittsfield. She is looking forward to serving on the Board to help further LPC's important mission, and her in-depth understanding of ecology and environmental issues, and administrative and fundraising experience, will make her an invaluable addition to LPC's Board.

**David Ries** (not pictured) has replaced Tupper Kinder on the LPC Board as an ex-officio member representing the Audubon Society of New Hampshire. David



*Nancy Christie*

is a retired lawyer and a graduate of Harvard College and Harvard Law School. He and his wife have for many years maintained a hillside farm in Warner, NH, with enough acreage to support an active wildlife population.

These are challenging times for our environment and for non-profit organizations. LPC is thankful that it can continue to benefit from the wisdom of thoughtful and motivated leaders like Bill, Nancy and David, and all of our Board members that continue to devote large amounts of time and energy to its mission.

*~Harry Vogel*

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## LOON PRESERVATION COMMITTEE ACTIVITIES

### *Gala Luncheon & Loon Festival Kick Off Summer Events*

The 2008 Gala Luncheon was held at Castle in the Clouds this past June. LPC's summer biologists, sponsored by two Board members, cleaned themselves up nicely and joined the party, circulating among the guests. Dr. Mark Pokras of Tufts University School of Veterinarian Medicine talked to the gathering about the remarkable success of the LPC/Tufts collaboration, encouraging sound environmental policy through science and legislation. He also touched upon some of the challenges faced by wildlife due to global warming and other environmental changes of the modern age. The Silent Auction, with generous donations from area businesses and residents, was the usual good source of funding to help LPC pursue its mission.

More than just a source of income, the Gala is a time for LPC members, all of whom have a love of loons in common, to get together, share a meal and socialize. Many, many thanks to the Events Committee members who worked tirelessly to make it all possible: Phyllis Prouty, Barbara Putnam, Lydia Torr, Terry Wetzler-Finn and Laurie Whitley. This group has been working together for several years now. They seem to have event planning down to a science, while thoroughly enjoying themselves in the process. The results of their efforts speak for themselves.



~Alisoun Hodges

The Annual Loon Festival was held at The Loon Center on July 19th, between days of heavy, summer downpours. There must be a loon-loving angel watching over us because in the 31 years of Loon Festivals, the rain has stayed away for the actual event.

Coming back for the 6th year was the ever popular Mr. Phil, Balloon-ologist Extraordinaire. His lively banter had everyone laughing, and his balloon creations brought delighted smiles to everyone's faces. He was joined again this year by his talented wife, Cedar, who does amazing face painting. New this year was the full face loon (pictured).

Linda Johnson masterminded creative loon crafts for all the kids, and volunteer Cynthia Robinson organized a Loon Fact Finding game with prizes for kids who found all the facts hidden on the Markus Trail. It was a big hit, even though participants had to do battle with the mosquitos.

The Squam Lakes Natural Science Center brought animals from both land and air - a wood turtle and a tiny Saw-whet Owl, as well as a Discovery Table full of interesting artifacts such as skulls and pelts. LPC biologists gave slide presentations to all who wanted to learn a bit more about loons in New Hampshire.

Good eats were cooked and served by the tireless members of the Meredith Rotary. The Ben & Jerry's ice cream was very much appreciated on this warm, summer day.

We owe the success of this 31st Loon Festival to the many volunteers, exhibitors and entertainers who generously give their time and talents. Thank you!

~Rachel Williams



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In memory of Robert D. Parsons  
from Carolyn Parsons

In memory of Ken Sorlien  
from the Sorlien Family

## Rawson Wood Celebrates 100th Birthday

LPC had the privilege of hosting a very special event this past summer, the 100th birthday celebration of its founder, Rawson L. Wood. Guests and friends, including former LPC Directors Scott Sutcliffe and Jeff Fair, and North American Loon Fund Trustee Judith McIntyre, traveled from afar for the opportunity to honor and spend an afternoon with this very special gentleman.

Born on September 16, 1908, Rawson attended St. George's School and Harvard University and took over his family's business upon graduation. Throughout his life he worked for causes having to do with social justice and preserving nature. In 1975, concerned with the lack of loons on Squam Lake where he and his family had summered for many years, Rawson started the Loon Preservation Committee. Since then, with his support and guidance, the organization's work has become statewide and the loon population has more than doubled.

More than a Lakes Region celebrity, Rawson's contributions are recognized throughout and beyond the loon community. At his birthday party, Rawson was presented with a proclamation from Governor Lynch of New Hampshire in honor of his achievements and his 100th birthday, and special citations from the New Hampshire Senate and the U.S. Fish and Wildlife Service. In Rawson's honor, the Board of the Loon Preservation Committee established the Spirit of the Loon Award, to be presented to an individual who exemplifies outstanding volunteer service to loons and the Loon Preservation Committee. Rawson was recognized as the first recipient of the award.

The Loon Preservation Committee is pleased and honored to have been able to acknowledge Rawson's longevity and his outstanding contributions to loon preservation. His is truly a life well lived.

~Alisoun Hodges

## LPC Annual Meeting

The Loon Preservation Committee held its second annual meeting at The Loon Center in Moultonborough on Thursday, August 28th. A slide presentation on the loons on Lake Massabesic was given by noted New Hampshire wildlife photographer John Rockwood. Harry Vogel presented preliminary results of the Loon Preservation Committee's monitoring, research, management and educational programs and commented on the significance of some of the recent trends observed in New Hampshire's loon population (please see a full report on pages 3 to 7 of this LPC Newsletter).

The following slate of LPC officers was presented for ratification by LPC members and was unanimously approved: The Honorable Carl R. Johnson, Chair; John E. Schoenbauer, First Vice Chair; Peter C. Sorlien, Second Vice Chair; John W. Lanier, Technical Vice Chair; Lydia M. Torr, Secretary; Jordan S. Prouty, Treasurer. LPC also welcomed new Board member Bill Irwin at the meeting.

Bill Crangle, Chair of LPC's Finance Committee, reported that LPC was fiscally sound and operationally would end the fiscal year in the black. The meeting ended with an expression of thanks to Board members for their many contributions to a successful year, programmatically and financially, for LPC.

~Harry Vogel

Photo courtesy of Mark Wilson



Rawson Wood blows out his birthday candles while guests look on.



## 4th Annual Benefit Golf Tournament

The mid-August day dawned bright and sunny, a gem of a day especially by last summer's standards. Golfers arrived right on time for LPC's Fourth Annual Benefit Golf Tournament at Ridgewood Country Club. We were honored to have both Bill Monbouquette and Luis Tiant join us for the morning. Tiant was filling in for Bob Tewksbury who was sadly unable to attend because of a death in the family. Two teams were tied for first, and the ultimate winner had to be determined by a chip-off. As it turned out, Monbouquette and Tiant's foursome took first place!

No one won the car donated by Tilton AutoServ, with help from the NH Automobile Dealers Association, for a hole in one on the 10th hole, but prizes were awarded for men's and women's closest to the pin and longest drive.

For four years now, The Honorable Carl Johnson has been organizing the annual golf tournament. We have a steady following of players who love the event, many of whom travel from the southern part of the state to enjoy golfing at Ridgewood. In addition to golf, the players give generously to the raffle. We are most grateful to the players for their support, as well as the many businesses that donated raffle prizes.

Always a good moneymaker for LPC, this year's tournament netted over \$12,000 to help preserve loons and their habitats in New Hampshire. Thanks to all our donors, players, sponsors and volunteers, including Scott Griffin, Tim Johnson, Joe Kabat, Jordan Prouty, Laurie Whitley and, of course, The Honorable Carl Johnson for a pleasant and productive day.

~Alisoun Hodges



The Honorable Carl Johnson (center) is pictured with the winning foursome: Garrett Plifka, Luis Tiant, Stan Plifka and Bill Monbouquette.

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Many thanks!



Photo courtesy of Kevin Warren

[www.kevinwarrenphotography.com](http://www.kevinwarrenphotography.com)

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