

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

SUMMER 2016

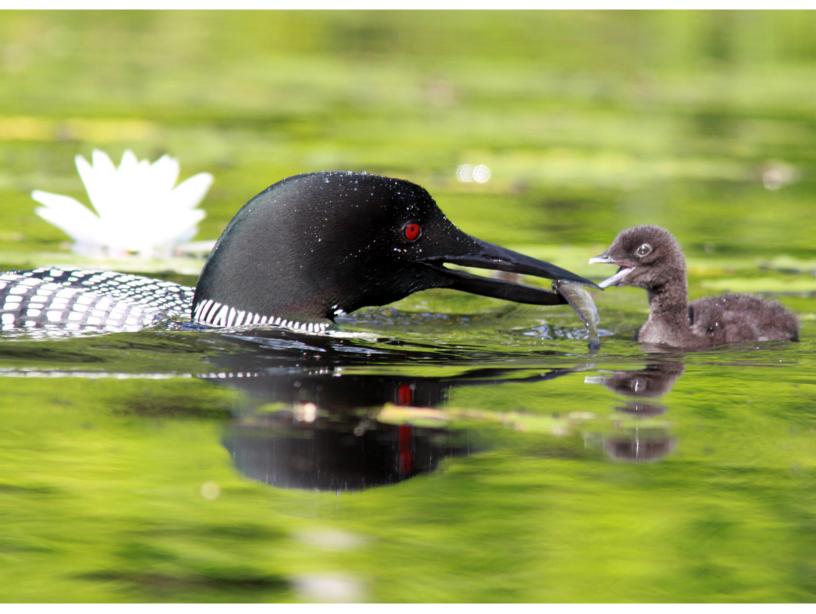


Photo Courtesy of John Rockwood

#### *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 organization affiliated with New Hampshire Audubon. Autonomous in membership and fundraising, LPC works to preserve loons and their habitats in New Hampshire through monitoring, research, management and education.

#### LPC Staff:

Harry S. Vogel Senior Biologist/Executive Director Susie E. Burbidge Outreach/Volunteer Coordinator John H. Cooley, Jr. Senior Biologist Kellee A. Duckworth Center Manager Tiffany J. Grade Squam Lake Project Biologist Holly M. Heath Membership/Center Assistant **Caroline Hughes** Field Program Coordinator Linda Egli Johnson Special Assistant/Newsletter Coordinator Lin L. O'Bara Development Coordinator Joan M. Plevich Database Technician Bette J. Ruyffelaert Center Assistant

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# DIRECTOR'S MESSAGE

# Loons and Heat and Rain and Malaria

The loon brought down by Avian Malaria in New Hampshire last summer garnered a lot of attention in the press this winter. Her fate was first reported in the fall 2015 *LPC Newsletter* but her story did not hit the news until it was picked up in March by Derrick Jackson of the Boston Globe. This unfortunate bird was newsworthy because she was the first loon anywhere in the northeast known to have been killed by this tropical disease – especially troubling because she met her demise on Lake Umbagog, north of the notches and a place we at LPC had considered a safe haven, at least for a time, from the effects of a warming climate.

That disturbing finding was followed by another recordwarm winter and areas of open water on many of our lakes. A number of loons stayed on that open water too long, until well into the flightless period of their winter wing feather molt. The eventual freeze-in of those lakes found these loons unable to escape the encroaching ice. That situation has happened before in New Hampshire, notably the balmy winter of 2007 when we lost 17 loons to a late freeze-in. This time, happily, the story had a very different ending – 9 iced-in loons were able to be rescued by the quick actions of LPC's active volunteer network and professional, well-equipped staff. This winter's rescues were a fine example of how the many elements of LPC's comprehensive conservation work complement each other to achieve good outcomes for our loons.

These and other concerning signs of changing conditions in New Hampshire prompted LPC to launch a major new study to assess the effects of a warmer and wetter climate on loon breeding success. LPC is uniquely able to do this research because we have been measuring breeding success of loons for over 40 years, over a wide range of temperatures and rainfall amounts. To that end we are collaborating with Plymouth State University to compare loon nest outcomes – 5,422 nest outcomes over the past 40 years – with half a million weather data points collected from 100 weather stations throughout the state, to determine how average temperatures, heat waves, average rainfalls and storm events, among other factors, affect nest success. A careful analysis of a dataset this massive will take some time, but it is work that needs doing, and LPC is the only organization that can do it.

Even as we celebrated a major milestone for loons with the implementation, on June 1st, of more protective standards for lead fishing tackle, these recent events have made us more acutely aware of new and bigger challenges for our loons. All of this is work that you, our friends and supporters, have helped make happen through your observations and your donations. Your continued watchfulness will allow us to track the effectiveness of the new lead legislation and help us assess other consequences of an increasingly tropical climate in New Hampshire.

Harry

### LPC AFIELD

# A Good Day for Loons

une 1st of this year was a good day for loons – it was the day that Senate Bill 89, passed in 2013 to restrict the sale and use of all lead sinkers and jigs weighing an ounce or less, was finally enacted in New Hampshire. It has been a long struggle – over 40 years – to secure these protections for our loons. From the first recorded loon mortality from ingested lead tackle in 1976, LPC began working to make anglers and the public aware of this issue. As much as we worked to spread the message, when purchasing tackle anglers found they had few choices - lead is cheap and has a higher profit margin than alternatives, and so lead, and little else, was on store shelves. After years of education through programs, press releases and other means, and no drop in loon mortalities from ingested tackle, we realized that a comprehensive solution including legislation to restrict the sale and use of these toxic sinkers and jigs was needed.

In 1998, Loon Preservation Committee Trustee, Senator Carl Johnson, and Representative Jeb Bradley co-sponsored a bill to restrict the sale and freshwater use of lead sinkers and lead-headed jigs in New Hampshire. Strong opposition resulted in a final bill that restricted only the *use of* lead sinkers an ounce or less in weight, and lead-headed jigs less than an inch in total length, on lakes in New Hampshire. Though we had not achieved everything we had set out to do, it was an important step that made New Hampshire the first state in the nation to restrict the use of any type of lead tackle. In subsequent years continued efforts resulted in followup legislation that expanded restrictions on use to all freshwater in the state and also restricted the sale of lead tackle. However, a large loophole remained that allowed larger lead-headed jigs, still deadly to loons, to continue being sold and used. Rates of loon mortality from lead tackle fell slightly, but not enough to protect New Hampshire's loons. Senate Bill 89 sought to close this lethal loophole by expanding restrictions on sale and use to include these larger lead-headed jigs, up to an ounce in weight. It is this law which went into effect on June 1st.

The work to discover, research, and mitigate this cause of death was truly a grassroots effort by an eclectic assemblage of concerned citizens - from LPC volunteers and staff who picked up sick or dead loons, to veterinarian Mark Pokras who necropsied 3,000 loons to report the causes of their deaths, to Carl Johnson, Jeb Bradley, and other legislators who initially brought the issue to the attention of the New Hampshire House and Senate. Senate Bill 89, the most recent and comprehensive push to finally arrive at a truly protective measure for loons, was enabled by LPC's own Tiffany Grade who made this topic the subject of her Master of Science Thesis, Senator Jeanie Forrester who introduced the bill and led a large bipartisan coalition of co-sponsors, Sheridan Brown who helped mobilize support among the public and New Hampshire legislators, and the overwhelming support of friends of loons who flooded legislators' inboxes, phones, and hearing rooms in support of loons. NH LAKES, NH Audubon and other collaborators mobilized their memberships and weighed in at hearings to emphasize the importance of

loons and the critical need to protect them. It was a massive undertaking, and the end result was worth the effort – this law will help avoid the painful and inhumane deaths of many loons in the coming years and will help New Hampshire's loons cope with the new challenges we know are coming.

Of course it is one thing to have a law on the books, and another to have that law be known and followed. If you know an angler, or frequent a store that sells fishing tackle, please gently remind them of this new law and its importance to loons. And remind them, too, that these measures will protect more than loons; over two dozen species populate the sad list of wildlife that have experienced mortality as a result of ingested lead sinkers or lead-headed fishing jigs. In this, as in so many other ways, loons are indicators of environmental challenges, and LPC's work will continue to safeguard lake ecosystems and the many species of wildlife that live in, on, and around them.

~Harry Vogel



# What's New at NELSWG?

The 27th annual gathering of L the Northeast Loon Study Working Group (NELSWG) met in March at LPC, with over thirty participants from throughout New England. Diverse topics mixed works in progress and in-depth findings. For example, Adirondack researchers presented extensive loon nest site disturbance by humans captured during three years of game camera use, and also described the refinements needed for future camera placements that will take full advantage of the technology. Maine Audubon's Susan Gallo outlined shoreline habitat protection and citizen science phenology projects, **BioDiversity Research Institute** (BRI) staff described monitoring and research from Wyoming to Massachusetts, BRI's Jim Paruk presented a close photo record of winter plumage and molting in immature and adult loons, and



Participants at the 2016 Northeast Loon Study Work Group held at The Loon Center included representatives from: Adirondack Center for Loon Conservation, Antioch New England, Biodiversity Research Institute, Center for Wildlife, Chapman University, Environmental Protection Agency, Loon Preservation Committee, Maine Audubon, Maine Department of Inland Fisheries & Wildlife, Massachusetts Department of Conservation & Recreation, Massachusetts Division of Fisheries & Wildlife, Smithsonian Conservation Biology Institute, Tufts University, US Fish & Wildlife Service, University of Massachusetts, University of New Hampshire, University of Southern Maine, and the Vermont Center for Ecostudies.



Numerous puncture wounds in the sternum of a Common Loon are the result of fights with other loons.

research into winter behavior on the New England coast. LPC's progress and findings from nonlead tackle outreach and ongoing investigations on Squam Lake, the demographic analysis of lead mortality impacts, and of climate impacts on nesting loons were covered. From the veterinary school at Tufts, a fascinating analysis by Amanda Higgins of sternal puncture wounds received from other loons in territorial conflicts showed that female loons were at least as likely to have received a puncture wound as males.

A final example of NELSWG's mix of anecdote and analysis, Walter Piper's Wisconsin Loon Project findings on senescence and survival struck a chord with loon watchers on Northwood Lake here in New Hampshire.

"The Angry Old East End Loon" might sound like a bad movie, but it's become the nickname for a male loon on Northwood Lake. Northwood loon watchers swear they've watched this loon get crankier and crankier in recent years, fending off mergansers, other loons, innocent human bystanders, and would-be swimmers with a brashness seldom rivaled in loon lore. And then this spring as loons returned and pairs formed on the lake the angry loon was gone, replaced by an unbanded newcomer. The demise or displacement of the East End loon on Northwood after years of bad temper was a perfect case study for Walter's NELSWG talk. His long-term study of banded loons has found that older male loons (>15 years), with diminished prospects for regaining their ter-

# Winter Rescues, Releases, and Mortalities

ritory if they are displaced, show a greater willingness to defend it to the bitter end. They are more overtly aggressive, and have a significantly lower survival rate than their female counterparts. Walter's findings explain what Northwood loon watchers have heard and seen firsthand. The fierce yodel calls that rang out over Northwood Lake in the last few summers were probably the sounds of an older male making one last stand.

#### ~John H. Cooley

Photo Courtesy of Martin Kimbell



Skate sailor Lee Spiller was among the group of skaters who discovered the loon trapped in the ice between Ellacoya State Park and Locke Island on Lake Winnipesaukee in February. Spiller had made a similar rescue on Squam Lake in December 2013.

total of fourteen loons were rescued or recovered from seven New Hampshire lakes last winter, after record warmth delayed ice-in. The unusual ice conditions set the stage for a wave of loon strandings on New Hampshire's bigger waterbodies, and similar scenes played out on Vermont's Lake Champlain and in the Adirondacks. Loons that fail to migrate by late

December or early January may be trapped as they enter their mid-winter wing molt, a period of about a month when they are flightless and unable to migrate while their flight feathers grow. Virtually all of the winter strandings were of flightless loons. We



The rescue team on Lake Sunapee: Jamie Hess, Lisa Putnam, Linda Howes, Wendy Anderson, and LPC Seniot Biologist, John Cooley.

also found that several were suffering from lead poisoning, which must have been the original problem that caused them to stay too long on the lake.

As the reports of stranded loons continued to accumulate *continued on page 6* 



The loon (above) rescued on Lake Winnipesaukee by skate sailors Lee Spiller, Rudy Meyers, and Martin Kimbell, was originally banded in 1999 at Buzzell's Cove, making it 20+ years old. The skaters who rescued this loon know the skaters who helped in the Sunapee rescue, a small community who have been really helpful this year and in the past.

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during January and February, we were inspired by a hardy network of Nordic skaters, ice-sailors, cooperating state agency staff, and members of the public who reported the loons and kept tabs on them. The veterinarians and rehabilitators on the receiving end of this mounting number of rescues were unflagging in their willingness to transport and treat them.

Loon rescue and rehabilitation is often unsuccessful. The survival of loons that are released is hard to track, although this winter's crop was banded and we will be keeping a sharp eye out for their return. One success that we are able to document as we go to press comes from Martin Meadow Pond, in northern New Hampshire, where a loon that was rescued from the ice (and treated for a mild case of lead poisoning) in December 2014 has returned to breed successfully, hatching two chicks in mid-Iune. In this one case, at least, the rescue and treatment and travail for the loon has paid off!



A loon rescued from the ice and treated for mild lead poisoning at Avian Haven back in 2014 has returned to breed successfully at Martin Meadow Pond this year, hatching two chicks in mid-June.

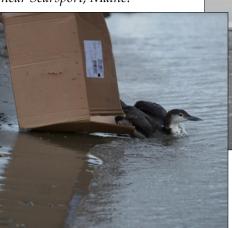
winter loon rescue can be hazardous work and human **A**safety is of utmost importance. The Loon Preservation Committee extends its sincerest thanks to Loon Recovery Plan donors for funding the purchase of a winter rescue suit. It was put to good use this winter rescuing loons stranded in the ice throughout the state.

~John H. Cooley

After an overnight stay in a pool at Avian Haven Wild Bird Rehabilitation Center in Freedom, Maine, four of the five loons rescued on Lake Sunapee were released on Penobscot Bay near Searsport, Maine.



Photo Courtesy of Avian Haven





LPC Senior Biologist, John Cooley, captures one of the five loons trapped in the ice on Lake Sunapee in late January. In addition to a boat and net, Cooley was equipped with a rescue suit, ice awls and axe, and flotation devices.

# Spotlight On a Lake: Massabesic Lake

suppose every New Hampshire Llake has its own distinctive character but in my eight years of chasing loons around the state Massabesic Lake stands out in my mind as being unique. For a starter, it's over 2,500 acres (how much over depends on whether you're asking NH Department of Environmental Services or NH Fish and Game Department) on the edge of New Hampshire's largest city, yet over 90% of the shoreline is undeveloped. The reason for this is that Massabesic is the main water supply for the city of Manchester.

Manchester's desire to protect its water supply, combined with the fact that most of the lake is in the town of Auburn, has added to Massabesic's uniqueness. The Manchester portion of the lake is off limits to the public but the Auburn portion has restrictions apparently born of compromise: you can fish from the shore, you can even launch a boat (there are three public boat launches on the Auburn side), but don't you dare touch the water! At least not directly, even if you wash your hands before going to the lake. And don't cross the town line that runs down the western arm of the lake, marked by a mile and a half long parade of warning buoys. So, with the exclusion of "active" water sports, the primary uses are kayaking and bass fishing. The result is a seemingly pristine system of bays, coves and islands that sees light to moderate boat activity. Just don't go there on the weekend of July 4th. Trust me on that one.

Sounds like a nice place for loons, doesn't it? And when we check the water quality and see that it supports cold water fish, has high clarity and low chlorophyll and phosphorous, it's not surprising that LPC has identified eight loon territories on Massabesic. When we add in a few unpaired adults and occasional visitors, it's not unheard of to see as many as twenty loons on the lake at any given time.

But it hasn't always been that way. During the 1970s, when LPC began monitoring New Hampshire's loon population, in a typical year there would be two or three loon pairs on Massabesic, producing one or occasionally two chicks surviving at the end of the season. There was little change until the late '80s, at the start of a decade-long population growth spurt, throughout which the surviving chick count averaged just over three per year, regardless of how many loon pairs were on the lake. By 2001, the population had peaked at seven

adult pairs and, since then, the number of surviving chicks on the lake has dropped to an average of two per year. More loons and fewer chicks; What's up with that?

This paradox of larger populations producing fewer chicks is not unique to Massabesic loons. In fact, it is increasingly symptomatic of the larger lakes with multiple loon territories. On first glance, ecologists might whip out one of their favorite techno-jargon terms: "density-dependent phenomenon." Simply stated, this just means that long-lived, larger animals that invest a lot of time and energy raising a small brood will self-regulate productivity (the number of chicks hatched) and avoid overpopulating the available habitat. It's not meant to indicate a conscious decision; it's based more on the increased continued on page 8



This Google Earth image of Lake Massabesic shows its proximity to urban Manchester. Although most of the lake is in Auburn, the Manchester portion is the city's water supply and off limits to the public. The lake is home to eight loon territories.

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investment of time and energy needed to defend a territory and forage for food when you have more loons competing for the available resources.

So, is this what's happening on Massabesic? Maybe, but it's not that simple. We would not expect a population of loons to produce fewer chicks than are needed to sustain the population in the long term. The average over the past 15 years on Massabesic has been 0.34 chicks surviving per territorial pair. That's barely more than two thirds of the rate needed to maintain the population. There must be something else going on here. We have a few candidates.

Contaminants. A plethora of contaminants found in our lakes may affect hormonal and neurological function in animals. A prime suspect for Massabesic is mercury. Massabesic Lake is in New Hampshire's hot spot for mercury contamination. Not only is New Hampshire downwind from the industrial Midwest, but southeastern New Hampshire is in the deposition plume of power plants in the Merrimack River valley. Even a small effect on neurological function could reduce a loon's nesting and parenting ability. Blood mercury levels measured in loons on Massabesic over the past two decades have usually ranged from 2-4 ppm (ug/g,wet weight), approaching or exceeding the 3 ppm threshold for observed adverse effects. These high levels make Massabesic an important site for tracking the impact of mercury and the benefits of mercury-reducing smokestack "scrubbers" and other controls at local point sources.

Water Level Fluctuation. LPC has a good relationship with New Hampshire's dam operators including the City of Manches-







*Nesting loons occupy a diverse range of habitats on Lake Massabesic. From top to bottom: A scrape on a sandy beach; shoreline bowl; grassy marsh.* 

ter's public water works. But in maintaining a steady water level for nesting loons, the Water Works operators have their hands tied, to some extent. They are responsible for supplying water to a population of 160,000, along with all the businesses in the area. Regardless of how much precipitation falls, each day 17 million gallons are pumped out of Massabesic by the Water Works. As you might expect, Massabesic's loons have a higher rate of nest failure due to water level drop than the statewide average. LPC has tried nesting rafts on four territories. To date, the loons have refused to use them.

#### Extreme Southern Edge of Breeding

*Range.* Massabesic is one of the eight most extreme southern loon lakes in New Hampshire. When we compare the loon productivity of these lakes with the few loon lakes in Massachusetts (the ultimate edge of the current breeding range for loons), we get similar values in the mid 0.30s, significantly below population sustainability. One explanation for this is

that the further south you go, the greater the development density. Not only is development along lake shores detrimental to loon habitat, it has also been shown that development in the surrounding area can affect habitat suitability. Massabesic has major highways and high density development surrounding it. Another concern is climate. Is Massabesic's climate simply too warm to support a productive loon population? Or is it beginning to get too warm? LPC is in the middle of a research project that should shed light on this question. Stay tuned.

And then there are other sources of stress that are common to many lakes throughout the state. Even on the Auburn side of Massabesic there are two sizable areas off limits to the public due to infestation of two exotic, invasive species: variable milfoil and fanwort. These plants overtake shallow water that could otherwise be valuable loon foraging habitat. Also, even though recreational use is restricted on Massabesic, we can't rule out human



*A raft of loons congregate on Lake Massabesic. Rafting is common on larger lakes in late summer and fall, prior to migration.* 

disturbance as a source of stress on the loons. Bass fishermen and kayakers are the two groups of lake users who are most likely to closely approach nesting loons.

Massabesic Lake can be a joy to visit. It is a beautiful gem in a jungle of suburban sprawl. It can also be a daunting task for a field biologist to kayak. It can be a tough lake to survey and we only manage to get a motorboat down there two or three times each season. We are deeply indebted to some fine volunteers who help keep us aware of what's going on. On any given day mid-summer, as many as four professional or dedicated amateur wildlife photographers may be stationed on a given loon territory with giant zoom lenses, waiting at a respectful distance to capture a good shot of the brooding loons. John Rockwood is our go-to man on band readings and nesting dates (lots of banded loons on Massabesic as a result of the mercury study). Other photographers, including Jamie Pringle, Peter Broom, and Mark Wilson, have helped capture band readings and breeding activity, and maintained nest rafts and signs. Photographer Lucinda Boutin has also adopted the lake and its loons. The July loon census, relying on the help of Massabesic Audubon Center staff, is another good source of information on the lake. With color bands identifying over half of the breeding loons and this hardy crew of loon watchers, we are able to follow the lives of Massabesic's loons in amazing detail.

So next time you go to the "Big City," bring your kayak. Do some shopping, visit the historic mills, and then unwind with a leisurely paddle on a pristine loon lake. We'll do our best to keep the loons there.

~Chris Conrod

# 2016 LPC SUMMER FIELD STAFF

#### LAKES REGION



LINDSAY MOULTON

#### MONADNOCK



JAC KJELLBERG

#### Lindsay is a recent graduate of the University of New Hampshire with a BA in Zoology. She interned with the joint UNH/Cornell Ornithology research team studying Herring Gulls at the Shoals Marine Lab on Appledore Island, which included banding, collecting blood samples and daily nest checks.

Jac has a life-long interest in

ornithology as an avid birder and reader of books about birds

since childhood. Jac hopes to

gain valuable experience at LPC

in loon conservation techniques,

banding, and research to sup-

port conservation biology gradu-

ate studies at Antioch Univer-

sity in the fall.

#### SEACOAST



ELLIE DANIELS

#### **SUNAPEE**



ETHAN GORMAN

#### WINNIPESAUKEE



JAMES DEMERS

on Squam Lake. An advanced studies program in ecology at St. Paul's School further piqued his interest. As a sophomore at Middlebury College, he is eager to pursue a degree in Environmental Studies.

Ellie is pursuing a MS in Wildlife

and Conservation Biology from

the University of New Hamp-

shire. She holds dual degrees

in Environmental Biology and

Studio Arts from Beloit College.

She combines her interests in

natural resources and art by de-

signing original graphics, imaging work and promotional material.

Ethan was first introduced to loons during family vacations

at Rockywold-Deephaven Camps

NORTH COUNTRY



HEATHER MEADER

#### Heather hopes to put her dual majors in Wildlife Conservation Biology and Justice Studies at the University of New Hampshire towards a career as a Conservation Officer. She gained crucial field experience with New Hampshire Fish & Game conducting wildlife surveys with hunters at deer check stations.

# SUMMER INTERN



SABRINA TEDESCHI

James is no stranger to Lake Winnipesaukee having spent summers on the lake observing neighboring loons. Loon preservation is a cause near and dear to his heart, and navigating the big lake is second nature. A student at the University of Deleware, James is pursuing a degree in Marine Biology.

Sabrina is a student at Wheaton College majoring in Biology

and Secondary Education. She

has long admired loons and as

# SUMMER INTERN



ISABEL BRINTNALL

Isabel continues her work as a loon field biologist-at-large in the Sunapee and Monadnock regions as she puts the finishing touches on her investigation of loon behavioral responses to human activity near nests and brooding areas, her Master's thesis at Antioch University New England in Keene.

a docent at the Squam Lakes Natural Science Center became more aquainted with their behaviors and lake habitats. She is eager to further broaden her knowledge at LPC this summer.

#### The SQUAM LAKE territory is monitored by Tiffany Grade, LPC's full-time Squam Lake Project Biologist.

# Tufts Intern, Travis Grodkiewicz

Travis attended Tufts University where he majored in Quantitative Economics and minored in Film Studies. He always had a passion for animals and recently completed his first year at the Cummings School of Veterinary Medicine at Tufts University. At LPC he'll be helping band loons, perform necropsies, and support field staff. He is thrilled by the opportunity to aid LPC in its preservation and research efforts, and is amazed by the group of people LPC has brought together, from their staff to their network of amazing volunteers.

In his free time, Travis enjoys swimming, running and hiking. He can't wait to take full advantage of a summer here in New Hampshire!

# LPC Welcomes Caroline Hughes, Field Program Coordinator

The Loon Preservation Committee is pleased to welcome Caroline Hughes as seasonal Field Program Coordinator. Caroline first became aware of the plight of the loon in New Hampshire while working as a Conservation Intern and then Manager for the Squam Lakes Association (SLA). She was impressed with the work of the Loon Preservation Committee and eager to assist in protecting this iconic species.

Caroline is a recent graduate of the College of Holy Cross where she earned a BA in Environmental Studies. She spent the spring of 2014 studying abroad at the School for Field Studies in Bocas del Toro, Panama,





where she gained valuable field experience. While working at SLA, she managed a team of eight conservation interns and served as the organization's Lake Host point person, collecting and conveying relevant paperwork on invasive species prevention efforts to the New Hampshire Lakes Association. Caroline spent the past six months as a Field Organizer for the League of Conservation Voters. Prior to that she served as a Development Intern for the Blue Ocean Society.

Needless to say, Caroline brings a wealth of experience and energy to her new role at LPC. She will work closely with Senior Biologist, John Cooley, to keep the field program running smoothly while helping oversee the summer crew and their needs.

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

THANK YOU!



# Behind the scenes with loons, thanks to nest cameras!

1:15 PM, June 28th, 2014: Two newly-hatched loon chicks leave the nest to embark on the adventure of growing up on Squam Lake. A nest camera captures the moment they slide off the nest and swim away.

But the camera also captures all the moments of difficulty and danger that threaten the nest before this happy moment. By training an eye on the nest 24/7, nest cameras help us better understand the threats facing loons before and during the nesting period – and, ultimately, what we can do to help ensure loon nesting success. Let's follow one pair of loons on Squam Lake during the nesting season through the eye of the camera!

# 2014-06-01 7:45:00 AM

HC600 HYPERFIRE

6/1/2014: Pre-nesting is a critical time for loons, as they look for potential nest sites and ensure that the places they are considering will provide everything they need to hatch their eggs, including safety, quiet, and protection from disturbance. Disturbance at a potential nest site may cause the loons to not use that location and, if that is the only viable nesting habitat in a territory, loons may not nest at all.

The nest camera documented heavy boat use around this nest site during the pre-nesting period. Within 10 minutes of the anglers leaving the nest cove, the loons had climbed back on the future nest site. After seeing pictures like these, LPC sought – and gained – permission from NH Department of Fish and Game to float signs and ropes around key traditional nest sites *before* loons began nesting to provide loons with the space they need to select and settle down on their nests.

Of course, spring in New Hampshire also brings black flies. Like this year, 2014 was a particularly bad year for black flies, and the loons suffered.



Black fly season was just ending when these loons went on the nest, and the eggs survived the loons' occasional trips into the water to escape the flies. Sadly, other Squam loons were not so lucky – two nests failed on Squam in 2014 as the loons were unable to cope with the swarming black flies.





6/7/14: The business of incubating is in full swing, but disturbances continue. This loon is nervous about something passing behind the nest camera. Loons in this position, with their heads lowered flat over the nest, are stressed and on the verge of flushing off the nest, exposing the eggs to predators and chilling or overheating. Repeated disturbances may cause the loon to abandon the nest. If you see a nesting loon in this position, please leave the area immediately.

#### 2014-06-20 9:23:30 AM



6/20/14: As both incubation and the summer wear on, temperatures rise and loons need to pant on the nest to stay cool. Loons are a northern species and loons overheat easily and can experience heat stress while incubating. The loon in this picture is panting hard to try to cool off. In 2010, LPC's banding research revealed that loons during that very warm summer had skewed blood cell ratios that may be indicative of heat stress. During a particularly hot spell in 2010, LPC biologists observed loons needing to get in the water to cool off after only 30 minutes on the nest, again exposing eggs to predation and overheating. LPC is monitoring nest cameras and temperature loggers placed in nests prior to egglaying to study the effects of rising temperatures on loon nesting behavior and success.



6/22/14: As the hatch date nears, the difficulties continue for the loon pair. Near midnight, the incubating loon explodes off the nest, rushing away in

a flurry of splashing water and flying nest material. Fortunately, the eggs were unharmed and the loon resumed incubating, but the camera did not capture what may have frightened the loon so badly. Part of LPC's nest camera research is to study these sorts of disturbances. Nearly half of nests fail, many from unknown causes, and other nests may have experienced a series of challenges that contributed to the failure before it actually occurs. This is a critical period in a loon's lifecycle, and further information on causes of nest failures and disturbances at nests can help LPC better understand how to protect nests.

6/28/14: Despite everything, there is a happy ending for this loon family – two chicks hatched from the nest and successfully fledged from Squam at the end of the summer! The nest camera gave us a better understanding of levels of disturbance and other stresses faced by nesting loons and resulted in improved protections for key nesting sites on Squam and other lakes. LPC will continue to deploy these nest cameras to further study how to help ensure similar happy endings at nests throughout the state.





~Tiffany Grade

Nest cameras help us better understand the threats facing loons before and during the nesting period and, ultimately, what we can do to help ensure loon nesting success. These cameras were made possible thanks to generous contributions to the Squam Lake Loon Initiative (SLLI).

#### Thank you to our donors: April 1, 2015 - March 31, 2016 (\$100 and above)

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# **VOLUNTEER PROFILES**

# Bill Gassman Lends a Technical Hand to LPC's Live Webcam

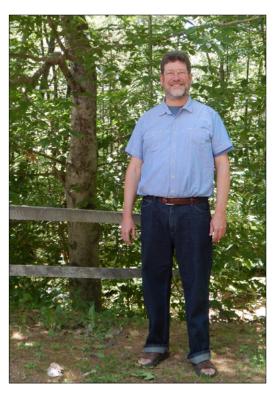
For the third year in a row LPC's live webcam allowed us to get an up-close look at a pair of nesting loons in the Lakes Region of New Hampshire. But, for the first time we had a technical expert who volunteered his time to assist with the set-up and daily operation of our loon cam.

Bill Gassman was no stranger to LPC-as a town conservation commissioner he has relaved local lake water samples to UNH through LPC's freezer storage for several years, and in 2015 he created a virtual tour of The Loon Center which gives the public an inside look at our gift shop and visitor center. Before the webcam was installed near the nest site in early May, Bill set it up near his home on Lake Winnipesaukee and learned the ins and outs of its functions. When it came time to install the camera, he donned his rain gear and accompanied LPC Senior Biologist, John Cooley, to the site to help get the camera online in the pouring rain! From there he created a "Loon Cam FAO" where viewers could find information about the webcam, and looked through thousands

and thousands of pictures to create time-lapse video clips to post on our website as well. Bill truly became a student of loon nesting behavior through this attention to the video footage – we could count on good questions from him as he noticed and documented the textbook nesting behaviors and odd or atypical moments, too.

During the weekend that the nest was expected to hatch, in between family wedding festivities, Bill reset the router when the camera went down unexpectedly, and upon his return, went out to the site to remove the lightning arrester which may have

been struck during a recent storm causing connectivity issues. We cannot thank Bill enough for the insights, reports, troubleshooting and general wisdom he has provided to us this year on the loon cam. After 38 years in the high-tech industry, he has been gracious to donate his time as a freelancer to local businesses and



organizations whose projects involve technology, economic growth, and environmentalism. After all the many hours and days he has spent on LPC's project, I think it's safe to say that he is hooked on loons!

~Susie Burbidge

# Webcam Update

As of June 25, 2016, the adults were still sitting on the nest – more than a week overdue. Some loon pairs will abandon their inviable egg(s) within the first week of the expected hatch, but others will continue to sit for weeks on end. In 2015, a pair of loons on Squam Lake sat on their nest for 84 days, nearly two months longer than the expected hatch date.

It's hard to know what happened to the egg. Some are inviable from the start while others become inviable during the 28-day incubation period if adults are flushed off the nest, often due to the close approach of people.

When the loons finally decide to abandon the nest, an LPC field biologist will collect the unhatched egg to be sent for testing. These eggs can only be collected by LPC staff, as we have a strict protocol in place which adheres to state and federal permits. It costs over \$3,000 to test a single egg for a wide range of contaminants! Just to give you a sense of how this one nest fits into the big picture, in 2015 we collected a total of 59 inviable loon eggs. That's over 17% of the total number of eggs laid last year.

# Birdathon/Bloomathon Tallied 118 Birds and 80 Blooms!

**4**:23 am. 58° F. Overcast. Humid. Mosquitos. 4:23 pm. 84° F. Sunny. Humid. Black flies. That's one way to measure the day. Another way is this: 118 bird species and 80 species of plants in bloom!

The Tamworth area Birdathon/Bloomathon (B/B) was Wednesday, May 25th, likely the latest date ever for this annual event. The rules are simple: in 24 hours, count as many bird species – by sight or sound – and colorshowing blooms of native plants, in Tamworth and contiguous towns.

There are strategies. Where might that prized migrating warbler flock be and when? And can we try to be there again, as we were once years ago, for the chance silent movement of myriad thrushes through leafingout forest? And where will the Creeping Snowberry, always a late bloomer, show color this year? (It didn't, this year.)

Chris and Ingrid Albee led the way to a record bloom count: 80! The date being late, early bloomers were mostly past, but later species made up for it. Hawkweed and White Clover are on the list this year; some years they are not blooming yet. Jane Rice, multi-tasking at the Castlein-the-Clouds property, added Columbine, Early Saxifrage, and Nodding Trillium - as well as the only Ruffed Grouse, turkey, and Bay-Breasted and Blackpoll Warblers of the day! On assignment, the birders completed their usual short checklist: Bullhead Lily, Marsh Marigold, and the reliable-if-you-make-the-wet-slogto-the-bog Pale Laurel and Bog Rosemary.

The birding team tweaked their strategy this year. Tony Vazzano

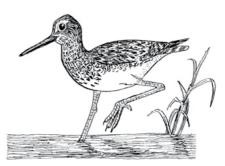
never left Sandwich. He and Bob Ridgely covered their local rich habitats from dawn to 9:00 am: their back yards (Bob heard a Common Nighthawk), the Thompson Preserve, and the large Ambrose pit – where Bob's kestrel box is occupied once again and the Vesper Sparrow still sings. Off Route 41, Stefan Gaschott and Ned Beecher picked up the routine dry habitat species and an Olive-sided Flycatcher at the south edge of the West Branch Pine Barrens in Madison.

The prized wood-warblers this year were along the Guinea Pond Trail in late morning (along with some late-blooming Trout Lily). Tony and Bob have been drawn there in recent years by the occasionally-nesting Rusty Blackbird (no sign of it this B/B day). Ned and Stefan joined them this time, and that wild valley wetland - wooded, shrubby, beaver-impacted - yielded Golden-crowned Kinglet, Mourning Warbler, Alder Flycatcher, and precious close looks at a Canada Warbler and a Northern Waterthrush. By noon, the wood-warbler list - which had

started auspiciously when Tony and Bob each had a Tennessee Warbler early on – was complete at 22 species.

Out at the edges of the B/B territory, Tiffany Grade plied the waters of Squam, off Sandwich, spotting the now-routine Bald Eagle, a Lesser Yellowlegs, a Double-crested Cormorant, two gulls: Ring-billed and Bonaparte's, and, of course, Common Loons! And, in central Madison, Gary and Betsy Gaschott heard a Whippoor-will at 12:17 am and again at ~8:30 pm – another way of framing the day.

~Ned Beecher, B/B Participant



Lesser Yellowlegs

The Birdathon/Bloomathon is a volunteer fundraising event hosted by the Lakes Region Chapter of New Hampshire Audubon. The objective is to count as many birds and blooms as possible in a 24-hour period during the peak of songbird migration and spring blooms. Bird and bloom teams solicit per species sponsors and outright donations to help raise money for the Chapter and for the Loon Preservation Committee. The Chapter has held their meetings at The Loon Center since its dedication in 1994, and members of LPC are also active Lakes Region Chapter members.



# SUMMER BULLETIN BOARD

# Yakking for Loons: Friday, July 8; 8am - 12pm; \$12 registration fee

A fun-filled morning of kayaking on Lake Winnipesaukee while observing resident loons. Preregistration is required and includes a box lunch. Sponsored by Curt's Caterers and Irving Oil.

# Loon Festival: Saturday, July 16; 10am - 2pm; FREE

Come by The Loon Center for loon-themed arts & crafts, storytelling, face painting, balloons by Mo, educational loon slide shows, live animals and exhibits, music, refreshments & more!

# Summer Luncheon & Auction: Sunday, July 24; 11am -2pm; \$55 per person

Held at Church Landing in Meredith, festivities include a buffet lunch, cash bar and silent auction. Naturalist and author, Mary Holland, is this year's guest speaker. RSVP by July 15.

## <u>10th Anniversary SWIM</u>: Thursday, August 11; donations welcomed

Led by Wendy Van de Poll, the SWIM proceeds support research and management on Squam Lake. Donate online at www.loon.org or send a check to LPC. Join the swimmers for a post-SWIM celebration at the Sandwich Town Beach on Bean Road at 11:30(ish).

## Carl Johnson Memorial Golf Tournament: Monday, August 15; 7am-2pm; \$100 per golfer

A fun morning of golf at Ridgewood Country Club. \$10,000 hole-in-one grand prize along with raffle and other prizes! Breakfast and lunch included. Pre-register by August 8.

## LPC Annual Meeting: Thursday, August 25; 7pm

You are also welcome to attend the potluck dinner at 5:30 pm and/or the end of season loon report immediately following the Annual Meeting (see page 22).

# Look what just flew in at The Loon's Feather Gift Shop!

Selling "all things loon" and more!

This darling plush loon puppet by Folkmanis is 16" tall with a 19" wingspan, movable head and wings. It has authentic loon markings right down to its red glass eyes. Children and adults alike will enjoy bringing this interactive toy to life! Price \$30.95

> Open 7 days, July 1 - Columbus Day\* 9am - 5pm 603-476-LOON

\*visit www.loon.org for year-round seasonal hours

# LPC Annual Benefit Raffle

Don't miss out on LPC's Annual Benefit Raffle! Enter to win one of the three amazing prizes pictured below. Tickets can be purchased at The Loon Center or by calling 603-476-5666. All proceeds benefit New Hampshire's loons!

# Old Town, Heron 9XT Kayak: Donated by Irwin Marine

This recreational kayak is 9'6" long and 28.5" wide. It weighs 39 lbs. and has carrying handles at the bow and stern. Comfort Flex seating, Support Track foot brace system, and Click Seat hatch add to its comfort and versatility. Color: Cloud

# Loon Quilt: Donated by Kathy Burbidge

This stunning 85 x 85 inch quilt has a center block with an original McKenna Ryan appliqué design "Loon Creek" surrounded by "Flock of Geese" blocks. Machine appliqued, pieced and quilted by Kathy Burbidge of North Wildwood, NJ in Spring of 2016.

# "Rocky Shallows" Framed Limited Edition Print: Donated by The Loon's Feather Gift Shop

A pair of loons and two chicks grace this lovely composition by James Hautman. Beautifully framed with a double matt and brass nameplate, the finished print measures 25" x 40 1/2."





\$5.00 each or 3/\$10.00 Drawing November 26, 2016 at LPC's Holiday Open House!



# **Summer 2016 Nature Talk Series**

at The Loon Center 183 Lee's Mill Road, Moultonborough, NH

Thursdays, 7:30pm + Admission Free + Donations Appreciated

# Thursday, July 7 Kittie Wilson – Little Loons in Feather Beds

"Little Loons in Feather Beds" is a magical time, lasting only for the first two weeks of a chick's life. Together we will observe the love and care provided by Mother and Father Loon and enjoy those darling moments when little loons snuggle under the covers in that luxurious feather bed! Kittie Wilson will enchant you with stories, songs and photographs. She is the proud recipient of the 2009 Spirit of the Loon Award.

# Thursday, July 14 Ben Kilham – The Social Black Bear

Black bears, thought to be solitary, have a different type of social behavior that possibly parallels early human behavior. They show evidence of reciprocal altruism, matri-linear hierarchy, and a mix of intentional and emotional communication. Ben Kilham's love of and devotion to black bears has enabled him to study their habits and interact with them for more than two decades.

# Thursday, July 21 Bob Fox and Dana Duxbury Fox – Birds of the Lakes Region

Dana and Bob Fox will introduce you to the Summer Birds of the Lakes Region, presenting them by the habitat in which you are likely to find them. They will help you learn the simple ways in which you can identify these local birds. Dana is the proud recipient of the 2015 Spirit of the Loon Award, and Bob a recipient of the 2014 Goodhue-Elkins Award for "contributions to the ornithology of New Hampshire."

# Thursday, July 28Squam Lake Natural Science Center Naturalist – Aquatic CrittersWateris essential for all life on our planet. From marshes and ponds to lakes and rivers, aquatic communities support an<br/>amazing array of life. Join a Squam Lakes Natural Science Center naturalist to meet three different live animals,

all dependent on New Hampshire's waters, and learn about their habitats, adaptations, and populations.

# Thursday, August 4 Chris Martin — Bald Eagle Recovery in New Hampshire

Chris Martin will discuss nearly three decades of bald eagle population recovery in New Hampshire, including the return of a thriving breeding eagle population in the Lakes Region. He will describe management efforts and partnerships that are helping eagles. A raptor biologist for NH Audubon for 26 years, Chris has focused on recovery of the state's peregrine falcons and ospreys, as well as bald eagles, in collaboration with NH Fish & Game.

# Thursday, August 11 Sigrid Salmela — Natural Communities of the Granite State

In this dazzling presentation, you'll see New Hampshire's natural beauty through the lens of Natural Heritage Bureau ecologists and photographers Ben Kimball and Dan Sperduto. Featuring photos of rare and special plant communities and habitats throughout the state, you'll learn new ways to look at the natural landscape and learn about some of New Hampshire's most unique places.

# Thursday, August 18 Kristine Rines — Moose in New Hampshire

Join New Hampshire Fish and Game biologist Kristine Rines for a talk about the moose population in New Hampshire. Learn about the history of moose in the state; their life history, current status, the results of research to date and what the future may hold for this symbol of the north woods. Kristine is a New Hampshire native who has been the Moose Project leader for 31 of her 33 years with NHF&G.

# Thursday, August 25 John Rockwood & Harry Vogel – End of Season Loon Report

Wildlife photographer, John Rockwood, will share photos and video of 2016 New Hampshire loon families, from arrival on the nest site through late August. LPC Senior Biologist/Executive Director, Harry Vogel, will present trends in New Hampshire's loon population and preliminary statistics on how loons fared in the state over the last year.

Save paper and send us your sightings online! You can submit this form at www.loon.org/census.php

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Observer(s)	:				
Telephone:				E-mail:	
Address:					
Observat	ions	e in party:			*Location/Direction
					Flew in from east
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3.					
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Please note an (to assist NHA			is hour:		
		sighting of eac			the number of loons observed on
(2) If possible	, please attac	h a sketch/map	of census area a	and the location of any	y loons you observe.

- (3) It is CRITICAL that observations continue for the ENTIRE HOUR.
- (4) Remember, a report of zero is just as biologically important as a report of 10 loons.

(3) Your sightings from throughout the summer are also valuable. Please comment on loon activity observed at other times on the reverse of this page.

the

#### CENSUS FORMS MUST BE RECEIVED BY JULY 31 TO BE INCLUDED IN THE FINAL TALLY.

Please return this form to your coordinator, LPC staff, or to the LPC office as soon as possible. Thank you!

Loon Preservation Committee, P.O. Box 604, Moultonborough, NH 03254; (603) 476-5666/5497(fax) Email: volunteers@loon.org. Online at www.loon.org

Save paper and send us your sightings online! You can submit this form at www.loon.org/census.php

Loon Preservation Committee PO Box 604 Moultonborough, NH 03254



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