2024

LOON CALLER

VERMONT CENTER FOR ECOSTUDIES

Vermont Loon Conservation Project

Floods, Water Clarity, and Climate Change

Loons Face a Murky Future

BY ALEX JOHNSON & ERIC HANSON

When an intense July storm dropped eight inches of rain on Ludlow last summer, the Black River jumped its banks and surged through downtown, leaving mud-packed rubble in its wake. As the extensive damage drew nationwide media attention, a quieter loss began to play out three miles upstream. That's where Lake Rescue's first-ever loon chick had weathered the storm, but would not survive its aftermath.

Although the chick avoided being swept away in the flood, the deluge had gathered everything in its path and turned Lake Rescue into a pea-soup sludge. When the chick's parents couldn't find food in the murky waters, they left, and the chick soon succumbed to an infection brought on by lack of food.

This tragic story illustrates the dangers extreme flooding events pose to loons, beyond the obvious risk of nest inundation. As temperatures rise

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Decreases in lake clarity due to severe storms make it harder for loon parents to find food for their chicks.

The Harvey's Lake loon chick in the rehabilitation swimming pool at the Center for Wildlife.

Collaborations Make Loon Rescues Happen | BY RACHEL MCKIMMY & ERIC HANSON

In 2023, VCE rescued 11 loons that were poisoned or in peril, eight of which were successfully released back into the wild. The relatively high success rate is a credit to collaborations between VCE staff, community scientists, and skilled professionals at research, rehabilitation, and veterinary facilities across the Northeast. Two stories exemplify their deep dedication to loons, even the ones that might not make it.

VCE community scientists are on the front lines, often receiving the first call about loons in trouble. At Harvey's Lake on Friday, July 28, that person was Jan Parsons. The monitor at the public swimming beach called Jan about a loon chick wandering the parking lot a quarter mile from the shoreline.

After keeping the loon in her bathtub for the afternoon, Jan brought it to the Vermont Institute of Natural Science (VINS). Staff members Bren Lundborg and Grae O'Toole utilized their new waterbird pool to house and monitor the chick. An X-ray on Monday revealed a sinker and hook inside the chick, and its lead levels had tripled over the weekend. Once lead enters a loon's gizzard, it dissolves into their bloodstream, leading to lead poisoning. For most affected loons, it's too late to help them once they've beached. Poisoned loons experience tremors, swim in uneven circles, and are unable to fly. By the time symptoms of severe lead poisoning appear, it cannot be cured. But since this loon had recently swallowed the lead, there was some hope for survival if the material could be removed.

The chick was transferred to the Center for Wildlife, where Shelley Spanswick and her team put the bird under anesthesia to lavage its gizzard. It took two attempts over two days to wash the lead sinker out, after which rescuers administered a treatment for lead poisoning called chelation, using a medicine that binds to lead and flushes

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The Vermont Center for Ecostudies advances the conservation of wildlife across the Americas through research, monitoring, and community engagement.

The Vermont Loon Conservation Project (VLCP) is a joint program of VCE and The Vermont Fish & Wildlife Department.

VLCP restores and maintains Vermont's Common Loon population through monitoring, management, education, and research.

Volunteer information and VLCP publications are available on the VCE website: vtecostudies.org

Communications about the VLCP and Loon Caller may be addressed to:

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Loons do adapt to live and thrive in murkier waters, but this is the exception, not the rule.

and rainfall amounts vary drastically each year, loons' nesting success remains at the mercy of increasingly erratic weather patterns. Currently, loon populations in the Northeastern U.S. are stable or even increasing. Vermont chick survival rates have hovered around 70% for nearly 30 years; however, loon biologists across the bird's range, including VCE's Eric Hanson, are wondering what future a warming climate may bring.

In Wisconsin, the Loon Project's Dr. Walter Piper documented a 27% decline in chick survival over the past 25 years. Initial research points to water clarity as the likely culprit. "Recent decreases in lake clarity seem to be making it difficult for adult loons to find food for their chicks and are likely to blame for the higher chick mortality," Dr. Piper states on the Loon Project's website (loonproject.org). "Moreover, warmer temperatures and heavy rainfall lead to lower water clarity. So, as we had feared, climate change seems to be having negative impacts on loons."

In addition to the lost chick on Lake Rescue, VCE's loon team has documented a few starving older chicks in recent years on Ricker and Wolcott ponds. In all these cases, Hanson suspects that water clarity contributed to their low weight by limiting feeding opportunities. On Ricker Pond, an underweight, 10-week-old chick went over the dam in late August 2023. This chick's poor condition was most likely due to decreased water clarity caused by July's torrential rains. (Read more about this chick's rescue and recovery in "Collaborations Make Loon Rescues Happen.")

However, water clarity is only one piece of the flood-risk puzzle for loons. The July 2023 flooding inundated six out of Vermont's eight active nests not built on rafts; had the storm occurred three weeks earlier, the loss could have been upward of 40 nests. In 2019, a record 13 nests also flooded, accounting for 37% of nest failures that year.

"As I paddled around Lake Rescue a few days after the flooding event, I intuitively did not want to put my hand in the water," recalls Hanson. "How could anything live in this?"

Loons can adapt to live and thrive in murkier waters, but this is the exception, not the rule. As climate change emerges as a threat to loons, reducing its impact will require vigilance and serious effort.

Hanson says, "At a local level, people living on lakes can help improve water clarity by reducing the amount of organic and inorganic matter—especially fertilizers and human and pet waste—flowing in from adjacent properties, as well as take steps to revegetate shorelines. For the rest of us, we can keep supporting loon conservation and research. Ultimately, our successes in these areas will hopefully make Vermont's loon populations more resilient to the changes ahead."

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PROVIDED BY VINS STAFF

An X-ray of the rescued Harvey's Lake chick revealed a sinker and hook.

it out through urine. This was the first time that this procedure was performed on a Vermont loon.

After a week at the Center for Wildlife, Emily Fellows from the Biodiversity Research Institute (BRI) took the loon to an enclosed facility on a lake where they could feed and monitor it closely. The chick seemed to be doing well for 10 days, then passed away suddenly. Inga Sidor of the New Hampshire Veterinary Diagnostic Laboratory found that the loon had died of a bacterial infection in the lungs, likely brought on by a combination of lead poisoning and trauma. Although the ending was not what the rescuers had hoped for, everyone learned from and was inspired by the collective effort.

In mid-August 2023, Bren and Grae had the chance to use their new pool at VINS for another loon chick. A local resident spotted a chick over the dam downstream from Ricker Pond in Groton. After searching the area, VCE Loon Biologist Eric Hanson, VCE Seasonal Loon Biologist Eloise Girard, and 13-year-old aspiring naturalist Nora found the chick on the bank next to the fast-flowing stream. After two rescue attempts, the chick was transported to VINS for evaluation.

The chick was underweight, and its feathers were badly neglected and no longer waterproof. The loon might have been weakened from the flooding that occurred in July. VINS had live bait delivered by BRI, which helped the bird start eating and gaining weight. The bird began preening as it grew stronger, and its feathers recovered. Through the care of BRI and VINS, the chick fully healed and was safely transferred to BRI and released on Buckley-Dunton Pond in western Massachusetts in mid-September. It fledged and flew off by September 28.

On October 19, BRI Loon Program Director Lucas Savoy reported that their seasonal staff sighted the Ricker Pond chick on Stockbridge Bowl in Stockbridge, Massachusetts, a lake approximately nine miles west of its release lake. The chick appeared to be healthy and thriving.

While these stories had different outcomes, both demonstrate the number of people and amount of effort required to rescue loons. Thank you to everyone who teamed up to help loons in 2023!

SUMMARY

Providing Insights Into the Intricacies of Loon Nesting

As placing cameras at nest sites becomes increasingly common and accessible, we are beginning to observe the timing of loon incubation like never before. Although scientists have been studying this process for years, new technology like streaming cameras, or motion-activated game cameras, allows us to record events down to the minute!

Cameras deployed by the Loon Preservation Committee (loon.org) in New Hampshire last season have captured interesting insights into the timing of loon egg-laying, incubation, and hatching. The time between laying the first and second egg was, on average, 55 to 65 hours. It was also observed that loon chicks hatch about 26 hours apart, despite the eggs being laid two to three days apart. This could be caused by the sporadic incubation observed until both eggs are laid, which may slow down the development of the first egg.

Read the full article in the Loon Preservation Committee's fall 2023 newsletter (vtecostudies.info/lpc-newsletter).

Cameras at nest sites have provided insight into loon incubation and hatching.

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HOW YOU CAN HELP

Please support the Vermont Loon Conservation Project and Vermont's loons through a tax-deductible contribution to the Vermont Center for Ecostudies today.

YOUR DONATION SUPPORTS:

- Statewide loon monitoring
- Loon nesting platforms and nest warning signs
- Volunteer coordination
- Public outreach programs
- Loon rescues
- Research on threats to loons

Constituents receive *Loon Caller* and VCE's biannual *Field Notes*.

Mail your donation to:
Vermont Center for Ecostudies
PO Box 420, Norwich, VT 05055

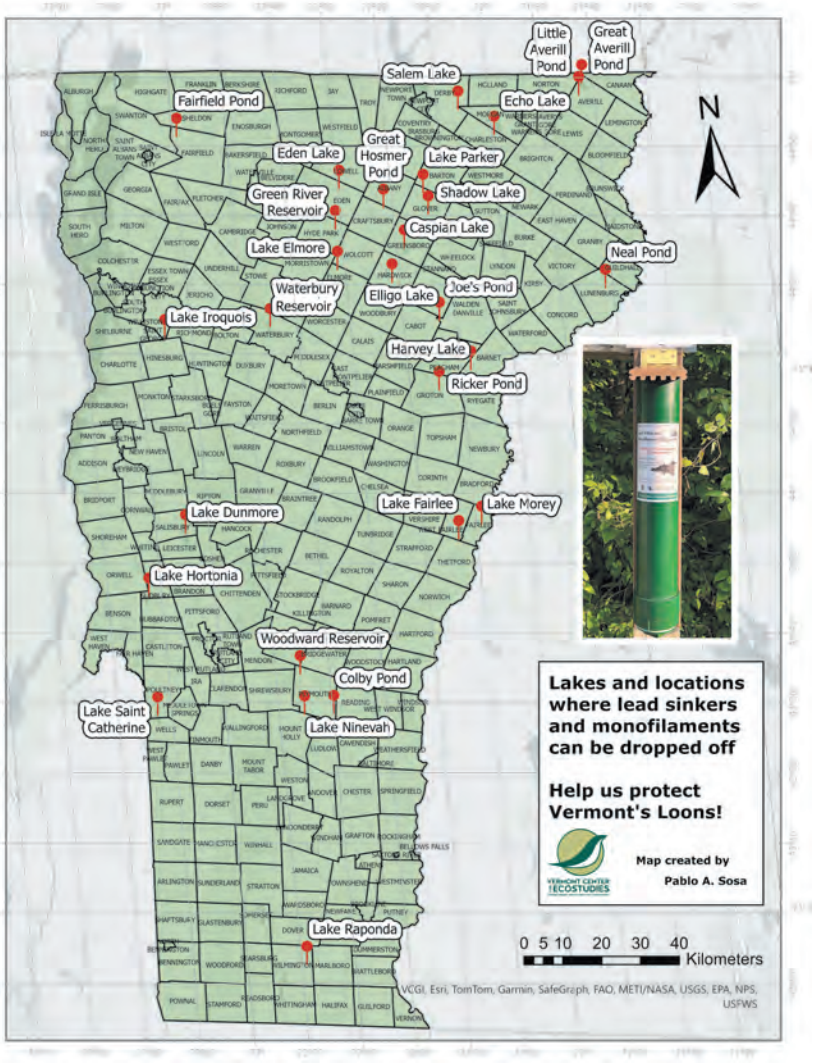
Or donate online:
vtecostudies.org/give
(Please include a note stating the donation is for VLCP.)

SHOW YOUR SUPPORT

VLCP is funded in part by the Vermont Fish & Wildlife Department's Nongame Wildlife Fund.

Please support the Nongame Wildlife Fund by purchasing the Conservation License Plate and through the tax check-off on your VT income tax form.

VLCP thanks the many volunteers and contributors who make loon conservation possible in Vermont.



DISPOSE OF ALL THAT LEAD

Fish Lead Free

VCE Seasonal Loon Biologist Eloise Girard has been busy working with lake associations and their public access greeter programs this past year, building and installing lead collection tubes across the state. We're thrilled to announce that they are up and running this summer. Spread the word to all your angler friends, and let's stop lead from being the primary cause of loon mortality in Vermont. Visit fishleadfree.org/vt for more information.

Lead tackle collection tubes are located at the following boat access areas:

Caspian	Harvey's	Ninevah	Woodbury
Dunmore	Hortonia	Parker	Woodward
Echo (Charleston)	Iroquois	Raponda	
Elmore	Joe's	Ricker	Many solid waste collection sites will accept lead for recycling.
Fairfield	Little Averill	Shadow (Glover)	
Fairlee	Morey	St. Catherine	
Great Averill	Neal	Waterbury	

Please keep an eye on vtecostudies.info/loons-and-lead for an updated list as more sites become available.

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