



Otter Tracks

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LEAD IN AMMUNITION A Call for Dialog

Guest Editorial by David Mears,
Executive Director, Audubon Vermont

When we think of lead poisoning, we most often think of the presence of lead in drinking water pipes or lead paint in older houses. Another risk, less frequently discussed, is the potential harm from the use of lead in ammunition. Among the exposure pathways from the use of lead-based ammunition are consumption by people of lead fragments remaining in the meat, or by wildlife of lead left in animal remains. As we have come to understand over the past few decades, even exposure to low levels of lead have a range of negative impacts, such as increasing a child's risk of acquiring learning disabilities or an adult's risk of dying from a heart attack or stroke. The risk of lead exposure on wildlife mirrors the effect on humans, with the potential for consumption of lead ammunition to cause individual or population level impacts. An example of a significant population level risk is the California Condor, where lead consumption from animal remains poses a threat to this species already on the brink of extinction.



birds of prey, such as the Bald Eagle, or other birds, like the Common Raven, which scavenge dead animals as a food source. We are fortunate that these species have stable populations or are increasing due to our broader conservation efforts. We are not, however, out of the woods. The ongoing loss of habitat to development, global climate disruption, and other threats present ongoing risks to the ecological health of our forests and watersheds, and so to all wildlife in Vermont. Further, we do not have to accept even individual-level impacts from lead-based ammunition if there are reasonable alternatives. Because of a federal law, we have already made the shift to non-toxic alternatives for ammunition used to hunt waterfowl. We need to talk about extending that shift to include upland hunting as well.

Vermont's sportsmen and women justifiably pride themselves as stewards of the environment, and would never knowingly expose their families to the risk of eating lead. In other states, wildlife agencies and outdoor sporting groups with cultures similar to Vermont's have begun to use education and voluntary programs to drive a shift away from the use of lead-based ammunition. An example of this type of dialogue is represented by the North American Non-Lead Partnership, in which the partners are working together to better understand the risks from the use of lead-based ammunition and encouraging hunters to use alternatives. Audubon Vermont counts hunters as welcome members of our community and stands ready to engage with our partners in the outdoor sporting community and at the Department of Fish and Wildlife to participate in this important dialogue. 🐾

Vermont is due for a dialogue about ways to reduce or phase-out the use of lead-based ammunition in Vermont. In other states, a growing understanding of the risks from lead exposure has led sporting groups, wildlife agencies, and public health and environmental advocates to engage in a serious conversation about this issue. The residents of our state of green mountains and silver waters have a similar opportunity to address this challenge in a way that respects both Vermont's long tradition of hunting and our leadership as a state committed to protecting public health and the environment.

In Vermont, the birds most likely to suffer from lead poisoning from ammunition are



OCAS Mission:

To protect birds, other wildlife and their habitats by encouraging a culture of conservation within Addison County.

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Our Safety Net

Editorial by
Warren King



VIEWPOINT

“Not only is our safety net shrinking, it’s becoming more threadbare and holes are appearing”. This was Dr. Sandra Diaz’ assessment of the current health of the world’s biota. Diaz is an ecologist at the National University of Cordoba in Argentina and a co-chair of the Global Assessment Report on Biodiversity and Ecosystem Services. This report is a product of IBPES, the biodiversity equivalent of the Intergovernmental Panel on Climate Change. The 1500-page report, published May 6, 2019, assessed the health of the planet’s biodiversity for the first time since 2004, concluding that one million species are at risk of extinction.

The report’s 145 authors from 50 countries incorporated indigenous and local knowledge as well as 15,000 peer reviewed publications and reports, concluding that about one million of the roughly 8.1 million species thought to occur presently on earth are in danger of extinction in the next 30 to 50 years. Twenty-five percent of species on the IUCN Red List are threatened. These are species whose status is reasonably well known. Ten percent of all the other undescribed, poorly known, or unknown species, most of which are insects, are thought to be threatened.

The problems facing the world’s biota are multiple. On land, they include deforestation, overfishing, bush meat hunting and poaching, climate change, pollution and invasive alien species. At sea, ocean acidification, overfishing, dead zones, massive plastic accumulation, and coral bleaching are some of the worst problems induced by human life-styles.

Human activities have caused severe alteration of more than 75 percent of the earth’s land area and more than 66 percent of the ocean area. Ecosystems are deteriorating at a time when we are finally acknowledging our role in causing that deterioration. We depend on each other, plants and animals alike.

To give an example of how far out of balance the system is, ten thousand years ago the weight of all the humans on earth was one percent of the total weight of all land mammals. Presently the weight of all humans is 32 percent of the weight of all land mammals, the weight of humans’ livestock is 67 percent, and the weight of all wild mammals is one percent.

Among the actions we can take to bring human impact into better balance include having fewer children, having them later, eating lower on the food chain, and providing access to family planning for everyone.

One strategy to watch involves a target, promoted by 100 international conservation organizations, of protecting 50 percent of the land area of the planet for only sustainable uses by 2050, with an interim target of 30 percent by 2030. Any way we slice it, dealing with the current and future political situation will have to be a major part of any solution. We all need to get to work. 🐾

How Some Fish Travel

Small fish, including killifish and carp, have been known to show up in ponds or even puddles without any aquatic connection with other water bodies. Biologists have surmised that the fish or their eggs were carried in mud attached to waterfowl’s feathers, feet and webbing. Intrigued by the presence of small flowering plants in the feces of swans, an international team of biologists carried their conjecture one step further by feeding Brazilian killifish eggs to swans. While most of the eggs were killed during passage through the swans’ intestines, five out of the 650 eggs came out the other end still alive. Three of the five eggs developed further. One egg hatched 49 days after passing through the swan’s gut; it survived to adulthood. The biologists hypoth-

esize that swans don’t thoroughly process all their food. Instead, then make room for more food. Also, killifish are known for surviving in a state of hibernation if the mud in which they are found dries up.

The research team is presently looking at the possibility of carp eggs surviving a trip through a swan’s intestines.

It appears that at least some fish can be transported to a new location on the inside of waterfowl and live to tell about it. 🐾



Wrapping up the Spring 2019 Environmental Education Grants

By Carol Ramsayer



A Wren's Nest preschooler explores a classroom puddle with a new collecting net.

Photo by Suzanne Young

One of the most rewarding times for the OCAS Board is when teachers submit the required end-of-grant summaries of their projects. It's interesting to see the variety of methods teachers choose. Some write detailed explanations, others include student comments, and most include photos. All

reflect on the meaningful outdoor learning experiences for their Addison County students made possible by the OCAS members and friends who contribute to the Environmental Education Grants program through Bird-a-thon donations. Below are summaries of 8 of the 16 funded projects.

Addison Central *Grade 1&2* – As a follow-up to fall bird activities at their school, students visited Audubon Vermont and the Birds of Vermont Museum, taking to the woods to learn first-hand about bird ID and nest construction. A highlight:

“When we played the Phoebe recording the real bird answered us. The students asked, ‘Was that the real bird?’ They couldn’t believe that the real bird was answering us back!” (teacher Sharon Cram)

Bridge School *Grades K-6* – See Jen Grilly’s article, pg 4.

Bristol Elementary *Grade 1* – OCAS volunteers visited the school in early spring, leading stations about nests, bird carving, and feet and beaks adaptations. The children’s follow-up was a field trip to Audubon Vermont and The Birds of Vermont Museum. “The kids all had a wonderful time and deepened their learning about Vermont birds. Thanks again for providing this wonderful hands-on learning opportunity for our first graders!” (teacher Jackie Raymond)

Lincoln Community School, *Grades 5&6* – The grant supported a unique field trip where students actually went out on the research vessel *Melosira*, collected Lake Champlain water quality data, then followed up in the UVM’s Rubenstein Lab.

“We were able to connect this experience to our study about water and our science curriculum. The trip on the lake and lab exposure enhanced fifth and sixth graders’ education beyond what we could have possibly achieved in our classroom.” (teachers Tiffany Dennison and Devin Schrock)

Mary Hogan Elementary, Grade 1 – Grant funds paid for a live bird visit from Vermont Institute of Natural Science.

Raptor adaptations were the focus. Teacher Melissa Flint described the visit as “fantastic” and told how the VINS teachers used “live falcons, hawks and owls to provide a lens through which we examine food webs, predator-prey relationships and the interdependence of the systems that support life.”

Ripton Elementary *Grades 1-4* – Students learned about biomimicry through a visit from the Southern Vermont Natural History Museum. According to teacher Charlotte Holmquist, students experimented “with different natural materials to assess their potential as models for water resistance and aero/hydrodynamics.” Four live animals illustrated how their adaptations “have given inventors ideas on how to design new technology.”

Shoreham Elementary *Grades 3-6* – The Dead Creek Wildlife Management Area has recently opened an interactive nature center along Rt. 17 in Addison. Nancy Wollum’s grant paid to bus Shoreham students there for a morning centered around the concept of stewardship. Students explored the center and the surrounding area, led by teachers, Fish and Wildlife staff and OCAS volunteers. It was exciting to see how this new, nearby center can serve local schools, and hopefully draw in families as well. One student’s evaluation: “My favorite part of the trip was the nature walk because I love to be outside and I love animals.”

Weybridge Elementary *Grades 5&6* – Students participated in Lake Champlain Maritime Museum’s Paddling Ecology program, where they investigated human impacts on water quality. Finding an abundance of plastic detritus brought home the reality of that critical issue. Teacher Christina Wadsworth stated, “The field trip continues to be a wonderful opportunity for students to challenge themselves in boats, in investigating insects and aquatic organisms, and in their team-building behaviors.”

Wren’s Nest Forest Preschool – Grant funds were used to purchase nets and magnifiers for this nature preschool. “The students at the Wren’s Nest preschool are very inquisitive and can spend hours at the many bodies of water on the property... a beaver pond, an ephemeral stream, and plenty of puddles. ...The woods, meadows, and wetlands are their classroom. (administrator Tasha Ball)

Thank you to this year’s grant winners for having such enriching experiences be a part of their students’ education. It is exciting to note that of the 16 grants that OCAS at least partially funded this year, 8 involved venues or presenters that are completely new to the grants program. Thank you, teachers - we can all benefit from knowing more about the rich experiences available to Addison County students. 🐾

Bridge School Teacher's Thanks

By Jen Grilly

Bridge School is grateful to Otter Creek Audubon for funds to travel as a school to the Salisbury Fish Hatchery to see where the eggs for our Trout in the Classroom (TIC) project were cultured. We then traveled to Sycamore Park to release our trout. This grant allowed our students to create meaningful connections to an experiential project within the classroom.

Under the theme of "Identity" and through our TIC unit, we teamed up with multiple community groups and members to create an enriching program of six trips to explore water in its different forms. These included a trip to Salisbury Fish Hatchery, two trips to a vernal pool, a trip to the headwaters of the New Haven River, a bus tour following the river to its confluence with Otter Creek, and culminating with our trout release at Sycamore Park.

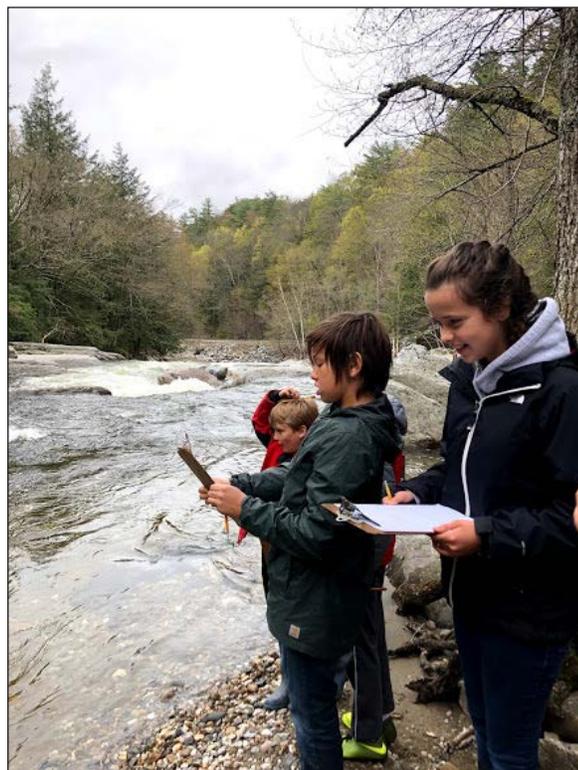
The Salisbury Fish Hatchery trip allowed our students to observe native trout at dif-

ferent stages in their life cycle. Students loved seeing how big the fish grow, given the right variables. We learned about the fishes' feeding habits and about the eggs that are provided to the Vermont schools that participate in TIC.

Teaming with Wild Middlebury students from Middlebury College, we took trips in April and May to a vernal pool near Snake Mountain to count and identify amphibians and observe the pool's physical features. The students loved seeing the pool come to life as eggs hatched, and we found juvenile amphibians.

With help from OCAS' Craig Zondag, our older students took a field trip to observe and compare different parts of a river. We started near the headwaters of the New Haven River in Bristol. Students observed water flow, elevation, size, wildlife and riverbanks. We followed the river to Sycamore Park where we made similar observations, noting how the river changed and why different types of trout prefer different parts of the river. We finished at River Bend Campground, where the New Haven River meets Otter Creek. Instead of just reading how the river changes from its source to its mouth, students actually observed the changes themselves.

Our final field trip was our trout release at Sycamore Park. We began this journey



Bridge School students gathered data along four parts of the New Haven River, making note of river changes along the way. They learned why different trout species preferred different sections of the river. Photo by Bridge School teachers.



All Bridge School students traveled to the Salisbury Fish Hatchery to see where their Trout in the Classroom fish eggs had been cultured. Photo by Bridge School teachers

with 133 eggs in January. Students were responsible for keeping optimal conditions within the tank, testing its water weekly. In May, we released 25 fry into the New Haven River with the help of Paul Urband and Doug Zehner, volunteers for Trout in the Classroom.

This series of trips, with transportation for the whole school to Sycamore Park and the Salisbury Fish Hatchery, gave students an opportunity to connect with their community and see how water in different forms creates, supports, and enhances life for the surrounding ecosystems.

We are excited to continue our Outdoor Environmental Education and Leadership programming next year and hope to continue to partner with Otter Creek Audubon. 🐾



September 2019 – January 2020 OCAS Calendar of Events

SUNDAY, SEPTEMBER 15 **HAWK WATCH AT BUCK MOUNTAIN,**
11 AM – 2 PM Waltham. Meet at 10:30 a.m. at
 Vergennes Park and Ride, junc-
 tion of Routes 22A and 7, Vergennes, or at 11 at the trailhead
 on Route 66. Carpool to Route 66 if possible; parking there
 is extremely limited. Led by Ron Payne and Warren King.
 Call Warren at 388-4082 for more information or if in doubt
 about the weather.

SATURDAY, OCTOBER 5 **DEAD CREEK WILDLIFE DAY.** A free
9:30 AM – 4 PM celebration of the Champlain
 Valley's and Vermont's wildlife for
 all ages. Events include bird-banding, soap and decoy carving,
 Vermont's snakes and lizards, and many more. Schedule avail-
 able from Fish and Wildlife Department at least a week before
 event. Call 802-241-3700 for information.

THURSDAY, NOVEMBER 14 **OCAS ANNUAL DINNER & MEETING.**
5:30 – 8:45 PM Reservations are needed for 6 p.m.
 dinner. Dinner will be at the
 American Legion at 49 Wilson Rd. off Boardman St., behind
 G. Stone Motors south of Middlebury on Route 7. Call Sue
 Rasmussen at 897-5411 for reservations. OCAS members will
 receive a separate invitation by mail. No fee for talk at 7:15.

ADDISON COUNTY CHRISTMAS BIRD COUNTS

SATURDAY, DECEMBER 14 **FERRISBURGH CHRISTMAS BIRD**
COUNT. Call Mike Winslow at
 877-6586 for details.

SATURDAY, DECEMBER 14 **MT. ABE CHRISTMAS BIRD COUNT.**
 Call Randy or Cathy Durand at
 453-4370 for details.

SUNDAY, DECEMBER 15 **MIDDLEBURY CHRISTMAS BIRD**
COUNT. Call Jim or Kris Andrews
 at 352-4734 for details.

SATURDAY, JANUARY 4 **HINESBURG CHRISTMAS BIRD COUNT.**
 Call Paul Wiczorek at
 434-4216 for details.

MARSH, MEADOW AND GRASSLAND WILDLIFE WALKS

A monthly joint OCAS-MALT event. We invite community members to help survey birds and other wildlife at Otter View Park and Hurd Grassland. Meet at Otter View Park parking area, Weybridge Street and Pulp Mill Bridge Road, Middlebury. Shorter and longer routes possible. Beginning birders are welcome. Come for all or part of the walk. For information call 388-1007 or 388-6019.

SATURDAY, SEPTEMBER 14, 7-9 AM
SATURDAY, OCTOBER 12, 8-10 AM
SATURDAY, NOVEMBER 9, 8-10 AM
SATURDAY, DECEMBER 14, 8-10 AM

Grant Applications Available Soon!

Applications for the 2020 Environmental Education Grants will be distributed at the end of September through school principals and on the OCAS website. Deadline this year will be Monday, November 4, 2019. Spread the word to your teacher friends! 🐾

Twelve Neonics Cancelled

On June 5, 2019 the Center for Food Safety (CFS) issued a statement that the Environmental Protection Agency has withdrawn from the market twelve toxic formulations of neonicotinoids that kill pollinators, including bees. The cancellation was the result of a lawsuit brought by CFS. Unfortunately there are still multiple toxic formulations of neonics available on the market. Thirteen species of bumblebees are currently at risk of extinction largely as the result of widespread neonic use. The three most widely used neonics in Europe were cancelled by the European Union in April 2018. 🐾

Loons

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five, were recorded on Dunmore in the annual count. Nesting pairs succeeded on floating loon platforms installed by Eric Hanson and helpers on Goshen Pond and Silver Lake. Individual loon chicks are growing day by day on these ponds.

Loon productivity remains higher in Vermont than any other northern state, 0.7 chicks per territorial pair. A population will remain stable if productivity is 0.48 per territorial pair or higher, so Vermont's loons have a fairly comfortable cushion. But their numbers are likely to level out when conflict over territory increases past an intolerable but not yet determined, level. Territorial fighting can result in pair break-up, physical damage, or, rarely, death. Loons typically breed over a 24-year period, so they have multiple chances to reproduce. It is imperative for those of us who visit or live near loon lakes to keep our distance from them and especially from their nests.

Vermont was close to losing the haunting call of loons from our lakes, but they are once again showing strong productivity thanks to Eric Hanson, Mike Korkuc, and numerous other human helpers. 🐾



Local Loon Successes and Losses

Since 1978, when the Common Loon was listed as Endangered under the Vermont Endangered Species Law, it has benefited from the dedicated stewardship of many people. Eric Hanson, the Vermont Loon Biologist employed by the Vermont Center for Ecostudies, has spearheaded the effort for the last 21 years and has recruited many volunteers throughout the state to help out.

In 2005 the Vermont loon population met all of the requirements for recovery from endangered status and was removed from the Vermont Endangered Species List. Progress continues, but not without some backward steps, too. The Vermont loon breeding population nears a record 100 pairs, but fewer suitable lakes remain unoccupied, and loon numbers continue to rise. The level of conflict between loons, especially on larger lakes, results in increasing nesting failures. The reestablishment of Bald Eagles in Vermont has had a negative impact, too, since eagles prey on loons, especially chicks.

The loon recovery in Vermont started in the northeast part of the state where there are more lakes and fewer people, but it has spread to the south and to Addison County. Mike Korkuc, the resident loon observer and protector on Lake Dunmore, has followed the fate of loons there since the first successful nesting a decade ago, and has kept dozens of interested neighbors and Addison County residents informed about



Loon chick napping on mom's back.

Photo by Mike Korkuc

the loons' fate each year. After several successful years on Lake Dunmore, this year's challenging rains caused brief nest flooding and resulted in loss of fertility of both eggs. Four adults, possibly

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