



# Otter Tracks

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## How many birds will you find?

**21st Annual Great Backyard Bird Count**  
February 16-19, 2018

**Join in!** Count birds in your backyard, local park, or wherever you spot a bird, and submit your observations online.

[birdcount.org](http://birdcount.org)

**Cedar Waxwing**  
Photo by Jane Tomer



### OCAS Mission:

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

OTTER CREEK AUDUBON SOCIETY

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**T**he 2018 Great Backyard Bird Count (GBBC) takes place Friday, February 16 through Monday, February 19. The GBBC is now working with eBird to provide global coverage. It's easy to participate: count the birds in your backyard, your favorite birding spot, even traveling and then submit your list on-line. You can no longer mail in your observations so **before you submit a list you must create a free GBBC account.** Go to [BirdCount.org](http://BirdCount.org). You'll find downloadable instructions to create your free account, to enter your observations, and other opportunities. If you are already registered with eBird or Project Feederwatch, use the same login information. There's a tally sheet inserted in this issue, but remember to create your GBBC account to report sightings. Help provide a 4-day snapshot of bird distribution and abundance around the globe.

Here's what you do:

-  Count the highest total of each bird species for at least a 15-minute period in your yard, or wherever you want. Taking the highest total avoids duplicate counting.
-  Create your GBBC account and send your totals for one or more days during the GBBC period to [birdcount.org](http://birdcount.org). Use a separate checklist for each day or each site on a given day. The on-line checklist is user-friendly. If you don't have internet access, ask a friend to create an account and submit your list for you.

National Audubon collaborates with the Cornell Lab of Ornithology and Bird Studies Canada to bring GBBC to you. To continue monitoring through the winter, participate in Project FeederWatch: [feederwatch.org](http://feederwatch.org).

## Otter Creek Audubon Society

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## Bioluminescence in Vascular Plants

MIT researchers have produced bioluminescence in four plant species, watercress, arugula, kale and spinach, by embedding bioluminescent nanoparticles in the plants' leaves. The lead researcher said that key to the process is "how to control where these particles go inside the plant... We can put them right near the biochemical processes where photosynthesis occurs." The plants bioluminesced for 3.5 hours. Imagine reading your *Otter Tracks* on your porch by the light of a hemlock one warm winter's night in the not too distant future. 🐾

## Living in the Plastic Age

Editorial by  
Warren King



## VIEWPOINT

**P**lastic manufacture stands at 8.4 billion metric tons and is growing eight percent annually. It is among the great manufacturing success stories of our age. The U.S. recycles about one-third of its plastic; half of that has traditionally gone to China to be resorted, cleaned, and reused as a raw material or for construction. As of 1 January China stopped the import of all recycled plastic because it contained too much non-complying material. Suddenly, recycled plastic has no market value and will probably end up in landfills along with plastic that didn't get recycled. Imagine your own trash when your hauler no longer recycles any plastics.



Plastics break down into fragments over time, the bulk of which end up as an enormous stew in one of the five great oceanic gyres. Most fragments eventually drop to the ocean bottom, given enough time.

Fragments of less than five millimeters are called microplastics. These particles spread throughout the seas, the soil, and the air we breathe. As they fragment and disperse, in addition to being an environmental contaminant they become a human health issue. When small enough, the particles can pass through cell membranes, cause stomach and lung injury, and enter the bloodstream and the fetal placenta, causing physical or functional damage as they go. They also can cause chemical toxicity when they become contaminated with chemical additives. Bisphenol A, phthalates, bromine flame retardants and other endocrine disruptors are some of the toxic additives they have picked up. And they have been found contaminated with pathogenic bacteria in wastewater treatment plants and in washing machines, where microplastic fibers are plentiful when synthetic fabrics are washed. And plastic debris has been shown to contain human pathogenic bacteria. The human health aspects of microplastics have only recently been observed and are not yet comprehensively studied. One recent publication ranks the issue as "one of the world's foremost environmental concerns, alongside climate change and ocean acidification."

The loss of a Chinese plastics recycling market will challenge our ingenuity to provide a more carefully monitored stream of recycled products so that the very low value of the used product won't be lost to the five gyres.

Microbeads are a microplastic product intentionally added in the manufacture of toothpaste and cosmetic products and that usually washes down the drain into our waterways. President Obama signed legislation in 2015 that comes into force in July 2018 removing microbeads from personal care products and cosmetics. By July 2019 all over-the-counter products must no longer contain microbeads. Illinois, New York, Michigan, Ohio and California all have microbead phase-out plans in effect at various times between 2018 to 2020. Canada added microbeads to its list of toxic substances in 2015. The United Kingdom has proposed a ban on microbeads in rinse-off cosmetics and toothpaste but still permits microbeads in make-up and sunscreen. Microbeads will be phased out of Belgium, France and Sweden by 2018 or 2019. Reduction of microbeads is the only microplastic product that has seen significant conservation progress thusfar. 🐾

"I just want to say one word to you. Just one word. Plastics."

A FARM BILL SPECIAL REPORT

## STATE OF THE BIRDS 2017



### State of the Birds 2017

The U.S. North American Bird Conservation Initiative (NABCI) is comprised of government agencies, organizations and bird initiatives in the U.S. committed to ensuring the health of native bird populations. Its annual State of the Birds message varies depending on the topic the NABCI committee selects to emphasize. Topics have included climate change (2010), public lands (2011), Canada (2012), and private land (2013). In 2017 the focus was on the Farm Bill, the legislation with the greatest impact on bird conservation. The message is intended to convince the federal legislature of the importance of passing a fully funded Farm Bill.

The Farm Bill funds the U.S. Department of Agriculture Environmental Quality Incentive Program and the Environmental Conservation Easement Program.

The Farm Bill also:

- Manages five million western acres to benefit a healthier Sage Grouse population,
- Manages prairie potholes to benefit waterfowl, hunting, birdwatching, sediment retention, and floodwater catchment,
- Provides whole farm attention to double grassland bird numbers and increase predation of pest insect eggs by 30 percent,

- Provides shallow water habitat management of 20 percent of the California Central Valley acreage,
- Provides flood control and groundwater recharge for Henslow's Sparrow in Illinois,
- Funds Sodsaver and Sodbuster programs, which protect prairie grasslands and wetlands and the ducks that depend on them for breeding,
- Funds one-third of the duck food habitats in the Mississippi Alluvial Valley,
- Expands forestry programs in southern longleaf pine forests beyond the current 4.7 million acres,
- Measures effectiveness of 5700 newly managed Golden-winged Warbler nesting habitats on private forest lands,
- Enhances wildlife habitats and secures or extends easements on marginal farmlands, and
- Supports private land habitats within 97 percent of Eastern Meadowlark's breeding range.

The Farm Bill has a long way to go before it is voted on in the 2018 legislative session. The political strategy will be to keep details of the Farm Bill under wraps until the last minute to limit criticism of its various aspects. 🐾



### Sign Up for 2018 Salamander Escorts

On warm, wet nights from mid-March to mid-April frogs and salamanders move from their wintering sites on high ground to breeding sites in wetlands to mate and lay eggs. Their route to the nearest vernal pool sometimes takes them across a road. Across Vermont, groups of concerned individuals, including Otter Creek Audubon Society, attempt to change amphibians' lethal odds by moving them off the road during nights of significant movement.

This is the fifteenth spring that OCAS and the Salisbury Conservation Commission will patrol an amphibian crossing in Salisbury, one with little vehicular traffic but lots of amphibian traffic. This site also has remarkable species diversity: four salamander and three frog species. On a big night—a rainy night with temperatures above 40 degrees—we'll move more than a thousand amphibians in a two-hour period. The site affords an opportunity to experience this remarkable natural phenomenon first hand.

If you sign up for the 2018 amphibian email alert, you'll receive an email alert on the morning of a projected warm, rainy night and then a confirming email at about 6 pm. Movement starts around 8:15 pm and can run for several hours. Volunteers may arrive and leave when they wish and are responsible for their own safety and the safety of others in their group. OCAS provides species identification tips, how to record data, and a reminder of appropriate behavior. With your help we'll record the numbers of each species we move for two hours. Sign up at [kinglet@together.net](mailto:kinglet@together.net) even if you were on the list previously. 🐾

Spotted Salamander photo by Scott Camazine

# The News is Out – Earlier this Year!

By Carol Ramsayer

The OCAS Environmental Education Grants program encourages educators to design proposals that get their students outside and into nature. This year the application process began in September to allow teachers time to plan ahead for 2018. In fact, our grant letters went out to teachers before the holiday break, instead of mid-February as has been our custom. Here are the 10 Addison County schools whose 355 students will benefit from outdoor enrichment activities this winter and spring.

*Addison Central School* 1<sup>st</sup> through 3<sup>rd</sup> graders have already studied how animals adapt to summer and fall conditions. During their field trip to Audubon Vermont this winter they will learn first-hand about winter adaptations.

*Bridge School* students participate in the Trout in the Classroom program, raising trout fry from eggs. OCAS funds will fund transportation to allow them to hike in 3 different places along the New Haven River, studying its watershed. These experiences will make their trout release day even more meaningful.

*Bristol Elementary School* 1<sup>st</sup> graders will cap their spring bird studies with 2 field trips: to Huntington to the Birds of



**Starksboro's Robinson Elementary School used their grant funds to improve their outdoor classroom with an all-weather information kiosk.** Photo by Kerry Lake

Vermont Museum and Audubon Vermont, and later to the Bristol Waterworks property. Plant and animal adaptations are the focus of their outdoor adventures.

*Cornwall Elementary School* is planning a visit from Mary Holland, with an emphasis on sparking student interest in writing, drawing and photographing nature. Grant funds will also purchase a set of Mary's nature books.

*cont. on page 5*



## Ghosts from the North

By Tyler Pockette

Snowy Owls have staged an invasion into the northern states this winter, with many individuals being reported in Vermont, and some traveling all the way south to the Carolinas and Oklahoma. Approximately 20 individuals have already been observed in the Green Mountain State this winter, though this is still not as massive an influx as the winter of 2013-2014 when over 50 Snowy Owls were recorded here.

In decades past, the sighting of a single Snowy Owl in Vermont was quite the rarity, but in recent years these irruptions have become more frequent and have sent larger numbers of birds southbound. The belief used to be that these invasions were driven by a lack of food in their tundra homeland, causing them to move south in search of prey. However, evidence shows that recent irruptions are the result of exactly the opposite; an overabundance of lemmings, their main food source, has produced ultra-productive breeding seasons for the Snowy Owls. When these youngsters fledge, there must be southward dispersal to avoid overpopulation during the winter when food becomes less abundant. Scientists aren't sure why recent years have provided such massive invasions, but it is suspected that a warming climate is leading to longer, more productive breeding seasons for lemmings in the Arctic, thus resulting in larger broods on average for Snowy Owls.

The best places to see Snowy Owls in Vermont are in habitats similar to their familiar tundra landscapes. Wide open flat terrain is what they prefer, so the Champlain Valley is one the best areas to search for them. Dead Creek Wildlife Management Area and the surrounding towns of Addison, Bridport, and Shoreham all have plenty of great habitat. Their favorite places to perch are on fenceposts, telephone poles, or any other structure isolated in the open. Unlike other owls, you won't find them perched within the trees of a forest, so keep your eyes peeled in the fields and, with a little luck, you might get to see one of these ghosts from the north. 🦉

**Snowy Owl in the Champlain Valley** Photo by Tyler Pockette

## February – May 2018 OCAS Calendar of Events

**FRIDAY, FEBRUARY 16  
TO MONDAY, FEB. 19**      **GREAT BACKYARD BIRD COUNT.**  
See article this issue, page 1, and  
[www.birdcount.org](http://www.birdcount.org).

**MONDAY, MARCH 19  
TO SUNDAY, APRIL 8**      **2018 SALAMANDER ESCORTS.** See  
article, this issue. Contact Warren  
or Barry King 388-4082 or  
[kinglet@together.net](mailto:kinglet@together.net) to sign up for the volunteer amphibian  
email alert list, *even if you participated last year.*

**SUNDAY, MAY 6  
7:30-10:30 AM**      **WARBLER WARM-UP.** Ron Payne  
and Warren King will lead a  
search for newly arrived spring  
migrants. Hone your birding identification skills before  
leaf-out. Co-sponsored with the Watershed Center. Meet at  
the Bristol Waterworks, Plank Road, east of North Street,  
Bristol. Call Warren at 388-4082 if in doubt about the  
weather.

### TENTH ANNUAL CABIN FEVER LECTURE SERIES

(Second Thursdays in January and March; third Thursday in February)  
Downstairs at Ilsley Library, 75 Main Street, Middlebury



**THURSDAY, FEBRUARY 15\*, 7 PM**  
**HANK KAESTNER: JEWELS OF ECUADOR**

Highlights of a trip to Ecuador made with Hank's brother,  
Peter, last April. He saw almost 400 bird species in one week,  
including 45 different hummingbirds! They are the jewels of  
Ecuador! He managed to add 75 new species to his life list on  
the trip, which was set up primarily as a "target" trip to see as  
many new birds as possible.

\*note the date!

**THURSDAY, MARCH 8, 7 PM**  
**CHRIS BERNIER: MARTENS RETURN TO VERMONT**

The Fish and Wildlife Department fur-bearer biologist, who  
intrigued us with the story of Canada lynx in Vermont last  
winter, will review the history of martens in Vermont and  
clarify their difficult relationship with fishers.

**Three Jewels of Ecuador.**      Photos by Hank Kaestner

### 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, FEBRUARY 10, 8–10 AM**  
**SATURDAY, MARCH 10, 8–10 AM**  
**SATURDAY, APRIL 14, 8–10 AM**  
**SATURDAY, MAY 12, 7–9 AM**

### The News is Out

*continued from page 4*

*Mary Hogan Elementary School* 3<sup>rd</sup> graders have already studied  
owls extensively. Their teacher has a permit to have a Great  
Horned Owl mounted. This will be partially paid for through  
her OCAS grant.

*Red Cedar School* has exciting plans to improve their school garden  
plots. OCAS will support a pollinator garden, bird feeding sta-  
tion and compost station.

*Shoreham Elementary School* 6<sup>th</sup> graders will participate in the  
Lake Champlain Maritime Museum's Paddling Ecology pro-  
gram. Yes, they actually canoe on Lake Champlain to collect  
water samples, conduct water quality tests, and identify aquatic  
animals.

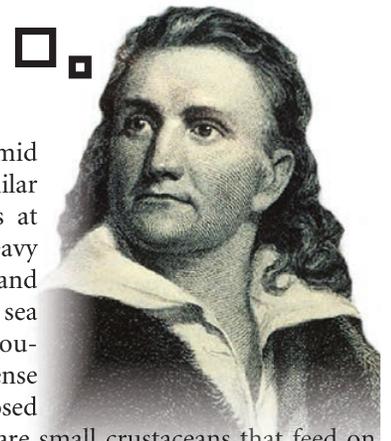
Starksboro's *Robinson Elementary School* 3<sup>rd</sup> and 4<sup>th</sup> graders have  
weekly walks near their school which take them through a  
variety of habitats - rain, snow or shine. They will have pocket  
guide books and waterproof notebooks to record their adven-  
tures as they experience the change of seasons.

*Weybridge Elementary School* is reclaiming a trail through woods  
behind their school. OCAS funds will purchase child-sized  
tools, books and field guides, and a set of 9 Eagle Optics bin-  
oculars to get them started on this multi-year project.

*Whiting Sudbury Learning Academy* K/1 students will be bused to  
Sudbury to participate in the ECO outdoor classroom there.  
Every other week they will have inter-age outdoor learning  
experiences with their grade 3/4 "buddies."

OCAS enthusiastically applauds the excellent work of these  
Addison County teachers as they strive to provide their students  
with exceptional outdoor learning experiences. And these teachers  
continue to be appreciative of the opportunities that OCAS grants  
make possible. As one teacher explained: "It is important for you  
to know that my students would not be having these life expand-  
ing experiences if it were not for your generosity; I so appreciate  
your continued gifts that encourage my students to appreciate the  
value and critical importance (and joy!) in the stewardship of our  
environment." Inspirational words for sure. If you would like to  
contribute to OCAS' Environmental Education Grants, a good  
opportunity is the OCAS Bird-a-thon, held yearly in May. 🐦

# Can Birds Smell?



**J**ohn James Audubon asked himself that question and decided to find out. He tested Turkey Vultures, providing them with a deerskin sewed up to look like a dead deer, placed in plain sight. He also placed out a long dead and smelly hog covered with vegetation. The vultures found the deer quickly and didn't find the hog. Audubon concluded that vultures depended on their vision to locate food, not on a sense of smell. In 1960 ornithologist Kenneth Stager set the record straight, hiding a four-day-old carcass. Vultures found it quickly. Audubon hadn't realized that vultures are attracted to ethyl mercaptan, which is only released by a carcass no more than four days old.

Audubon started ornithologists off on the wrong foot regarding smell. Virtually all birds have an olfactory bulb at the front of their brains. For many birds, including most songbirds, the bulb is rudimentary, but for some species, including new world vultures, (but not old world vultures, a different family), it is large and highly functional. Other stars in the olfactory world include the kiwi and kakapo, both terrestrial nocturnal New Zealand birds; woodcock, very good at smelling earthworms; and juncos, whose preen gland oil has distinctive odors that indicate reproductive competence more reliably than visual signals. European Starlings detect the chrysanthemum-like odor of the aquatic plant milfoil. Males weave milfoil stems into their nests to attract females.

The olfactory champions are the tubenosed birds ranging in size from delicate ounce- and-a-half storm petrels to enormous 22-pound albatrosses. Storm petrels use their olfactory skills to

locate their own burrows amid tens of thousands of other similar holes in dense conifer stands at night and often blanketed by heavy fog. Albatrosses, shearwaters and petrels navigate distances at sea from a few miles to tens of thousands of miles using their sense of smell. A number of tubenosed species are krill feeders. Krill are small crustaceans that feed on phytoplankton at the bottom of polar food chains. Phytoplankton release dimethyl sulfide when they are being harvested by krill. Tubenosed birds recognize that odor and follow the odor plume to its source for their daily krill meal. They use redundant cues, depending on what information is available, including the visual cue of others of the same species feeding in flocks.

Shearwaters of a number of tubenosed species share an unexpected trait with Rock Pigeons. They each navigate by creating an olfactory map. Their right nostrils are crucial to their ability to navigate using their olfactory maps, left nostrils apparently less so. Pigeons create their olfactory maps over land, shearwaters over the ocean. But whatever an olfactory map looks like to a shearwater or a pigeon, it provides them with guidance between feeding grounds and home. Olfaction is only one of several guidance systems that can be put to use, depending on conditions at the time and what kind of information is being sought. 🐾

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Otter Creek Audubon Society

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