

Chip and Sue Bessey count loons on Great Pond in Belgrade. Sue Bessey has been counting loons for 20 years.

VOLUNTEERS Make 20 Years Count FOR MAINE'S LOONS

The annual count has always been the centerpiece of the Maine Loon Project, and for good reason. It brings together a diverse group of "citizen scientists" young and old. They're long-time Maine residents and first-time Maine visitors, experienced birders and people testing their first pair of binoculars. Anyone can participate, and all are welcome.

— Susan Gallo, director of the Maine Loon Project

Every summer since 1983, volunteers for the Maine Audubon Loon Count have helped sketch a valuable portrait of the state's loon population, providing data that raises and also may help answer questions about a broad spectrum of challenges the species faces.

A 7 a.m. July sun glanced off the water as Bob Griffin steered his little boat across Bunganut Pond in York County. Keeping a sharp lookout for loons, he squinted under his John Deer ball cap. The glare, he said, was welcome.

"I've been at it for a long time, 20 years," he said, scanning the shoreline. "Some years you come out here and it's foggy and miserable."

Not a hard-core bird watcher or a driven environmental advocate, Griffin has nevertheless earned tenure among Maine's

growing cohort of die-hard volunteer loon counters. More than 1,000 volunteers turned out July 19 for the 20th anniversary of the Maine Audubon Loon Count, scouring lakes from York to Calais. Griffin is among those who have joined the count, held the third Saturday of July, every year since it began in 1983.

A growing number of volunteers is helping add information to the database of lake loon counts in Maine. Enough volunteers count in the lower half of the state to sketch a valuable portrait of the loons that live and breed there, providing an ongoing read of how the birds are faring in the most rapidly developing portions of Maine. The numbers raise important questions about challenges the species faces in those areas, and play a supporting role in research linking mercury contamination to impact on wildlife.

Results from the 2003 count estimate a population of 2,558 adult loons and 208 chicks, according to Susan Gallo, Maine Audubon biologist and loon count director. Combining those numbers with 1996 data gathered in the northern portion of the state by Maine's Department of Inland Fisheries & Wildlife, Gallo puts the statewide loon population at roughly 4,300. Holding steady for a third consecutive year, the adult loon population's slow-but-steady growth over two decades, Gallo said, seems to have hit a plateau.

BETTE AND PETER BRIGGS

"We've had fun gathering other volunteers for the loon count—there are now three teams of counters on our lake!"

Counting loons since: 1987
Count loons on: Portage Lake in Aroostook County
Got started through: A relative who volunteered for Maine Audubon

Best part of the loon count: It's fast!
When not counting loons: Volunteer for Friends in Service Helping and the local senior center and lake association
Loons in the house: A wax candle they just can't bring themselves to light

One of five loon species that live in North America, the common loon ranges across the northern reaches of the continent, as well as to Iceland, Greenland and Europe. The birds winter up and down both U.S. coasts and the Gulf of Mexico.

But for many people reared in Maine, like Jane Kirton of Sanford, the dapple-back divers are a symbol of home. "I grew up on (Square Pond) and loons are very special to me," said Kirton, who organizes the York County portion of the annual count and is one of six people in the county who have counted each year since 1983. "They are just so peaceful to watch."

In some places, that peace is in jeopardy. Loss of habitat, poisoning from ingestion of lead fishing sinkers and jigs, and fatal boat collisions all take a toll on loons. The common loon is threatened in New Hampshire, endangered in Vermont. In Massachusetts, the southern reach of the bird's breeding range, loons are listed as a species of special concern.

The Maine Audubon Loon Count is one of a growing number of loon census and research programs cropping up across the bird's breeding range. The programs vary, from an exhaustive, 30-year effort to carefully manage New Hampshire's small but recovering population, to start-up efforts to track populations in states from New York to Washington.

It was during the 1970s that people in a half-dozen states began noticing lakes that had long been home to the loon's soulful call had fallen silent. There were few studies, fewer hard and fast numbers and no way to document whether populations were in decline.

JEANNE BAGSHAW RAYMOND

"The loons are like our pets; we eagerly look and wait for them to come back each spring. They're such an awesome bird."

Counting loons since: 2001

Counts loons on: No Name Pond in Androscoggin County

Got started through: learning about Maine Audubon while researching why No Name Pond had no loon chicks

Best part of the loon count: Taking kids out on the count and teaching them about it, then coming back to her house for blueberry muffins

When not counting loons: Volunteers with the police department, public theater, church, lake associations, schools and food bank

Loons in the house: Around 15 items, including painted wooden figures and a "One Loony Lady Lives Here" sign on the shed



JIM EVANS

Volunteers Will Reid and Barbara Wyman count loons on Wesserunnett Lake in Madison for Maine Audubon's annual loon count.

New Hampshire Audubon founded the Loon Preservation Committee in 1975 to look into declining loon numbers. The Wisconsin Department of Natural Resources and Northland College launched a Loon Watch program in 1976. In 1978, the Vermont Institute of Natural Science and the state's Department of Fish and Wildlife joined forces to found the Loon Recovery Project. Last year, the Massachusetts Aquatic Conservation Society Inc. began its state's first loon survey.

Around that time Maine's DIF&W officials grew concerned that they had no means of tracking the bird's status.

"In New Hampshire they had documented a real decline, and the Massachusetts population had just about been wiped out," said Sally Stockwell, Maine Audubon's director of conservation. "So there was real interest in finding out what was going on in Maine."

DIF&W and the University of Maine jointly developed a method to estimate and monitor the birds through a volunteer program managed by Maine Audubon. The count was set for the end of July, when most chicks would be hatched and off their nests. It also was timed to target very young chicks, since most chick mortality occurs in the first few weeks of life.



Meet Maine's Loon

MAINE's common loon (*Gavia immer*) is one of five species of loons worldwide. It's a large bird—almost three feet from head to tail with a wingspan of up to four feet—and heavy, at an average of nine pounds. Maine's loons tend to be a few pounds heavier than their western counterparts; a male in peak breeding condition can weigh up to 14 pounds.

The common loon has striking breeding plumage, with a pure white breast and underparts. Its distinctive black wings and back are striped and spotted with white, and its neck and torpedo-shaped head are greenish-black with an open necklace of white stripes. In the fall, this summer finery is replaced with dull gray, white and brown winter plumage, which juveniles keep at least through their second winter. The loon's eyes are a dramatic ruby red, which some scientists believe aids its underwater vision.

Unlike most other birds, loons have solid rather than hollow bones that make diving for food easier. The high ratio of body weight to wing size makes it difficult for loons to take flight, but, once airborne, they are powerful fliers, reaching speeds of 90 miles per hour.

Loons are exceptional divers. Long, flexible necks and powerful feet allow them to maneuver underwater with ease and find their prey by sight. Loons eat fish almost exclusively, but they will also forage on crustaceans and insects. Adult loons consume about two pounds of fish a day, and a family of four will consume a little over 900 pounds of fish during the five-to six-month breeding season.

Maine Loon Project Timeline

1983

First year of the Maine Audubon Loon Count. Volunteers patrol 100 lakes in the southern half of the state, another 100 by aerial flights in the northern half.

1985

More than 450 people turn out for the first Loon Festival, Kents Hill. Organized by Maine Audubon to share information and build support for loon conservation in Maine, the festivals include speakers, panel discussion, entertainment, loon crafts and a loon-calling contest.



1987

Maine Audubon staff present at the Conference on Loon Research and Management in Ithaca, N.Y.

1988

In response to concerns about increased waterfront development, Maine's Shoreland Zoning Law is strengthened to include protection of coastal and freshwater wetlands.

1989

Fifth Loon Festival, Ellsworth.

Valdez oil spill in Alaska kills up to 30 percent of world's yellow-billed loons.

1990

Maine Audubon completes three-year study of development pressures on nesting loons. Reproductive success is consistent with healthy rates from other states and provinces.

Maine Audubon distributes information on how to petition the state's Department of Inland Fisheries & Wildlife to restrict boating on specific lakes and ponds.

Many loons dead from lead poisoning are collected in Maine and New England.

1991

Maine Audubon distributes survey on boats, lakes and wildlife to loon counters and lake association members. Majority of respondents (73 percent) agree that boat traffic poses a real threat to wildlife, especially loons. Loon advocates use the responses to make the case to the Maine Legislature for new restrictions of watercraft on certain lakes and ponds.

Maine Audubon produces yellow plastic LOOK OUT FOR LOONS! signs to post at boat ramps and near nest sites.



Saltwater loon nest along Maine coast fails for third year in a row. Eggs washed out by exceptionally high tide.

1992

Maine Audubon organizes and co-hosts The

Loon and its Ecosystem, a festival and conference in Bar Harbor. Published conference papers include summary of Maine Audubon's three-year loon study. (See "1990.")

Maine Audubon creates Learn About Loons kits for teachers and youth groups.

It was during the 1970s that people in a half-dozen states began noticing lakes that had long been home to the loon's soulful call had fallen silent. There were few studies, fewer hard and fast numbers and no way to prove whether populations were in decline.

The initial count surveys focused on 100 randomly selected lakes south of the 45th parallel where volunteers counted both adults and chicks. Aerial surveys of adults on another 100 randomly selected lakes in the northern part of the state helped complete those surveys. Since then, additional lakes have been added as more and more volunteers participate. When more lakes are included in the count, more long-term information is added to a growing database of loon count results.

Today, lakes in the count are divided into seven size classes. The largest are Sebago, Moosehead and Damariscotta. Bunganut is at the other end of the scale. To determine the population estimate each year, Gallo averages the counts of adults and chicks across a subset of lakes in each class size, then uses that average to extrapolate a total number for each size class. Added together, these produce the population estimate.

Some lakes turn up no loons; others, dozens. The highest returns in this year's count came from China Lake, with 65 birds. Another 57 loons showed on Damariscotta.

Griffin and his wife Sandy have lived on Bunganut for 30 years and say, in one rare case, they saw 30 loons gathered at once on the water. This was most likely a group of non-breeding adults who were gathering in a "raft" before flying to the ocean for the winter. But, year to year, only one loon pair nests on Bunganut and hatches and rears one chick. Most residents along the heavily developed shoreline know just where that nest is. Many, Griffin said, let their curiosity get the best of them. "It's amazing the amount of people who go up to it, almost in touching distance," he said.

According to Gallo, disturbances like these can be disastrous for a nesting pair of loons. Loons will abandon a nest if disturbed too often, and frequent visits to a nest by well-meaning human visitors may alert watching predators to the location of the eggs.

If it survives, a loon's average life expectancy is 25 years. They establish territories of about 100 acres per pair and generally begin nesting at about seven years old. A pair averages one chick every two years.

Productivity and survival can vary drastically, making trends often difficult to identify. But Southern Maine's count showed population growth from 1,800 in 1983 to around 2,500 in 2000.

Then the growth curve seems to have stalled, with adults averaging around 2,500 in the last three years. Unlike adults, the chick population seems to go up and down each year, fluctuating regularly around 200.

"Even though the chick estimate has gone down the last three years, it's not unusual," Gallo says. "The chick population has regularly gone up and down every few years since the count started. That's one of our questions: are more loons breeding and chick survival is actually decreasing, or is the breeding population staying the same and the increase in adults we've seen has simply been additional 'bachelor' loons who don't have territories?"

Asked early enough, such questions could help head off problems like those now faced in Wisconsin. The state's Loon Watch program has surveyed its loon numbers every five years since 1985. In 2000, it estimated the population remained stable at 3,131 adults and 462 chicks.

GLORIA DEANGELIS

"I've been watching loons since 1967."

Counting loons since: 1984
Counts loons on: Branch Lake in Hancock County
Got started through: hearing that Maine Audubon was starting an annual loon count
Best part of the loon count: Seeing how dedicated loon count volunteers are.
When not counting loons: Teaches dance and volunteers for literacy
Loons in the house: dish towels, pictures and T-shirts galore

REBECCA BLACK

"It's like a race when loon volunteers first arrive to count!"

Counting since: 1994
Counts loons on: Green Lake in Hancock County
Got started through: University of Maine Cooperative Extension
Best part of the loon count: Contributing to better protection for loons
When not counting loons: Works as a bookkeeper and is active in the Democratic Party, local soup kitchen and city politics
Loons in the house: 100-plus items, including magnets and stuffed animals

Maine Audubon, North American Loon Fund and others request that U.S. Environmental Protection Agency ban lead sinkers in national parks and wildlife refuges.

1993
 Ten-year anniversary of the Maine Audubon Loon Count.

Maine Audubon initiates Loon Ranger Program in Hancock County and trains volunteers to monitor loon pairs and educate people about human threats to loons.



1994
 BioDiversity Inc., a private consulting firm, completes study of contaminant levels in loons and New Hampshire and finds extremely high levels of mercury, compared to birds from other parts of the U.S. and Canada.

Long-time Hancock County loon count coordinator and passionate loon conservationist Ruth Sergeson receives Maine Audubon's Volunteer of the Year Award.

U.S. EPA proposes ban on lead sinkers in national parks and wildlife refuges.

Maine Legislature passes Maine Audubon bill to create a loon license plate program, dedicating 40 percent of revenue to the conservation of endangered and nongame species, including loons.

Maine Audubon collates a teacher's resource directory on loons that's published by the North American Loon Fund.

Maine Legislature establishes the Maine Outdoor Heritage Fund, conceived by Maine Audubon and the Sportsman's Alliance of Maine to direct revenue generated by an instant lottery ticket to wildlife conservation. Maine Loon Project later receives several grants from the fund.

Eighth Loon Festival, Maine Audubon's Gislard Farm Audubon Center in Falmouth.

1997
 Northeast Loon Study Workgroup forms to share information and coordinate research on mercury contamination and lead sinkers.

Maine Audubon assists in study of mercury contamination in Maine's loons, which shows between 10-30 percent of them are at risk of reproductive failure due to high concentrations of mercury in their tissue.

1998
 Maine Audubon co-hosts workshop on jet skis and use of Maine lakes to discuss new legislation allowing municipalities to restrict loon-threatening watercraft on lakes and ponds.

Maine Audubon initiates Get the Lead Out outreach campaign, distributing lead-sinker information and samples of non-lead sinkers at fishing tournaments, boat ramps, sporting shows and retail outlets across the state. Non-lead sinkers also included in DIF&W's 4,000 Hooked on Fishing kits for kids.

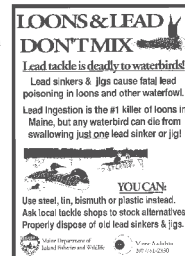
Maine Legislature implements a ban on personal watercraft on 242 remote lakes.

Maine Legislature leads the charge in the Northeast to reduce sources of mercury by requiring significant reductions in allowable discharges and emissions.

North Cape oil tanker runs aground, dumping 828,000 gallons of oil off the Rhode Island coast and killing approximately 400 common loons. Since most of these loons nested in Maine, mitigation funds resulting

from the spill are used to purchase and protect land around three large Maine lakes with multiple loon nesting sites.

1999 Maine Legislature bans sale of lead sinkers or jigs less than or equal to half an ounce, effective January 1, 2002.



GENIE SILVER

"I went to camp on this pond in the '50s and there were no loons; I think it's really wonderful to help bring them back."

Counting since: 1994

Counts loons on: Sand Pond in Oxford County

Got started through: going to the Audubon Camp at Hog Island and learning about the Maine Loon Project

Best part of the loon count: Making the most of her love for looking for loons

When not counting loons: Teaches university history and gender studies

Loons in the house: pillows, afghans, carved figures and photographs

ELWOOD BEACH

"I still remember a stuffed loon in my grandparent's attic in Canterbury, New Brunswick."

Counting loons since: 1992

Counts loons on: Raymond Pond in Cumberland County

Got started through: a newspaper article about a need for loon counters

Best part of the loon count: finding loons to count, particularly if there are chicks

When not counting loons: Active in church, university alumni association and the Rotary Club

Loons in the house: 100-plus pieces, including pictures, free-standing loon figures and curtain hold-backs his daughter made

But program coordinator Cory Counard MacNulty said a decade-long boom in lakeside development has decimated the bird's traditional range within the state. "Loons used to breed throughout Wisconsin," MacNulty said. "Now they just breed in the northern third."

In a smaller state like New Hampshire, the full-time staff of the Loon Preservation Committee can keep extensive data on the number of pairs, nesting pairs, territorial pairs, chicks hatched, chicks surviving and how many lakes are occupied. The meticulous effort is having an impact—the recovering population is up to 649 birds, according to this year's count.

But committee biologist Kate Taylor said historical records show many lakes once inhabited by loons have not been reoccupied, and the remaining New Hampshire loons have

become a little less than wild. "The birds that we have now, the population is doing well because it is a massive effort," Taylor said. "Each pair is monitored and has its own kind of management. It is a completely managed population."

As top-level predators in freshwater lakes, loons collect mercury taken up by a pyramid of smaller organisms in the ecosystem. For more than a decade, Dr. David Evers, executive director of the Falmouth-based BioDiversity Research Institute, has mapped mercury contamination in loon populations from Maine to Alaska, sampling blood and feathers for evidence.

Maine's loons have the highest blood mercury in the United States, though loons to the northeast of us in Nova Scotia suffer from even higher levels of mercury. Evers has documented cases of nest abandonment and irregular feeding of chicks in adult loons with high levels of mercury. As he continues to study these birds, more cases will undoubtedly be documented. And Maine Loon Project volunteers may be able to help: a project in the works to engage loon count volunteers in habitat assessments will also train them to monitor nesting success. That data will assist Evers and the institute build the case for high-mercury lakes.

Maine leads the nation in progressive anti-mercury legislation, and Maine Loon Project volunteers have long worked to advocate for these measures in Augusta. Recent legislation to mandate mercury recycling, and to eliminate mercury from auto switches, will help reduce the mercury going into the state's waste stream and, eventually, waters. Nationally, however, the likely loosening of clean air standards means emissions from factories in the Midwest are poised to worsen the mercury problem for loons and humans.

Volunteers like Bob Griffin are key to the conservation of Maine's loons. Spotting a female and her chick out on the water, Griffin cut his tiny outboard motor and glided past at a distance. Another loon, possibly the mate, flew overhead.

They are the only loons Griffin has seen on the lake this year, he said. But he pulled the start cord and pressed on, nosing his Sears boat around each cove and cranny.

"Chances are good you won't see another one on the whole lake," he said, his eyes on the water. "But you never know."

Year of the Loon



April

Common loons return to Maine's lakes right after ice out and spend about a month establishing their territories and bonding with their mate.

May-June

Loons build their nests of dead vegetation and mud right on the shoreline and small islands, away from wind, waves, people and predators.



July-August

After about 27 days, the eggs hatch and the loon family moves to a nearby "nursery" area. The loon parents spend much of their time catching small fish for hungry chicks. Chicks ride on their parents' backs to stay warm and safe from predators.

September-October

Most chicks can now feed themselves and fly. Their parents leave them to congregate in large groups, or "rafts."



November-March

Loons spend the winter resting and feeding along the coast. Juvenile loons will wait about seven years before they return to fresh water to breed.

2000

Maine Audubon presents **Loons and Lead** slide shows across the state, which include information on natural history, threats to loons and problems with lead tackle.

After performing necropsies on dead loons for 10 years, Tufts University Wildlife Clinic concludes the **leading causes of death among loons** are lead poisoning and blunt trauma (probably from collisions with motorboats and personal watercraft).

Maine Legislature passes laws to prevent **milfoil** from spreading into Maine lakes and to remove mercury from certain products.

Maine Bureau of Health distributes new **fish-eating advisory** suggesting consumption of many freshwater fish be limited, due to high mercury levels.



Maine's **HoltraChem Manufacturing Co.**, the largest mercury polluter in New England, closes its doors, in part because of pressure from local residents, environmental groups and Maine's Department of Environmental Protection to clean up mercury.

Maine Legislature requires **products containing mercury** be recycled instead of disposed of in the waste stream.

Legislature prohibits the importation of **milfoil** into state waters.

Maine Audubon and DIF&W publish and distribute to towns, lake associations and others across the state 125,000 **Get the Lead Out** brochures describing the new lead sinker ban and how lead fishing tackle threatens loons and other waterbirds.

2001

Maine Audubon presents **Environmental Award to Maine Hospital Association** for its commitment to eliminate the use of mercury-containing materials.

Maine Legislature **bans sale of mercury-containing products** to K-12 schools, and requires DEP to establish and periodically revise limits for discharging mercury into water.

Legislature creates a strong program to educate boaters and other lake users about the **dangers of milfoil** and provide new enforcement to help keep it out of Maine's waters.

Maine Audubon's **lead sinker outreach** concludes with visits to five ice-fishing tournaments involving 1,200 anglers.

2002

Lead sinker ban goes into effect.

Legislature **bans sale of mercury-added thermostats**, effective January 1, 2006.

Legislature requires auto manufacturers to collect, consolidate and recycle mercury switches removed from discarded motor vehicles.

2003 20th anniversary of **Maine Audubon Loon Count**.

Maine Audubon and DIF&W print and distribute to towns and marinas across Maine 85,000 **Living in Loon Territory** brochures aimed at minimizing human conflicts with loons.



Maine Audubon presents **Citizen Science Recognition Certificates** to 49 loon counters who participated in the count for all 20 years.

Maine Legislature bans sale of mercury switches, relays and measuring devices and instruments, effective 2006.

Today

The Maine Loon Project continues to coordinate the loon count, conduct public education and outreach and lobby for legislation to protect loons. Maine Audubon plans to expand the project to begin addressing questions that have arisen during 20 years of counting the state's loons.

The Maine Loon Project: *Today and Tomorrow*

by
Susan Gallo,
project director

To continue advocating for loon conservation, the Maine Loon Project is employing Maine Audubon's strategy of working on three fronts—conservation, action and education.



The 20th annual loon count was one of the best ever. Not only did we celebrate 20 years of loon protection and conservation, we had over 1,050 loon counters participate, more than ever before. And the day couldn't have been better! "Perfect, calm, gorgeous, excellent, beautiful and ideal" are just some of what counters had to say about the morning. A few spots of thick fog hampered counters in Washington County and on Mount Desert Island, but aside from that, conditions across the state were some of the best we've ever seen for loon counting.

The annual count has always been the centerpiece of the Maine Loon Project, and for good reason. It brings together a diverse group of "citizen scientists" young and old. They're long-time Maine residents and first-time Maine visitors, experienced birders and people testing their first pair of binoculars. Anyone can participate, and all are welcome. An accurate assessment of Maine's loon population could only happen with such a passionate group of loon conservation advocates. The future of the Maine Loon Project will always depend on these dedicated count participants.

And what does the future of the Maine Loon Project hold? There is certainly no shortage of questions to answer about loon conservation. For example, are the loons we see in our count breeding or are they "bachelor" loons just hanging out for the summer? How many loon pairs fail to breed because they don't

have a territory? How successful are loons that do nest, and how many fail due to predators, people, weather or poor water quality? What role does habitat play in loon nesting? Is habitat a limiting factor for loons, and has habitat quality declined in the recent past due to shoreline development, recreational use or water quality? What else can we do to spread the word about Maine's loons and assure their future is secure?

To answer those questions and to continue our advocacy for loon conservation, we're employing Maine Audubon's strategy of working on three fronts—conservation, action and education. For example, we're planning, on the conservation front, to engage a group of loon-count volunteers next summer in tracking loon productivity and collecting data about habitat in order to compile an index of habitat quality at lakes across the state.

On the "action" front, Maine Audubon is advocating for a bill, submitted to the state legislature in the fall, that would enhance the lead sinker ban originally established in 2000. The legislature will also revisit the Great Ponds Task Force law that has allowed citizens to set surface-restrictions on lakes within their town borders. Hopefully that law, which was in effect from 1998 to 2001, will be extended indefinitely.

Public education efforts are also ongoing. The Maine Loon Project will update loon ecology presentations—popular with groups of all ages—to include video and audio clips.

Of course, how much more the project can do is largely determined by the funding it receives. Current core financial support from Maine Audubon members and Maine Loon Project participants as well as a few important foundations will always be an important source, and we thank the many individuals and groups who have contributed so generously over the last two decades of this project. Additional support from grants and foundations help us create special projects like our lead sinker outreach efforts or the "Living in Loon Territory" brochure, although in tight economic times those sources are harder to find.

But—valuable and determined, like the loons it studies and seeks to protect—the Maine Loon Project will persevere. We certainly have no shortage of work to do, nor inspiring and energizing volunteers to help us. And most importantly, we have a healthy population of loons whose future will benefit from our programs and progress.



Loon Q & A



JOHN MCKEITH

The loons on our lake didn't have chicks until the middle of August. Will these chicks be able to survive with such a late start?

Late hatches are almost always a result of re-nesting after the first nest fails. Second and even third nesting attempts in a breeding season are not uncommon. Chicks need about three months to learn to feed themselves and to fly. Usually they would be with their parents for most of that time, but late-hatching chicks may be left on their own earlier if their parents decide to migrate on schedule. These chicks will have a tougher time taking care of themselves, but may make it off the water before freeze-up if the weather remains mild and they have plenty of fish to eat.

We found a loon nest that was full of broken bits of eggshell. Does this mean a predator got the eggs?

Not necessarily. Broken shells in a nest can be a sign that the eggs have hatched successfully, especially if you see the membrane from the eggs somewhere in the general area of the nest. If the eggs are mostly intact, with a break or hole in one side, avian predators may be the likely culprits. Mammalian predators tend to break the egg up into more pieces, or may eat the whole thing, shell and all. Or they may carry the eggs away, leaving no evidence of their visit. Much of the time even veteran loon researchers are left speculating about the likely causes of nest failure.

Do loons impact recreational fishing opportunities?

Yes and no. Many anglers would tell you that the cry of the loon during an early morning on the water only adds to their fishing experience. Others might complain that loons take "too many fish." But depending on what you're fishing for, loons may or may not have an effect. Loons are adapted to twist and turn underwater, which makes them better able to catch fish like bass or perch that zigzag to get away from predators. Fish like trout, which swim fast and straight when making their escape, are better adapted to avoid the loon's maneuverability. Since loons generally select smaller fish to feed their young and even adults prefer fish no more than eight inches long, anglers should rest easy that most of the fish they want are "safe" from their loon companions.

Thank you. Take pride in Maine Audubon's accomplishments, because it is you and people like you who make them possible.

Your contributions make it possible for Maine Audubon to produce environmental programs and trips that educate and engage thousands of adults and children. Your support provides the resources we need to conduct scientific research, advocate for effective statewide conservation policies and manage our 3,000 sanctuary acres throughout the year. You provide the financial resources we need to continue to work for the conservation of wildlife and wildlife habitat in Maine.

Please support Maine Audubon with a gift to our annual fund this year.

For more information on the annual fund, planned giving or other giving opportunities, please contact Ginger Jones, Maine Audubon's director of development, at (207) 781-2330 ext. 232.

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2003 Loon Count Results

Region 1: York County

	Adults	Chicks
Balch Pond	2	2
Bunganut Pond	2	1
Estes Lake+	2	1
Great East Lake	5	2
Kennebunk Pond	4	2
Long Pond/PF	0	0
Mousam Lake	3	0
Ossipee Lake (Little)	6	0
Poverty Pond (Little)	2	2
Square Pond	5	1
Wilson Lake	3	1

Region 2: Cumberland County

	Adults	Chicks
Brandy Pond	6	0
Crescent Lake	7	2
Forest Lake	2	0
Highland Lake/WD	3	0
Long Lake/NP	14	1
Notched Pond	1	0
Panther Pond	6	2
Parker Pond/CS	2	0
Raymond Pond	10	0
Sabbathday Pond	0	0
Sebago Lake+	7	0
Sebago Lake (Little)	16	2
Thomas Pond	5	0
Trickey Pond	2	1
Watchic Pond	6	2

Region 3: Oxford County

	Adults	Chicks
Back & Middle Ponds (5 Kezars)	2	0
Barker Pond	3	0
Bickford Pond+	2	0
Bryant Pond (Christopher)	2	0
Clemons Pond	0	0
Cushman Pond	2	0
Hancock Pond/DM	6	0
Highland Lake/BD	18	1
Hogan Pond	0	0
Indian Pond	2	0
Keewaydin Lake	2	2
Keoka Lake	2	1
Keyes Pond	5	1
Kezar Lake	20	4
Lovewell Pond	1	0
McWain (Long) Pond	4	0
Moose Pond/DM+	8	0
North Pond/NW	2	2
Papoose Pond	1	0
Pennesseewassee Lake	6	1
Sand (Walden) Pond	2	2
Songo Pond	1	0
South Pond/GW	2	0
Stearns Pond	1	0
Twitchell Pond	2	1
Whitney Pond	0	0

Region 4: Androscoggin County

	Adults	Chicks
Allen Pond	2	1
Auburn Lake	11	1
Bartlett Pond	2	0
Bear Pond/HF	5	2
Middle Range Pond	2	0
No Name Pond	3	0
Pleasant Pond/TU	3	0
Range Pond (Upper)	4	1
Taylor Pond	0	0
Thompson Lake	19	0
Tripp Lake	3	0

Region 5: Southern Kennebec County

	Adults	Chicks
Androscoggin Lake	24	0
Annabessacook Lake	16	2
Buker Pond+	1	0
Cobbossecontee Lake+	31	7
Cochnewagon Lake	2	0
Echo Lake/FY	21	2
Jimmy Pond	0	0
Little Cobbossecontee Lk	0	0
Long Pond/SV+	3	1
Maranacook Lake	30	1
Narrows Pond (Upper)	2	0
Pickeral Pond	1	0
Pleasant (Mud) Pond	3	0
Pocasset Lake	7	2
Purgatory Pond (Little)	1	0
Sand Pond/LF+	2	0
Shed Pond	2	0
Torsey (Greely) Pond	13	0
Wilson Pond/WN	10	0
Woodbury Pond	7	4

Region 6: Lincoln County

	Adults	Chicks
Biscay Pond	4	0
Boyd Pond+	0	0
Clary Lake	2	1
Damariscotta Lake	57	0
Duckpuddle Pond	4	0
Dyer Long Pond	3	0
Havener Pond	0	0
Kaler's Pond	1	0
McCurdy Pond	2	0
Medomak Pond	2	0
Medomak Pond (Little)	2	2
Paradise Pond	2	0
Pemaquid Pond	16	1
Sherman Lake	0	0
Three Corner Pond	8	0
Travel Pond	0	0
Webber Pond/BM	5	0

Region 7: Knox County

	Adults	Chicks
Alford Lake	7	2
Chickawaukee Pond	2	0
Crawford Pond	12	0
Crystal Pond	4	0
Fish Pond/HP	2	1
Grassy Pond/RP	2	1
Hobbs Pond	7	1
Hosmer Pond	3	0
Lermont Pond	3	0
Megunticook Lake	16	4
Mirror Lake	1	0
North Pond/WR	2	0
Round Pond/UN	2	0
Sennebec Pond+	2	0
Seven Tree Pond	3	0
South Pond/WN	7	0
Tolman's Pond	2	0
Washington Pond	9	0

Region 8: Northern Kennebec/ Southern Somerset Counties

	Adults	Chicks
China Lake	65	1
David Pond+	8	1
Flying Pond+	2	0
Great Pond/BG	42	0
Hamilton Pond/BG	1	0
Ingham Pond	1	1
Kimball Pond	4	0
Long Pond/BG	32	5
McGrath Pond	4	0
Messalonskee Lake	29	0
Mill Pond/Sebasticook	0	0
Moose Pond/Great	33	6
Moose Lake		
Morrill Pond	4	1
North & Little Ponds	0	0
Parker Pond/FY	15	1
Pattee Pond	5	1
Salmon Lake (Ellis Pond)	5	1
Sibley Pond	3	0
Three Mile Pond	2	0
Togus Pond	17	0
Webber Pond/VB+	9	1
Wesserunnett Lake	14	4

Region 9: Waldo County

	Adults	Chicks
Basin Pond	1	0
Bowler (Belton) Pond	1	0
Cain Pond	2	2
Cargill Pond+	2	2
Chisholm Pond	0	0
Coleman Pond	7	2
Dutton Pond	0	0
Kingdom Bog	2	2
Knight Pond	2	1
Lawry Pond	3	0
Ledge Pond	0	0
Mixer Pond	2	2
Mud Pond/MV	0	0
Quantabacook Lake	6	0
Sanborn Pond	3	0
Sheepsfoot Pond	1	1
Smiths Mill Pond	0	0
St. George Lake	8	6
Swan Lake	6	0
Tilden Pond	2	0
Trues Pond	0	0
Unity Pond	12	2

Region 10: Hancock County

	Adults	Chicks
Abrams Pond	2	0
Alamoosook Lake	11	1
Bay Pond (Lower West)	0	0
Beech Hill Pond	5	1
Branch Lake	13	0
Craig Pond	2	0
Debec Pond	0	0
Donnell Pond	11	0
Eagle Lake/BH	2	0
Echo Lake/MD	5	0
First (Billings) Pond	3	0
Flanders Pond+	0	0
Floods Pond+	2	2
Georges Pond	1	0
Goose Pond/DH	4	3
Great Pond/FK	0	0
Green Lake/DH	14	1
Harriman Pond	1	0
Heart Pond	2	0
Hodgdon Pond	0	0
Hopkins Pond	5	0
Jordan Pond	2	0
King Pond	4	0
Long Pond/AR+	8	0
Long Pond/BP+	2	2
Long Pond/MD	4	0
Long Pond/SW+	2	0
Molasses Pond	13	2
Moulton Pond	2	1
Patten Pond (Lower)	12	2
Phillips Lake	9	0
Pierce Pond	1	0
Rift Pond	2	0
Rocky Pond/OR	3	1
Seal Cove Pond	0	0
Second Pond/BH	2	1
Silver Lake	16	2
Somes Pond	2	2
Spring River Lake	6	0
Toddy Pond/SU	19	2
Webb Pond	5	0
West Lake	7	0

Region 11: Rangeley Area

	Adults	Chicks
Beaver Mr. Lake+	6	1
Dodge Pond	5	0
Gull Pond	3	0
Haley Pond	2	0
Kamankeag Pond	2	0
Kennebago Lake (Big)	18	0
Loon Lake/DP	5	0
Mooselookmeguntic Lk+	23	0
Qumby Pond	3	2
Rangeley Lake+	25	2
Richardson Lakes	22	2
Round Pond/RA	2	0
Umbagog Lake+	5	1

Region 12: Farmington Area

	Adults	Chicks
Anasagunticook Lake	2	0
Clearwater Lake	7	0
Ellis (Roxbury) Pond	2	2
Embdon Pond+	4	0
Gammon Pond	1	0
Gilman Pond+	2	0
Hancock Pond/ED	6	0
Horseshoe Pond/CV	2	1
Howard Pond	2	2
Locke Pond	5	1
Mosher Pond	0	0
Norcross Pond	2	0
North Pond/CV	3	0
Pease Pond	2	0
Porter Lake	7	2
Sand Pond/CV	4	0
Varnum Pond	3	0
Webb Lake	10	2
Wilson Pond/WL	6	2
Worthley Pond	2	0

Region 13: Washington County

	Adults	Chicks
Barrows Lake	2	1
Beddington Lake+	1	0
Bog Lake	7	1
Boyd Lake	4	0
Cathance Lake+	9	1
Crawford Lake	4	0
Great Works Lake	1	0
Keenes Lake	3	2
Lambert Lake	3	0
Marks Lake (First)	2	0
Meddybemps Lake	13	3
Mud Lake (Upper)	2	0
Nash's Lake	8	0
Pennamaquan Lake	3	0
Pleasant Lake/T06	4	0
Pleasant River Lake	5	1
Pocomoonshine Lake	29	5
Round Lake/CH+	2	0
Schoodic Lake+	3	0
Shaw Lake	1	0

Region 14: Southern Penobscot County

	Adults	Chicks
Brewer Lake	15	2
Chemo Pond	9	1
Cold Stream Pond	17	0
Cold Stream Pond (Upper)+	2	0
Eddington (Davis) Pond	7	1
Etna Pond	5	0
Fields Pond	2	1
Holland Pond	0	0
Indian Pond (Big)	23	5
Indian Pond (Little)	2	0
Parks Pond	2	0
Pleasant Lake/ST+	8	0
Plymouth Pond+	6	1
Puffers Pond/Echo Lake+	2	1
Pushaw Pond	18	2
Pushaw Pond (Little)	13	0
Ripley Pond	2	2
Round (Grey) Pond	3	0
Saponac Pond+	1	1
Sebasticook Lake+	24	2
Sweets (Sweets) Pond	2	0
Wassookeag Lake	10	1

Region 15: Northern Maine

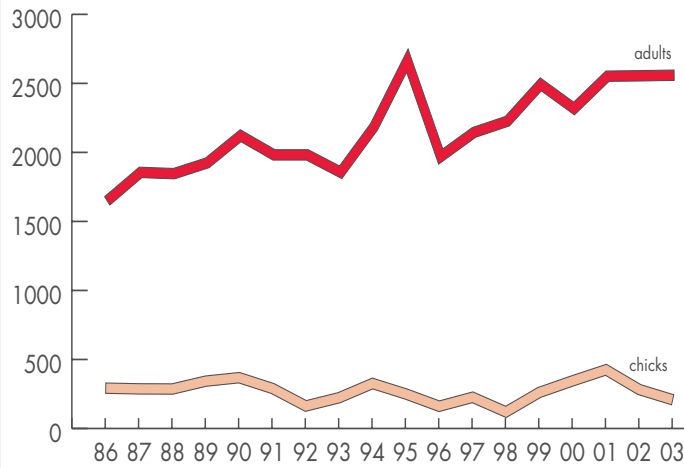
	Adults	Chicks
Bottle Lake+	2	2
Branch Lake (South)	18	2
Caribou Pond+	4	0
Carry Lake	0	0
Cochrane Lake	2	0
Conroy Lake	1	0
Eagle Lake/EL	26	0
Elbow Lake	4	0
Long Lake/SA+	17	0
Long Pond/LP	4	0
Long Pond/T07	6	2
Madawaska Lake	5	1
Mattaseunk Pond	5	0
Mattawamkeag Lake	17	0
Meduxnekeag Lake (Drews Lake)	9	1
Monson Pond	7	2
Mooshead Lake+	53	2
Mud Lake+	2	0
Nickerson Lake	4	3
Onawa Lake	12	3
Parlin Pond	5	0
Pemadumcook Chain Lk+	6	0
Plunkett Pond	4	0
Portage Lake	19	6
Prong Pond	3	0
Scraggly Lake/T7	5	0
Seboeis Lake	26	1
Wilson Pond (Lower)	6	0
Wilson Pond (Upper)	7	0

Region 16: Baxter State Park

	Adults	Chicks
Abol Pond	2	0
Branch Pond (Lower So.)	0	0
Dacey Pond	1	0
Draper Pond	0	0
Dwelle Pond	0	0
Elbow Pond	0	0
Grassy Pond/BSP	0	0
Hay Lake	13	2
Jackson Pond	0	0
Kidney Pond	2	1
Lost Pond/T3	2	2
Matagamon Lake	21	0
Nesowadnehunk Lake+	0	0
Rocky Pond (Little)	0	0
Rocky Pond/T3	0	0
Togue Pond (Lower)	3	2
Togue Pond (Upper)	3	2
Tracy Pond	0	0
Wassataquoik Lake	2	0
Webster Lake	0	0

Key: += incomplete coverage (lakes were not completely covered by counters in the allotted time).

Loon Count 1986-2003



In Tribute to Loughton Thayer Smith, Jr.

The Maine Loon Project lost a friend and supporter last spring. Loughton Thayer Smith, Jr., who participated in the annual loon count from 1985 to 2000, lived on Long Pond in Bucksport. He had a long and distinguished career in advertising and sales, but was passionate about the lake where he lived in his retirement years. An avid boater and fisherman, he enjoyed rowing and casting on the lake as well as observing its wildlife.

Loughton's passion for loons became apparent in 1985, when he signed up for the count. Ruth Sergeson, then loon count coordinator for Hancock County, remembers he was dedicated and accommodating, going well beyond his job as loon counter to report what loons were doing before and after the count. He called Ruth every summer with observations and questions, and she was pleased to gain a friend who loved loons as much as she did.

Loughton will be sorely missed by his friends and family, including the loons. His family generously asks that tributes in his memory be made to the Maine Loon Project at Maine Audubon, to continue his commitment to loon conservation.

You don't have to be a loon counter to help Maine's loons. There are a number of things anyone can do to protect Maine's majestic waterbird:

Enjoy loons from a distance; stay clear of loons and their nesting areas when boating, fishing and picnicking.

Keep pets from running wild along lakeshores and harassing loons and other wildlife.

Post "Look Out For Loons" signs (available from Maine Audubon) at boat landings and other access points.

Use lead-free fishing tackle, and encourage fellow anglers to do the same.

Collect loose monofilament line. Loons die every summer after they are hopelessly entangled in lost fishing line.

Sponsor a loon slide show for a local group and distribute educational materials to lakeshore residents in your community.

Protect water quality by avoiding fertilizers and detergents containing phosphate and creating buffer zones along lakefront property.

Keep milfoil and other invasive exotic plants out of Maine's lakes by keeping your boat and trailer "weed free."

Join your local lake association and the Maine Congress of Lake Associations. Be active in association activities and workshops.

Make a donation to the Maine Loon Project. The Maine Loon Project operates almost entirely on generous donations from people who care about future of loons in Maine. Your contributions to the project and your membership with Maine Audubon help assure continued success in loon conservation efforts.

Loon Conservation Resources

Want to learn about loons online?

For a great educational site that tracks migration each spring, check out www.learner.org/jnorth/spring2004/loon. Find out about loon conservation in Canada at the Canadian Lakes Loon Survey site, www.bsc-eoc.org/dlsmain.html.

Want to help educate people?

Call Maine Audubon at (207) 781-2330 for copies of Living In Loon Territory, a poster and brochure detailing how anglers, homeowners and boaters can coexist with their loon neighbors. Or ask for Let's Get the Lead Out, a brochure that explains the rationale behind Maine's lead sinker legislation. Distribute it to groups with an interest in lakes, fishing and loons.

Looking for loon count results?

Results from the Maine Audubon Loon Count can be found at www.pearlmaine.org. PEARL is produced and maintained by the Senator George J. Mitchell Center for Environmental and Watershed Research at the University of Maine. The site brings together a wide variety of information from partner organizations on over 5,700 Maine lakes.

Want to read more about loons or hear their haunting call? Visit a Maine Audubon Nature Store for dozens of books, CDs and other loon items, or see the order form below.

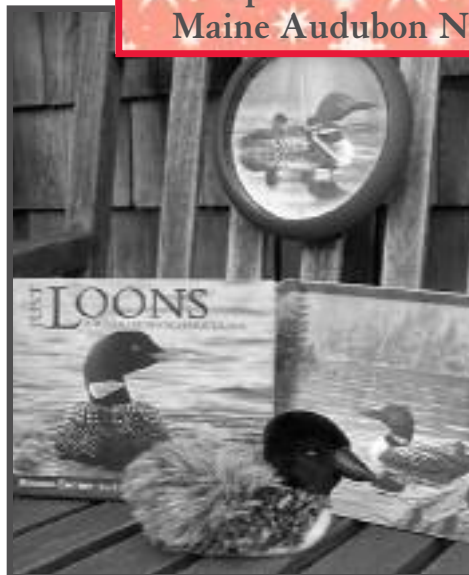
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 Birding, botanical gardens and archeological ruins
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Call (207) 781-2330, ext. 217 or 215, for details and itineraries.

Shop for the Holidays at the Maine Audubon Nature Store



"Just Loons: A Wildlife Watchers Guide," with CD \$35 The ultimate guide to finding, watching and understanding loons. Updated with the latest research and a CD of all the loon calls.

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Loon Napkins \$3.50 Matching pack of 20 3-ply napkins completes your party.

Call of the Loon Clock \$14.95 A soothing loon call announces each hour on this 8" clock.

Lottie Loon \$13 Lottie will intrigue you with her realistic call when you squeeze her gently.

See page 5 for more gift ideas and an order form.



The last chick's beak begins to break through the egg



A loon chick stays tucked under an adult's wing. One egg has not yet hatched.



A close-up of one of the newborns.

BIODIVERSITY RESEARCH INSTITUTE

Loon Cam Introduces a Dose of Reality

A four-loon family was an unwitting participant this year in Mother Nature's own online reality show when Falmouth-based BioDiversity Research Institute constructed the first-ever "loon Web cam." Accessible last May and June was a 24/7 broadcast of loon nest-building, egg-laying and incubation and, finally, the joyous hatching of two fuzzy black chicks.

Wing Goodale, biologist at BioDiversity and coordinator of the program, set up a video camera on a lake in midcoast Maine, aiming it at a nesting site that loons had used frequently. At a Web site hosted by the midcoast community news site Village Soup, hundreds of thousands of people from all over the world watched the broadcast, which received extensive media coverage in Maine and from CNN and newspapers and magazines as far away as British Columbia.

To guarantee 24-hour visibility, BioDiversity's loon cam used infrared technology to film at night. On May 20, viewers saw the first egg being laid in the nest, where it sat alone in cold, damp weather for about 48 hours before the second egg was laid and a parent started incubating both eggs. Biologists were surprised to see that the incubating loon stays awake and alert throughout the

night, perhaps watching and listening for predators.

Watching anxiously from their remote computer for 27 days, the biologists worried the first egg had succumbed to the elements during the two days it sat alone, but on day 28 the chick hatched, followed 12 hours later by its sibling.

The loon cam recorded several dramatic first encounters between the chicks. The first chick fought aggressively with its younger sibling for about four hours in the nest, and then, after they left the nest, for another six hours in the water. The loon parents did not seem interested in their offspring's squabble, and the younger sibling was able to fight back and hold its own. After this initial period of tussling, the two appeared to get along without incident for the rest of the show's season.

Although live streaming video has ceased, the loon cam is still popular—more than 75,000 visitors viewed a gallery of photo stills the first week it was posted at www.villagesoup.com/loon. Loon cam followers will be happy to learn that both chicks survived the summer, and perhaps will return in front of the camera as adults. Look for a return of the loon cam in late May 2004, and for possible spin-off series, "goose cam" and "duck cam," which are in the works.

— Susan Gallo

Watching anxiously from their remote computer for 27 days, the biologists worried the first egg had succumbed to the elements during the two days it sat alone, but on day 28 . . .

Loon counters: We want you!

Want to keep getting the latest news about Maine's loons?

Then join Maine Audubon and receive *Habitat* regularly. It brings you even more than *The Loon News* did.

In the past, you've received count results and other information from the Maine Loon Project in Maine Audubon's *The Loon News*. Beginning with this issue of *Habitat*, the quarterly journal of Maine Audubon, that information will appear instead in these pages and online at www.maineaudubon.org.

Published twice as often as *The Loon News* was, *Habitat* ensures you timely updates about loons, the Maine Loon Project and Maine Audubon's work statewide. It's filled with news about Maine's wildlife and people working for wildlife conservation—*people like you*.

You'll receive *Habitat* by becoming a member of Maine Audubon—and that comes with even more benefits (see below). Plus, your membership in the state's leading conservation organization will help us protect loons and a wide range of Maine's natural treasures, while educating Maine's next generation of environmental stewards.

Thanks for making our first two decades of loon conservation really count—and thanks for joining and supporting Maine Audubon!

MEMBERSHIP BENEFITS



- Access to 11 sanctuaries and over 3,000 acres statewide
- Quarterly journal *Habitat*
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- Discounts at nature stores and Audubon sanctuaries nationwide*

Yes, I want to support Maine Audubon's work and keep getting the latest news about Maine's loons!

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