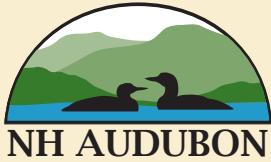


WINTER 2018-19

NH Audubon *Afield*

Notes from the Field Edition





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FROM THE PRESIDENT'S DESK

I'm so pleased to introduce our Notes From the Field edition of Afield this year. Every year at this time our science, policy, and land management teams pull together their research results, reflections, and updates after a season of field work.

The pages that follow demonstrate the complexity of our work and impact. For example, the species we study always tell a larger environmental story. The encouraging Bald Eagle and Peregrine Falcon recovery reminds us that we make a real difference with policy decisions, such as restricting DDT and managing for proper habitat. On the other hand many species, such as Rusty Blackbirds, are in decline and we are uncertain why.

Climate Change is always a concern. American Pippits only breed at the highest elevations on Mount Washington. This habitat is particularly sensitive to changes in temperature and seasonal shifts. Because of extreme weather Chris Martin could only conduct field work on five days this past field season! Our phenology field work, led by Diane De Luca, tracks changes in migration patterns and native wildflower blooms, showing the impacts of climate patterns. The lessons we learn through this work are integrated with our new focus on pollinators—those species that ensure our native plants are productive and supportive of wildlife.

Engaging in partnerships and volunteerism has always been a huge part of



our work. Volunteers are featured in nearly every story and are vital to our sanctuary stewardship. In policy, we have a high school intern working with Carol Foss on both state and federal legislative work. This past year we worked with the NH Chapter of The Nature Conservancy to research nighthawks in the Ossipee Pine Barrens.

As you can see, all of our program work is integrated. Our science informs our policy initiatives, our education programs, and our land management, and vice versa. And every step along the way includes partners, volunteers, students, and families. I couldn't be more proud to see how we connect people to nature in these ways. These interactions are the strongest path to succeeding in our mission to protect New Hampshire's natural environment for wildlife and for people.

I hope you will join us!

Doug Bechtel
President

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Thank You

A very special thank you to Joanne and Kevin Jones for helping to make this publication possible.

Cover Photo:

"I must have sat under the tree at the Massabesic Center Sanctuary for over an hour in the cold. I kept waiting for this male chickadee to sit in just the right spot and he finally just stole the show. He is so beautiful!"

-Diana Talbot, one of the top 75 winners of this year's Wild NH Photo Contest (page 22).

For more on chickadee trends, see page 9.

Conservation Notes

2018 Summary of Conservation Department Activities



Conservation Department News

Staff Changes – Thank you Vanessa and Laura

This year brought two major changes to the Conservation Department. In March we said goodbye to longtime staff member Laura Deming. Laura joined NH Audubon in 1992 to prepare a research paper on forest management and wildlife in the Northern Forest of New England and New York, and stayed on as a staff biologist. During her 26 years with us she worked on a wide range of projects from coordinating bird surveys in the White Mountain National Forest to wading through blowdowns on pre-construction surveys for a wind energy project. Laura conducted turtle surveys and lead our bat survey efforts, taught about Bird Friendly Buildings, championed wetland protection, and worked to prevent the spread of invasive species. We miss Laura's presence on our team and wish her the best as she works to complete her Ph.D.

In April, Vanessa Johnson left her position as Director of Conservation. Her financial and organizational skills kept the department on an even path forward, providing the stability and clarity which enabled the rest of us to focus on our projects. All of the department staff—biologists who would much rather be in the field than in the office—were grateful for her leadership and keenly feel her absence. Vanessa joined the Department as GIS Specialist in 2007 and is continuing to help us in this role. We wish her well in her new job with the Academy of Applied Science.

Both Laura and Vanessa made lasting contributions to conservation science at NH Audubon and we deeply appreciate all of their years of service.

Thank you!

We are very grateful to everyone who has supported the Conservation Department's work in 2018. Our projects depend on donations from people like you. Collaborations and partnerships strengthen our work, but our partners and funders typically support only a portion of each project, and we depend on your donations to help fill the gap. All gifts, both large and small, are important and we appreciate each one. We also depend on volunteers whose help allows us to maximize the dollars we receive. It's a team effort! To support the department overall or a specific research project or contribute to the Conservation Department endowment, call Becky Suomala at 224-9909 ext. 309. Thank you for being part of the team!

*Semipalmated Sandpipers roosting on Seabrook Beach.
Photo by Pamela Hunt.*

Professional Presentations

Pamela Hunt was invited to give two professional talks in 2018. The first, entitled "Land Use, Landscape Change, and Crepuscular Ornithology," was presented as part of a symposium celebrating 50 years of avian research at the Hubbard Brook Experimental Forest (where Pam did some of her Ph.D. work). The symposium also honored Dr. Richard Holmes (her advisor), who started the bird program there in 1969. For her second talk, Pam gave a keynote address at the Wisconsin Bird Conservation Initiative's annual meeting focused on aerial insectivores. Pam's title was "Aerial Insectivores: The Who, What, Where, and Why of an Emerging Conservation Issue." In addition, Pam was made an Elected Member of the American Ornithological Society in 2018 in recognition of her contributions to ornithology and to the AOS.

Chris Martin gave a presentation at the National Hawk Migration Association of North America Conference in Detroit, MI. He spoke on "Dispersal, Migration, and Overwintering by Female Peregrine Falcons Breeding in New Hampshire." The talk featured results from his multi-year project to fit four nesting falcons with lightweight solar-powered satellite transmitters to track their annual movements—a collaboration with field biologists from Biodiversity Research Institute and Stantec Consulting.

Conservation Notes



Bee pollinating Purple Coneflower in the pollinator garden at McLane Center.
Photo by Diane De Luca.

Phenology Reflections: Trailing Arbutus

by Diane De Luca

According to folklore, trailing arbutus (*Epigaea repens*) was the first spring blooming plant the pilgrims saw after they survived the Plymouth colony's difficult winter. The common name of Mayflower is derived from the pilgrim's fondness for this plant. The leaves are evergreen and the flower buds are present through the winter, ready to open as soon as the conditions are favorable.

Since 2012, I have closely monitored the phenology, or timing of the life cycle phases, of many species, including the Trailing Arbutus. Each species tells a story. Although we need long term data to better understand the impacts of climate change, short term data clearly shows that phenological responses depend on the characteristics of individual species.

In spring 2018 Trailing Arbutus had the latest bloom date since we initiated observations in Deering, with open flowers first observed on April 30. To give some perspective, the first arbutus flowers were observed on April 4 in the spring of 2012,



April 18: flower buds remain closed as snow covers the ground.



April 28: flower buds start to expand in anticipation of bloom.



April 30: the first flowers begin to emerge. The latest recorded date for bloom at Deering.



May 2: the fragrant flowers are white or pink and appear in clusters that emerge from the leaf axils.

Pollinator Demonstration Gardens at McLane Center

by Diane De Luca

After a year of preparation, we finally installed a pollinator demonstration garden in October at NH Audubon's McLane Center in Concord. The garden is meant to enhance habitat for pollinators and engage visitors in the benefits of native plantings. Interpretive signage will share information about pollinators and the important relationship between native flowering plants and the wildlife that pollinate them.

We are grateful for the support of the US Fish and Wildlife Service in the creation of these gardens. Thanks also to the Robin Colson Memorial Foundation and Pemi Native Plants for additional funding. A big thank you to the many volunteers who helped transform the gardens.

the warmest spring on record. The average bloom date over the last seven years is April 16. Why so late in 2018? The winter was unremarkable, with relatively mild temperatures. April, however, saw well below average temperatures with multiple snow and ice events. These events had major impacts on a plant with flower buds that remain dormant through the winter. In contrast, the wildflowers that emerge from the soil did not deviate significantly from the averages. What will a drastic change in bloom time (as much as 26 days) mean for the pollinators of trailing arbutus, primarily bees?

To learn more about tracking phenology in your own backyard, check the National Phenology Network or email me (ddeluca@nhaudubon.org). Your stories will contribute to better understanding the impacts of change.

Grateful thanks to an anonymous donor for supporting the NH Audubon Phenology Project.

Washington's Weather Wins Round One

by Chris Martin

East of the Rocky Mountains, American Pipit nests have been documented on only two isolated mountaintop areas in the US – Maine's Mt. Katahdin and New Hampshire's Mt. Washington. Their extremely limited breeding distribution causes pipits to be state-listed as a "Special Concern" species in NH.

Funding from the Robert F. Schumann Foundation and the Blake-Nuttall Fund (and by the Waterman Fund in 2017) enabled NH Audubon to return to Mt. Washington to study pipits, a species that is ground-nesting at a higher elevation than any other bird in New England. As we knew from previous work 20 years ago, Mt. Washington's summit weather can present considerable challenges when trying to conduct fieldwork above treeline.

We conducted targeted surveys near the summit of Mt. Washington in June and July 2018. Our field team managed to get out on the mountain on only five days due to weather. There were few days without fog or strong winds when we could walk hiking trails and parts of the Auto Road to look and listen for pipits and watch adult behavior for clues about nests.

Despite those challenges, we tallied an estimated 26 adult pipits plus five juveniles, including 16 adults before July 11, and 10 adults interacting with five fledged young on/after July 11. We mapped 11 pipit display flight areas that all had starting elevations between 5,525 and 6,150 feet. Aspect of terrain where these displays originated was not random.



Dwarfed by summits, Chris Martin searches for pipits in the alpine zone near the Great Gulf on Mt. Washington, 7-20-18. Photo by Sheridan Brown.

In fact, all flights started at spots where the ground faced in an arc from the west-northwest to the northeast. Pipits were most active in areas north and northwest of the summit, and most conspicuous in the Cow Pasture, at the 6,000 ft parking area, near the Nelson Crag Trail crossing, and along the Cog Railway near the Great Gulf Headwall. In contrast, eastern, southern, and western sides of the summit appeared to be nearly devoid of pipits.

To our great disappointment, after endlessly watching pipits forage for insects, we did not locate even one active nest in 2018. But we will be back on "The Rockpile" again in 2019 to pick up where we left off this season!

A Season of Trailing Arbutus (*Epigaea repens*)



Follow the timeline below as Diane De Luca's photos reveal the cycle of phenology for Trailing Arbutus in the Deering Wildlife Sanctuary.



May 8: abundant flowers create a spectacular ground cover and attract bees as the main pollinator.



May 11: the flowers are delicate and in a short time span they turn brown and fade away.



May 31: if you are lucky, you may see the fleshy berrylike fruit. The seeds contained within the capsules can be spread by ants.



August 18: in late summer, the flower buds are fully formed and will overwinter.

Conservation Notes



Female Common Nighthawk with chicks on a Keene rooftop, 6-22-18. Unfortunately the nest failed within a few days. Photo by Rebecca Suomala.

Conserving Our Migrant Shorebirds

by Pamela Hunt

It's been over a decade since NH Audubon conducted the first-ever "avian assessment" of the Hampton-Seabrook Estuary. This project identified important feeding and resting sites for the thousands of shorebirds that pass through the state's largest estuary each spring and fall on their hemisphere-spanning migrations. A lot can change in ten years, and we decided to revisit shorebird stopover sites and expand our coverage to the entire coast. Using a combination of eBird data and systematic surveys, we have already learned that some sites that saw heavy use in the original survey are barely used today, and that new sites appear to have taken their place. Surveys and analysis will continue in spring, so detailed results are not yet available. We hope to use them to educate coastal communities about the value of key locations for these long-distance travelers and the threats they face during their brief stays in the Granite State.

Funding for shorebird conservation comes from grants from the Fuller Foundation and the Blake-Nuttall Fund.

Yellowlegs and peeps roosting at Meadow Pond in Hampton. Photo by Pamela Hunt.



Common Nighthawks and Pine Barrens Bird Research

by Rebecca Suomala

In the summer of 2018 we had the lowest number of adult Common Nighthawks (six) that we've recorded in Concord since Project Nighthawk began (2007), but three confirmed nests and all of them appeared to be successful. The volunteers who watched at the Steeplegate Mall actually confirmed a nest and fledged young – a nearly impossible task from the ground at this site. A new nest site in a gravel pit produced one chick. The third nest was found by NH Fish & Game field staff at the Concord Airport. While doing Karner Blue Butterfly surveys they put up a nighthawk during the day from the middle of the airport and a second one ran off in the grass – a chick for sure. We observed no male activity at the airport earlier in the season so this nest is a puzzler.

Keene had one confirmed nest that unfortunately failed soon after hatch. We think there was a second nest at Keene State College but it was never found (sneaky birds!).

We also had a graduate student, Jason Mazurowski, in the Ossipee pine barrens who confirmed more nests there than we ever have in one year (four). What a difference it made to have Jason on site to follow up on our coordinated watch observations. Jason's work was part of a collaborative with The Nature Conservancy to look at habitat management in relation to the occurrence of pine barren specialty birds. In addition to nighthawks, he surveyed for whip-poor-wills, following up on past surveys by Pamela Hunt, and conducted point counts for target songbirds at the same locations that were done in the past. His habitat data collection and examination of past management should provide some interesting information about nighthawk nest habitat preferences and as well as the other bird species' response to pine barren management.

Funding for Project Nighthawk surveys comes from private donations and grants from the Davis Conservation Foundation and the Blake-Nuttall Fund.

Bald Eagles Climb Higher

by Chris Martin

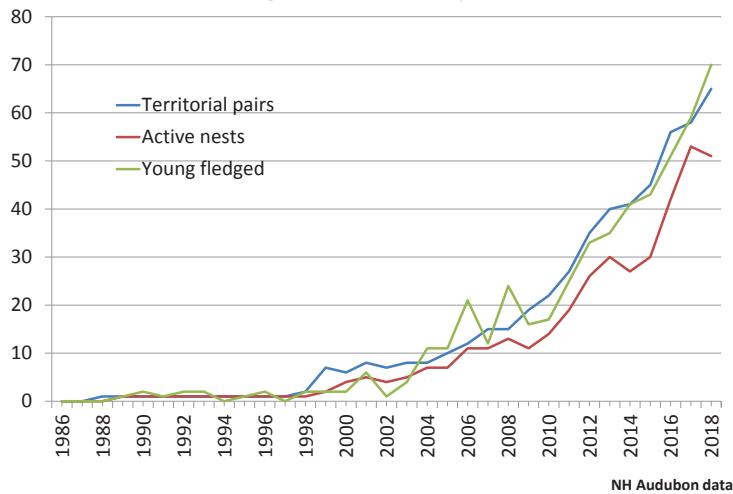
New Hampshire's Bald Eagle population recovery was particularly evident in our 2018 breeding season. We confirmed a record-high 65 territorial pairs of Bald Eagles in the Granite State in 2018, up 10% from the 59 pairs found in 2017. We found 39 successful nests and counted 70 young fledged, both also record-highs. In one of our broadest metrics of breeding success, we had 1.08 young fledged per territorial pair, its highest level in the state in more than a decade.

Highlights from 2018 included two first-time-in-NH events that were well-documented by NH Audubon volunteers. First, a Bald Eagle pair nesting at Merrymeeting Marsh in New Durham failed during incubation, but then laid a second clutch of eggs and successfully fledged one chick in late August. This marked New Hampshire's first-ever productive re-nesting by eagles. Second, a nest in Walpole was tended by three different color-banded adult eagles, a 6-yr old male from Massachusetts and two females (a 13-yr old and a 6-yr old), both from Connecticut. All three birds participated amicably during incubation, but this nest did not produce chicks. However it was the first time a nesting trio has ever been documented in the state. We identified six new breeding territories in 2018.

A grand total of 497 young eagles fledged from New Hampshire nests since the species began breeding here again about 30 years ago. More than 26% of those nearly 500 eaglets have been produced in just the past two breeding seasons! Relying in large part on breeding season and winter survey data gathered by NH Audubon's Conservation staff and volunteers over nearly four decades, NH Fish & Game removed the Bald Eagle from the Granite State's List of Threatened and Endangered Wildlife in March 2017.

Many volunteers have contributed to our monitoring efforts, and several wildlife photographers in particular deserve credit for providing nest confirmation and identification data. Thanks to all who volunteered their time. In 2018, NH Audubon coordinated monitoring and management of Bald Eagles in partnership and with funding from NH Fish & Game's Nongame Wildlife Program, as well as a grant from the Dorr Foundation.

NH Bald Eagle Productivity, 1986-2018



Three adult Bald Eagles near their shared nest in Walpole.
Photo by Brad Howe.

Conservation Notes

A Banner Year for Peregrines

by Chris Martin

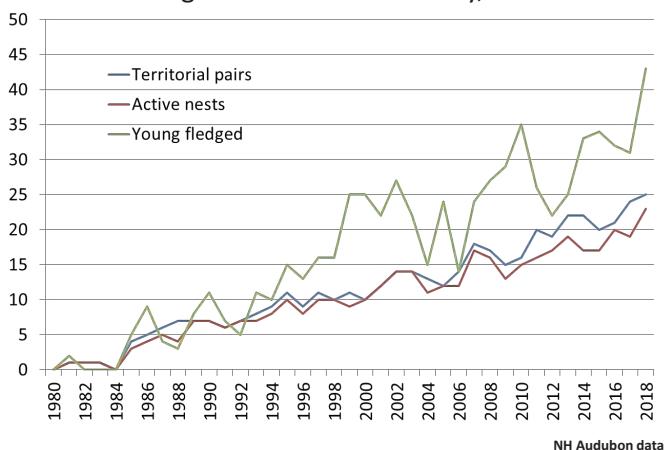
In 2018, NH Audubon staff and volunteers documented New Hampshire's best Peregrine Falcon breeding season in the nearly four decades since recovery efforts began in the state around 1980. New record highs were set in all statistical categories that we track, including 25 territorial pairs and 17 successful pairs. An exceptional total of 43 young fledged in 2018 (1.87 young fledged per nesting pair), marking the first time during post-DDT recovery that more than 40 young falcons fledged in the Granite State in a single breeding season.

Season highlights included three pairs that fledged four young each: Rattlesnake Mt. in Rumney, Fall Mt. in Walpole, and a quarry in Westmoreland. The Merrimack River valley now has five breeding pairs, with falcons nesting successfully in a nest box on the stack of Granite Shore Power's Merrimack Station in Bow, and on a nest tray placed by NHDOT under the I-293/101 bridge in Bedford. More than 25% of New Hampshire's Peregrines now nest on human-created structures, including buildings, bridges, stacks, and quarry walls.

Thanks to our partnership with Biodiversity Research Institute and Stantec Consulting, four adult female Peregrines with solar-powered satellite transmitters continue to send us their locations daily. These include a year-round resident at the I-95 Bridge in Portsmouth, as well as migratory birds that breed in Rumney and Walpole. Another female, who formerly bred at Bear Mt. in Hebron and who has been continuously transmitting since May 2014, jumped to a neighboring territory in March 2018 and raised young successfully at Holts Ledge in Lyme!

We confirmed the banded status of 23 individuals (45%). Two notable band encounters in 2018 involved falcons that died but had connections to the Brady-Sullivan nest box in Manchester. A venerable Manchester offspring from 2001, 17-yr old "Black/green *6/*4", who nested in Lawrence MA since 2003, died in early April shortly after a fight with a rival male.

NH Peregrine Falcon Productivity, 1980-2018



Female Peregrine Falcon from Rattlesnake Mt. with satellite transmitter. Photo by Lee Hansche.

One of his 5-yr old offspring was the breeding male at the I-293/101 Bridge in Bedford until he was found dead in June. After he died, his mate successfully raised their three chicks to fledging on her own.

Thanks to all those volunteers, landowners, and climbers who support our Peregrine Falcon recovery efforts, and to various natural resource agencies and groups who assist us in many key ways. Peregrine Falcon management is conducted in partnership and with funding from NH Fish & Game's Nongame Wildlife Program.

Cerulean Warblers Continue to Prove Elusive

by Pamela Hunt

In 2018 I continued searching historic and potential sites for Cerulean Warblers, a species which was newly listed as Threatened in New Hampshire in 2017. My main focus was on the state's two long-term historic sites of Pawtuckaway State Park and Mount Wantastiquet, but once again I was unable to find the species at either. Both these locations are characterized by oak-pine forests in rocky terrain. I identified many other potential sites using Wildlife Action Plan maps of similar habitat, and opted to visit Fall Mountain in Walpole and the Mme. Sherri Forest in Chesterfield this season. No Ceruleans were found at either site, but I'll try again in 2019. In addition to rocky forest ridgelines, Ceruleans also use floodplain forests. The only such site they've frequented in New Hampshire is along the Blackwater River in

Continued, p. 9

February 9-10, 2019

Backyard Winter Bird Survey is Coming!

by *Rebecca Suomala*

This annual Survey began in 1987 and thanks to over 1,300 volunteers who participate each year, our biologists can see what's happening with New Hampshire's resident bird populations. For example, last winter many people were concerned about the absence of Black-capped Chickadees while at the same time remarking on all the juncos at their feeders, so we looked at these two species in detail.

The graphs show that it was indeed a record year for Dark-eyed Juncos (Figure 1). Although Black-capped Chickadees were record low, the numbers don't indicate a population crash. Several other years were low and there is great variability (Figure 2), but the species bears watching. Birds may have spent more time in the woods taking advantage of the excellent natural food crops last winter (the same crops that gave us lots of gray squirrels) and less time at feeders. There's more on the chickadee phenomenon in the 2018 survey summary.

Past participants receive last year's results with their 2019 forms in the mail in January. You can also report online or print out the survey form from the website. It's easy to do—just count the birds in your backyard on the survey weekend and send the results on the form or on-line. Remember to report, even if you don't have many birds! Check the web for more information. To receive a packet in the mail, call NH Audubon.

Salisbury, where a Cerulean set up a territory in 1998 and 1999. On our first 2018 visit we heard a possible Cerulean song, but because we were surveying by kayak we could not search out the bird. The singing bird was not found during a return visit on foot, so there's another place to check in 2019!

There is a slightly happier ending to this story, however, since in early June other birders found Ceruleans at Pawtuckaway and Wantastiquet. These records – one date for each location – give some small hope that the species persists in the state, although we don't know if either bird remained to nest. Birders are encouraged to continue searching these two locations more thoroughly and throughout the breeding season. If you do look, please be considerate of the species' threatened status and avoid the excessive use of tapes in an attempt to lure birds closer. If you are interested in volunteering, contact me at phunt@nhaudubon.org, 603-224-9909 x328.

Funding for Cerulean Warbler monitoring comes from a contract with the NH Fish & Game Department.

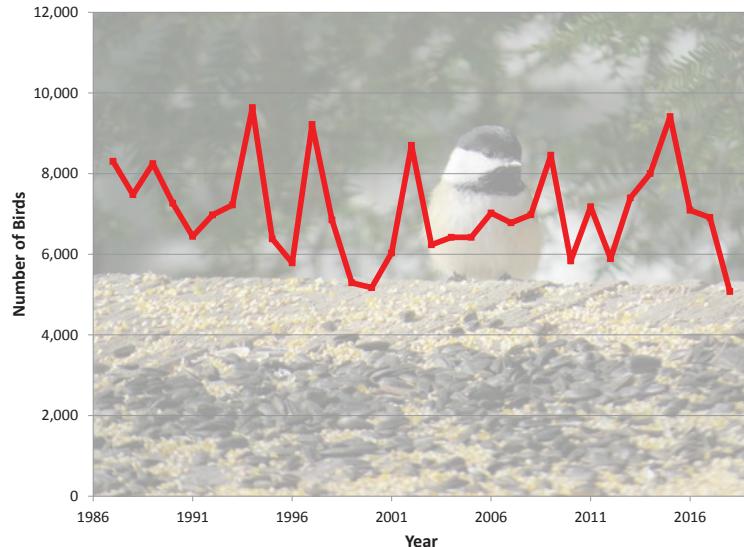


Figure 1. Black-capped Chickadee numbers on the Backyard Winter Bird Survey, 1987-2018. The record low of 5,076 in 2018 is very close to the next lowest year of 5,171 in 2000, indicating that Black-capped Chickadees show periodic ups and downs. Those years with lower numbers may reflect good food supplies in the woods or lower reproductive success the previous summer, or possibly a combination of the two. We'll have more details in the Backyard Winter Bird Survey's 2018 Results summary. Photo by Rebecca Suomala.

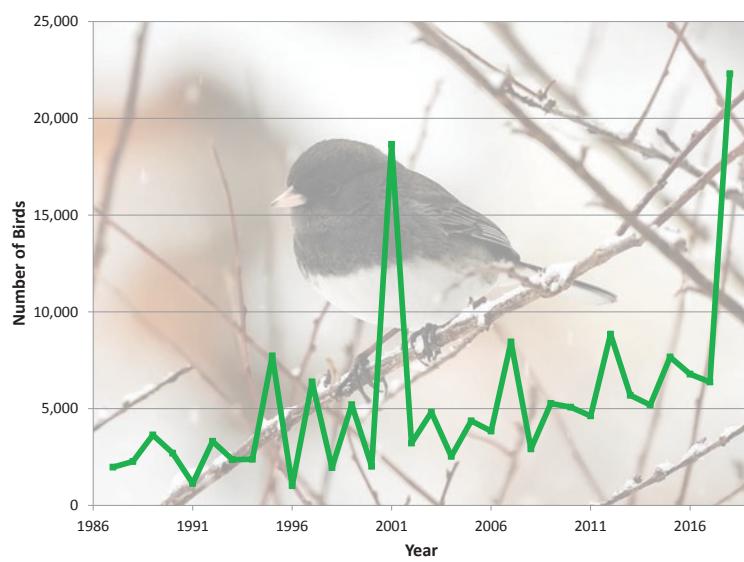


Figure 2. Dark-eyed Junco numbers on the Backyard Winter Bird Survey, 1987-2018. The 2018 total of 22,303 was a record high on the Survey and even when we look at juncos by observer, both years still show dramatically high peaks compared to the other years. Photo by Bob Basile.

Conservation Notes



A Motus receiving station. Photo courtesy of the Northeast Motus Collaboration.

New Hampshire Bird Records and NH eBird

by Rebecca Suomala

Check out *New Hampshire Bird Records*, it keeps getting better and better. We are excited that all four 2018 issues will be sponsored in memory of Chandler Robbins by Andrea and George Robbins. This is a wonderful way to honor Chan who contributed so much to our knowledge of birds in his lifetime. In each issue there are all kinds of articles about birds and birding in New Hampshire, where to bird, field trip reports, a photo quiz, species spotlights, research, and so much more. Check out the contents and read a free article on the web site, www.nhbirdrecords.org.

The data for *New Hampshire Bird Records* comes from NH eBird – an online database for reporting your bird sightings anywhere in the world. *New Hampshire Bird Records* volunteers take on the monumental task of reviewing eBird reports so that the database is

An Exciting New Initiative: Bringing the Motus Wildlife Tracking System to NH

by Carol Foss

The Motus Wildlife Tracking System is an array of coordinated radio telemetry receiving stations that track the movements of small flying animals fitted with nanotags. Nanotags are tiny radio transmitters that all transmit on the same frequency, but with different pulse patterns. Receiving stations have antennas that record data from tags that pass within an approximately 9-mile radius. Volunteers download the data once or twice annually and send it to a data center where signals are matched with the associated animals.

The system evolved from a pilot network of stations in Canada, established in 2012-2013, and has now become an international collaboration. Originally designed to track shorebird migration, the network is now supporting research on songbirds, bats, and even migratory insects such as Monarch butterflies and green darners. While satellite transmitters can document the travels of larger birds such as raptors and seabirds, the transmitters are too heavy for small songbirds. The lightweight nanotags can be attached to very small birds and large insects, revolutionizing the tracking potential. We may finally be able to determine when and where our small songbirds go—if we have a wide enough network of antennas.

The Northeast Motus Collaboration (NMC) was founded in 2015 to create an inland network of receiver stations in the northeastern US. The NMC has established a “fence” of receiver stations across Pennsylvania, and is now working with partners to extend the network throughout the region. NH Audubon sponsored a regional meeting at the McLane Center in March 2018 to provide an introduction to Motus technology and begin planning a strategy for a New England network. At the present time the only receiving station in New Hampshire is located on Mt. Wantastiquet in Hinsdale. Among the birds detected at this station during 2016 and 2017 are birds tagged in Jamaica, Manitoba, Colombia and Nova Scotia!

A local team, organized by NH Audubon, is now working to expand the Motus network throughout the New England region. The NMC was recently awarded a Competitive State Wildlife Grant from the US Fish and Wildlife Service for expanding Motus infrastructure in the mid-Atlantic States. This proposal (\$497,929 in federal funds with \$230,343 non-federal match) includes installation of 46 receiving stations in New York, New Jersey, Pennsylvania, Maryland, and Delaware, and provides funding to a number of established research projects for deploying nanotags on species that migrate through the mid-Atlantic region, including Rusty Blackbirds (NH Audubon’s project) and Bicknell’s Thrush from New England breeding populations. The NMC now plans to submit a similar proposal in 2019 to support network expansion in New England. Look for further information on this exciting project in the coming months!

NHBR and NH eBird, cont.

accurate. If you would like to be involved, please let me know. Funding for both projects is provided by subscribers, private donations, the Milne Fund, and the New Hampshire Bird Records Endowment Fund.

Northeast Endemic Damselflies are Focus of New Regional Project

by Pamela Hunt

There are four species of damselflies endemic to the northeastern United States, largely ranging from New Jersey to Maine (one is also found in much of Maritime Canada). These four damselflies are all “bluets” in the genus *Enallagma*—New England, Little, Scarlet, and Pine Barrens bluet. Because their restricted ranges overlap with one of the most heavily-developed areas of the continent, they are considered “regional species of greatest conservation need” in the Northeast. Each of the seven states within their core ranges lists at least one as special concern, threatened, or even endangered, often because they occur in a small number of locations. Here in New Hampshire, all but the Pine Barrens Bluet are widespread and often common, with roughly 50 sites known for each. In contrast, we only have a single site (and the northernmost in its range) for the Pine Barrens Bluet, which led us to classify it as “special concern” in 2017.

Although several states within these damselflies’ ranges have conducted comprehensive distribution studies, information from many others is increasingly out of date. NH Audubon launched the “Northeast Endemic Damselfly” project in the spring of 2018. With our partners in NJ, NY, CT, RI, MA, and ME, we aim to accomplish three core tasks for each of the four species by the end of 2019: 1) update distribution data, 2) create habitat models, and 3) develop conservation plans.



Male Scarlet Bluet. Photo by Pam Hunt.

During the summer of 2018 we focused on the first of these goals. With the help of volunteers, we visited over 50 sites here in New Hampshire, nine of which had not been previously surveyed for these species. We failed to relocate Pine Barrens Bluet at its only known site, but had better luck with the other three. New England, Little, and Scarlet bluets were found at 50-70% of known sites that were checked, and we also found them at 5-10 new sites each. Scarlet Bluet in particular appears to be doing well, with 10 new sites bringing the statewide total up to 63. This is particularly remarkable when you consider that we didn’t even know the species occurred in New Hampshire until 2001. In 2019 we will attempt to visit the more than 70 New Hampshire ponds we haven’t yet surveyed.

Funding for the northeast damselfly project comes from a generous grant from the Sarah K. de Coizart Article Tenth Perpetual Charitable Trust. It would also not be possible without the participation of representatives from all six other states where the project is taking place.

Purple Martins Hold the Line

by Pamela Hunt

New Hampshire’s small Purple Martin population had a mixed season in 2018. At our largest colony (Seabrook), all 18 nesting gourds were occupied, but as in 2017 periods of cold and wet weather in late spring resulted in significant nest failure. Three nests failed entirely, and at least half the eggs in another six never resulted in fledglings. In the end, the colony produced only 44 young, a significantly lower number than in the previous two years.

Not too far away in Hampton, the colony occupied in 2016-17 attracted martins early on, but they didn’t stay to nest, and the martin volunteers think encroachment by trees and House Sparrows is making the site less suitable. Worst of all, the only remaining site in the Lakes Region (Wakefield) was unoccupied in 2018, meaning that all our remaining colonies are near the coast.

On the plus side, the colony at Awcomin Marsh in Rye grew from a single pair in 2016-17 to four in 2018, and produced 17 young. Best of all, consistent management at the Portsmouth Country Club in Greenland finally paid off in 2018, when a single pair of martins produced two fledglings. Although young martins were occasionally seen here in recent years, there had been no confirmed nesting since 2003. When all the numbers are added together, the state’s three remaining colonies yielded 63 young martins, slightly less than 2017. This is despite the significant losses at Seabrook, and is a testament to the importance of committed site managers. Without the dedication of these volunteers, Purple Martins would be in much worse shape in New Hampshire.

Funding for Purple Martin recovery comes from private donations.

A Day in the Field with Rusty Blackbirds

by Dyanna Smith

I'm heading up the New Hampshire-Maine border to visit Carol Foss in Errol, and find out what her Rusty Blackbird research is all about. It's a late afternoon in July and I have the roads to myself. The air is warm and soft as I drive up the winding roads of Grafton Notch State Park with my hand reaching out the open window. This is new territory for me and each bend in the road reveals the unexplored.

I make it to the cabin just as darkness sets in, where Carol and her team greet me and tell me about their field season. It's actually winding down now, and it has been a bumpy one. The cabin is filled with gear, books, field equipment, old bird nests, notebooks and water bottles. There are two giant charts on the wall marked with colors and letter codes, tracking nest locations and success. We are trying to fit 2 ½ months of information into my 24-hour visit, and stay up for a while talking before I fall asleep on the screened porch.

The next morning, I'm up at 5:30 am. Nature: a thousand tiny alarm clocks. What sounds like angry squirrels turns out to be two very loud hummingbirds fighting over the feeder on the other side of the screen. I'm suddenly not sure how I feel about hummingbirds.

We leave at 7:00 am, joking about the late start. Carol's formidable pickup truck heads into the study area along rough, dirt roads that are sometimes more like lightly worn trails. Kelly Roberts and Wil Hallstrom are tucked in the back jump seats listening to the scanner for signals they hope are being transmitted by this year's fledglings.

In June, they attached radio transmitters—each tuned to a different frequency—to 12 nestlings just as they were ready to fledge. Now, in mid-July, the team spends their time searching for signals. "Every day, we're just trying to make sure everybody's alive," Carol says. Some have been eaten by predators and some have moved out of range.

It's a survival study. There are four left.

As we drive into the study area, they tell me with humor and trepidation about the moose traffic jam that pinned them in their truck along a narrow road for hours. The moose was a juvenile, and very dodgy looking. They think it was sick. This is only one of the many perils of the season,



Researcher Wil Hallstrom descends into a wetland tracking a Rusty Blackbird fledgling. Photo by Dyanna Smith.

including flat tires and broken refrigerators.

Kelly and Wil suddenly hear the ping of a fledgling transmitting.

I don't hear anything but radio static.

2018 Rusty Blackbird Breeding Season Summary

by Carol Foss

The 2018 field season was much drier than that of 2017, but made up in cool temperatures what it lacked in rain. We found activity at 31 of 63 previously known Rusty Blackbird territories. At least some of the reduction in territories can be attributed to logistical challenges, and we hope that the species' long-term population decline is not beginning to affect our population. Field technicians Charlotte Harding, Wil Hallstrom, Kelly Roberts, Katrina Fenton, and volunteer Isabel Fleisher located and monitored 26 nests in May and June. Eighteen (69%) of the monitored nests were successful, and we observed recently fledged young at another eight locations late in the season.

The team captured and banded six adult males, four adult females, and 22 nestlings. We observed seven previously banded individuals, including one male that was banded in 2012. Another male, banded as a nestling in 2017, was recaptured at a nest almost seven miles from his nest of origin. We also collected blood samples to explore potential effects of bird blow fly parasitism on nestling health.

We successfully attached radio transmitters to 12 nestlings for a fledgling survival study and attached pinpoint geolocators, provided by the Smithsonian Migratory Bird Center, to three adult males. Locating and recapturing these males to retrieve location data will be a high priority in 2019. Of the 12 telemetered nestlings, three were predated within the first week after leaving the nest and the remaining nine all survived the first three weeks after fledging. Two siblings, accompanied by their mother, disappeared from our study area after 28 days, headed on a trajectory almost due north! This is a surprising path, when ultimately they will need to migrate south.

This year's nest analyses documented bird blow fly parasitism in 79% of nests dissected. This percentage is higher than in previous

After a few more reported pings, the truck slows to a stop and we pile out. Wil puts up a huge, directional antenna that can pick up the signal more strongly. If they can hone in on its location, they will head off on foot to put eyes on that bird. They learn a lot more if they can actually see the fledgling.

"When we find it, we try to see if it's being fed, if a parent is nearby, or if there are other fledglings around," Carol explains to me.

"The gain is 4.5," he reports. This is a fairly strong signal, meaning it's close enough to try to see. They decide to set off towards the signal. I mildly panic as all three of them disappear down a steep embankment, instantly swallowed into the foliage, twigs snapping. As soon as I can't see them I become urgently aware that we never discussed how long they might be gone or what I should do if a bear comes, or a dodgy moose.

In the abandoned silence I have a chance to survey the area. Common Yellowthroat, White-throated Sparrows, deerflies...

years (range of 52-70%). However, the maximum count for a given nest was 17, considerably lower than previous highs of 34-77. As in 2015, the first year we discovered bird blow flies parasitizing



A nestling Rusty Blackbird showing the antenna from its radio transmitter. Photo by Charlotte Harding.

New Hampshire Charitable Foundation, US Fish & Wildlife Service, and Wagner Forest Management for continuing support of this work; to the Arthur L. "Bud" and Elaine V. Johnson Foundation and the Maine Outdoor Heritage Fund for supporting the fledgling survival study; to LightHawk Conservation Flying for helping us track "lost" fledglings; and to Adrienne Leppold of the Maine Department of Inland Fisheries and Wildlife for assisting with banding activities.

Rusty Blackbirds in our study area, nests contained evidence of only a single bird blow fly species. Two species were present in 2016 and 2017. We still have much to learn about the relationship between bird blow flies and Rusty Blackbirds.

We are grateful to our cooperating landowners, Seven Islands Land Company, Umbagog National Wildlife Refuge, Wagner Forest Management, and Weyerhaeuser (formerly Plum Creek); to the Conservation Biology Research Fund at the

To be fair, I decided not to go with them, they didn't just leave me. A dark songbird flies low from shrub to shrub. A Winter Wren floods the stream side of the road with his lyrical song, and I calm down, easing into my temporary habitat.

About 15 minutes later, I see Carol, Wil, Kelly and the antenna pop up onto the road 100 yards away.

"Any luck?" I ask them, when they make it to the truck. "No."

We load back up and continue searching for signals.

Rusties tend to stay near water. They eat aquatic insects, picking them up through the mud and shallow water. So, we drive the roads along shallow streams and visit wetland areas. I ask about the shrubs with bright red berries that are everywhere along the roadside. Those are the creatively named Red-berried Elders that Rusties also feed on when in season.

Although the study has been going on for years, this is the first time they have put transmitters on fledglings to try to help understand why the species is in such dramatic decline.

We're four hours into the day now, heading out along the Dixie Brook Road to look for the "Dixie Chicks"—two transmitters birds from the same nest. We begin to pick up faint pings on frequency 261. We stop the truck and get out. Kelly holds up the directional antenna. Everyone is quiet. Listening. She rotates slowly. The signal is gone. Back in the truck, driving slowly.

"Oh, I got 642," Wil says; we're barely back on the road. Everybody out.

"From here to here," Kelly nods as she rotates a pie-piece portion of the 360 degrees she's monitoring with the antenna.

"Almost due south," Wil takes a bearing.

"It's super faint, but it's here," Kelly adds.

We get in the truck and turn around, drive towards the signal, then pull over. Everyone gets out. The antenna goes up. Nothing for 642, but we pick up 261 again, pinging from the opposite direction. Back in the truck to head towards 261. Get out, antenna up, nothing. Back in the truck. Ping. It's 642.

"We are getting played," Kelly says. It's hard to disagree as this game goes on for quite some time—ping, it's one bird, stop the truck, everyone out, put up the big antenna, rotate around, find nothing, get back in the truck, ping.

After we chase the Dixie Chicks around for a while, Carol calls the morning's research to a close without putting eyes on either of them. But each day that the individual fledglings are located—even faintly—is a success.

"At least we've got something on everybody," Carol says. "At least they are all moving."

Conservation Notes

North Country is the State's Cliff Swallow Stronghold

by Pamela Hunt

In June and July I continued to check for Cliff Swallow colony sites. Between my 2017 and 2018 surveys, and records submitted to eBird, I was able to estimate that New Hampshire supports approximately 120 pairs of this threatened species, which are distributed among 20-25 colonies. This is in stark contrast to the Breeding Bird Atlas in the early 1980s, when the species was confirmed breeding in 81 blocks, possibly with multiple colonies in some blocks (Figure 1). That's less than a third as many colonies as 30 years ago.

Almost half the known colonies and 65% of nests are in Coos County. Pittsburg, at the far northern tip of the state, has most of these, with six colonies (supporting roughly 60 pairs). Another six colonies are spread out across the Lakes Region (Danbury to Tamworth), and five are near the coast. Numbers appear to still be declining in the latter two regions, with some colonies having disappeared in just the last 5-8 years. We still don't understand the factors behind Cliff Swallow declines in New England, especially since the species is still doing well to the west and south of us. The best thing you can do is report the locations of active colonies to NHeBird (<https://ebird.org/nh/>). If you see birds foraging in June and July, track them down, find out where they're nesting, and try to get an accurate count of active nests (not an easy task!). Your information may help us keep their breeding sites safe.

Funding for Cliff Swallow monitoring comes from a contract with the NH Fish & Game Department.



Figure 1: Map showing Cliff Swallow colonies in NH. Black circles are colony locations during the Breeding Bird Atlas (1980-85). Orange circles are colonies known to be active in 2017-18. Photos show two different colonies in Pittsburg, by Pamela Hunt.

Grasshopper Sparrow Update

by Pamela Hunt

Over the last three years, NH Audubon biologists and our partners have visited all the known sites for state-threatened Grasshopper Sparrows, resulting in the first comprehensive overview of the state's population in over a decade. The Concord and Keene airports remain the species' strongholds, with roughly nine territories each. The Pease International Tradeport is a little more challenging to survey because of access, but I was able to join a NH Fish & Game biologist doing Upland Sandpiper surveys for three days this summer. Between those quick visits and reports from other birders, there were at least seven singing males at that site in 2018. The Manchester airport is even harder to access, but

Diane DeLuca was allowed to search from the perimeter fence this summer and found a single male in July – not far from where the species occurred when this site was last checked in 2006. Chances are there are more in there, but getting in to search is simply not an option. Three sites have consistently supported 3-5 territories in recent years: Cemetery Fields in Amherst, the old Manchester landfill, and a new site at the former racetrack in Hinsdale. Finally, random sparrows appear occasionally in suitable habitat elsewhere, and in 2018 a bird appeared at a farm in Rollinsford. Taken together, over the past three years New Hampshire has hosted 30-35 Grasshopper Sparrow pairs at up to eight different sites.

Policy Notes

by Carol Foss

Senior Advisor for Science and Policy

NH Audubon's Environmental Policy Committee members were frequent visitors to the Legislative Office Building and the State House during the 2018 legislative session. Committee members signed in (view Table 2 online) or provided testimony on 35 bills (Table 1, below), which met a variety of fates, as detailed in the tables. Many of these bills pertained to renewable energy or pollution issues. A few involved funding for or jurisdiction of the State's natural resource agencies. We also urged senators and representatives to override the Governor's vetoes of two energy bills SB 365 (biomass) and SB 446 (solar) in September. Legislators overrode the veto of SB 365; the Senate voted to override the veto of SB 446 but the House sustained the veto in a close vote. Full text and docket details for these bills are available through the New Hampshire General Court website <http://www.gencourt.state.nh.us/>.

Staff has also been active at the Federal level. We continue to participate in the Conservation Funding Caucus, which is working for passage of the Recovering America's Wildlife Act. This legislation would make revenues from energy and mineral development on federal lands available for funding state wildlife conservation and restoration programs for fish and wildlife species of greatest conservation concern. The Recovering America's Wildlife Act would make a huge difference in NH by supporting efforts to conserve declining species, such as bats, for which no funding is currently available. Introduced as HR 4647 in December 2017, the bill now has 93 bipartisan cosponsors, including NH's representatives Annie Kuster and Carol Shea-Porter. A Senate

2018 Summary of Environmental Policy Activities

version, S.3223, which calls for annual appropriations rather than dedicated funding, was introduced in July.

Carol Foss attended a January forum sponsored by Rep. Carol Shea-Porter at the Seacoast Science Center, where a panel of local stakeholders discussed the potential impacts of a proposal by the Bureau of Ocean Energy Management to open waters of the Atlantic and Pacific outer continental shelves to oil and gas leases, and subsequently submitted formal comments on the proposal. While in Virginia for a February meeting of the independent Audubon societies, Doug Bechtel and Carol Foss visited the Capitol Hill offices of representatives Annie Kuster and Carol Shea-Porter and Senator Jeanne Shaheen to discuss reauthorization of the Land and Water Conservation Fund, the

Recovering America's Wildlife Act, and protection of the Migratory Bird Treaty Act, the Endangered Species Act, and other environmental laws and regulations. Doug and Carol also attended a September meeting at Pawtuckaway State Park, sponsored by Senator Shaheen, to discuss reauthorization of the Land and Water Conservation Fund.

We continue to monitor Portland Pipe Line Corporation's (PPLC) efforts to overturn a South Portland, ME ordinance, adopted in July 2014, which bans crude oil exports from the city's port. PPLC filed suit in February 2015 to challenge the "Clear Skies" ordinance, which effectively blocks flow reversal on the 236-mile pipe line between Portland and Montreal. A federal judge put a hold on the suit in May 2017, but denied the city's motion to dismiss the case that August. Last December, a federal

district court judge dismissed all but one of the company's claims, leaving open the question of whether the ordinance violates the US Constitution. Then, in August 2018, a federal court ruled that the ordinance does not violate the Constitution. Whether or not PPLC appeals this ruling remains to be seen.



We are delighted to have Policy Intern Maxine Asmussen (right), a junior at Hopkinton High School, working with Carol Foss (left). Maxine is exploring local and federal policies affecting the environment, and will be delving into state issues as the legislature gears up for the 2019 session.

Table 1. NH Audubon provided testimony at hearings for the following bills.

Bill Number	Topic	Intent	NH Audubon Position	Outcome
HB 1210	Land Use	Establishing a committee to study the effect of current use taxation on small and rural municipalities	Oppose*	Laid on Table
HB 1342	Wildlife	Permitting recognized dog or sporting clubs to trap and possess wild rabbits and hares	Comment	Sent to Interim Study
HB 1411	Wildlife	Increasing the level of matching funds for public donations to the nongame species account from \$50,000 to \$100,000	Support	Enacted, Chapter 0180
HB 1616	Land Use	Requiring legislative approval for Regional Planning Commissions to accept money from governmental sources other than the state of NH	Oppose	Inexpedient to Legislate

*Joint testimony with Appalachian Mountain Club, Society for the Protection of NH Forests, The Nature Conservancy

Sanctuary Notes



Field Loop Trail at Silk Farm Wildlife Sanctuary in Concord. Photo by Phil Brown.

From the Director of Land Management

Our 39 wildlife sanctuaries offer diverse habitats for wildlife and natural communities, as well as diverse opportunities for learning, recreation, rest, and reflection. Some are well-loved by a multitude of users and user groups, sometimes posing a challenge for managing these lands for wildlife and people. This balance can be difficult to attain, but thanks to our partners and volunteers we are able to accomplish much across a portfolio of nearly 8,000 acres with land in each county of the state.

Some of the many aspects of wildlife management and land stewardship that NH Audubon focuses on each year include: trail management and maintenance of visitor services such as trailheads and signage; habitat stewardship and restoration through mowing, forestry, plantings, and managing beaver-dominated landscapes; wildlife, rare plant, and other natural resource monitoring; conservation easement monitoring; and land management with partner organizations, funders, neighbors, and supporters. Staff members and volunteers lead educational field trips to demonstrate management and highlight natural occurrences on several of our properties, annually. Even environmental policy has been influenced through the use of our sanctuaries as demonstration sites.



This year, we highlight some of the many contributions our Sanctuary Stewards and other volunteers have made in maintaining these special lands we call *wildlife sanctuaries*. Our team contributes hundreds of hours annually to help us manage for wildlife habitat and provide responsible, low-impact recreation opportunities and access to some 70 miles of trails. In 2018 particularly, we have relied on these individuals even more heavily than in past years.

The following stories are just a handful of the many examples of how maintaining a vibrant land stewardship program plays an important role in protecting the state's natural environment.

I'm pleased to report on the 2018 season at NH Audubon's wildlife sanctuaries.



Icy rose hips on the Bellamy River Wildlife Sanctuary in Dover (above); Great Turkey Pond at Silk Farm Wildlife Sanctuary (right). Photos by Phil Brown.

Phil Brown

Director of Land Management

Deering Wildlife Sanctuary Forest Management

by Phil Brown

In August, NH Audubon completed a third round of forest management on parts of the Deering Wildlife Sanctuary (in Deering) in recent years. Management occurred on two distinct parcels on either end of the 890-acre property and covered a total of approximately 40 acres. The specific objectives were varied but all focused on wildlife habitat improvements conducted through a cost-share contract with the USDA's Natural Resources Conservation Service (NRCS). The NRCS funded some of the more cost-intensive practices such as the wildlife patch cuts on over 10 acres, invasive species management in advance of the harvesting, seeding and mulching of log landing sites, and nest boxes for Eastern Bluebirds and American Kestrels.

NH Audubon worked closely with foresters from Meadowsend Timberlands, LTD in planning the carefully and expertly implemented harvest, which was conducted by D.H. Hardwick and Sons, Inc. Whole-tree harvesting was utilized to quickly clear predominantly average white pine stands in preparation for the establishment of young (early successional) forest conditions – a habitat that is in short supply and is beneficial to a number of declining bird and wildlife species. Particular attention was paid to soil conservation practices, riparian buffers, retention of snag and cavity trees, and the addition of large downed trees and brush piles for wildlife.

The harvest also created an overflow parking area at the sanctuary's upper trailhead of the Black Fox Pond Trail, a major



Deering Wildlife Sanctuary forest management. Photo by Phil Brown.

recreational trail. Harvesting alongside the trail was aimed at retaining younger “crop” trees of Red Oak and American Beech which provide a valuable food source for wildlife, and creating a clearing to release apple trees for the same purpose. This trail should be an even better place to interact with wildlife as trees and shrubs begin to regenerate and “seed in” during the next several years. NH Audubon and partner organizations including NRCS and UNH Cooperative Extension are planning a demonstration field trip focused on the variety of forest management types the sanctuary showcases.

Sanctuary Snapshot



Rainstorm over Goodhue Hill from Bald Mountain on Willard Pond Wildlife Sanctuary in Antrim. Photo by Phil Brown.

Sanctuary Notes



One of the new map cases on the Little Cherry Pond Trail.
Photo by Kevin Jones.

Pondicherry: “You Are Here”

by Joanne and Kevin Jones, Pondicherry Sanctuary Stewards

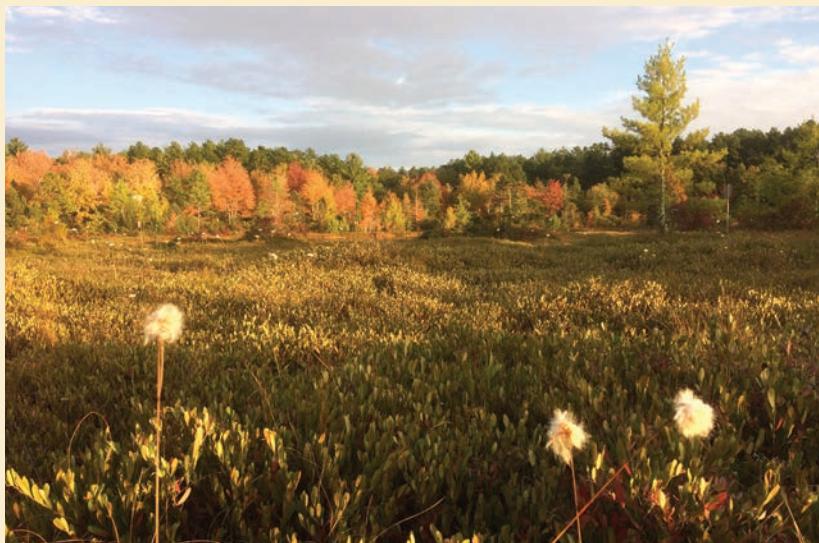
Thanks to a generous donation from two longtime Ammonoosuc Chapter members, new maps have been installed at three junctions on the Little Cherry Pond Trail at Pondicherry National Wildlife Refuge. The map boards are Sintra foam core from Megaprint in Plymouth and show enlarged sections of the Pondicherry Wildlife Refuge Map & Guide with each junction clearly marked by a “You Are Here” label. They are mounted and displayed in cases that were made by the prison industries program at the Northern NH Correctional Facility in Berlin. A fourth “You Are Here” map has also been installed at the junction of the Mud Pond Trail and the Mooseway.

The Pondicherry Wildlife Refuge Map & Guide has been very popular and is currently in short supply but will be reprinted next year. Trail descriptions and GPS tracks for Pondicherry can also be found on the Trail Finder website (www.trailfinder.info).

Ponemah Bog Field Trip Draws 55 Participants

by Phil Brown

On July 21, dragonfly expert and nature enthusiast, Tom Young, led the last Bog Walk of the season. There were 55 participants – perhaps the most ever in the history of Bog Walks! Many participants were impressed with Tom’s extensive knowledge of dragonflies and other taxa, as well as his ability to share this interest so passionately with others. We are looking forward to next year’s walk with Tom, and the rest of the Bog Walk series.



Ponemah Bog in fall. Photo by Phil Brown.



Scotland Brook Wildlife Sanctuary Special Visitors

by Joanne and Kevin Jones, Scotland Brook Sanctuary Stewards

Gene Twaronite and Josie Kelleher, who now live in Arizona, stopped by Scotland Brook Wildlife Sanctuary in Landaff in September to meet and walk the trails with us. The sanctuary was established in 1984, when Gene and Josie donated the land of the Scotland School Environmental Center to NH Audubon. It was wonderful to chat with them and learn more about the history of the sanctuary.

Gene Twaronite and Josie Kelleher at the Scotland Brook trailhead.
Photo by Kevin Jones.

New Kiosks and Signage for Hebron Marsh and Hoyt Wildlife Sanctuaries

by Phil Brown

In spring and summer, NH Audubon engaged local contractor, Matt Coughlan, to build and install two beautiful and functional informational kiosks at the trailheads of two of its most popular sanctuaries – Hebron Marsh (in Hebron) and Hoyt (in Madison). NH Audubon then designed and installed interpretive signage. The kiosks are at central access points and provide key information regarding usage, history of these properties, and ecological notes in an effort to better protect natural resources. Hoyt Sanctuary Steward, Heather McKendry, was particularly involved and instrumental in securing a building permit and helping with design, as well as installation of signage.

New kiosk and interpretive signage at the Hoyt Wildlife Sanctuary in Madison. Photo by Phil Brown.



Installing a garden at the McLane Center. Photo by Doug Bechtel.

SPS Sparks Volunteer Day

by Phil Brown

In May, NH Audubon staff and volunteers teamed up with St. Paul's School's "Sparks" alumni group for its fourth annual Day of Action. Over 100 alumni and graduating seniors came together for an intensive and fun day filled that included several major volunteer projects on the Silk Farm Wildlife Sanctuary. Projects included construction of bog bridges, a raised bed for a developing pollinator garden near the trailhead, McLane Center playscape site preparation, trail restoration, and beautification projects.

These improvements will help to provide easier and safer use of the trails by an increasing user group, to improve wildlife habitat, and to facilitate engagement with nature by all. By day's end, almost 500 hours of volunteer service had been devoted to improvements for wildlife and people at our headquarters property. We look forward to our continued partnership with St. Paul's School and the Sparks group.

Thank You

Work on our sanctuaries is a team effort. We are grateful to the sanctuary stewards, committee advisors, and many individuals and groups who volunteer their time in helping NH Audubon manage wildlife sanctuaries, monitor wildlife, or educate the public. Many generous individuals contribute to our sanctuaries through specific sanctuary projects, memorials, general contributions, and in-kind gifts. A special thank you to our many land stewardship and conservation partner organizations and agencies, especially the USDA's Natural Resources Conservation Service for work on wildlife habitat restoration and stewardship. Thank you all for your support.

Grasslands on the Silk Farm Wildlife Sanctuary in Concord. Photo by Phil Brown.



Volunteer Spotlight: Remembering Jack Gleason

by Phil Brown

In the summer of 2018, NH Audubon lost friend and longtime volunteer Jack Gleason. For over 10 years, and until just before his passing, Jack led the Friends of Ponemah Bog, a group of Nashaway Chapter members whose work stewards the region's most treasured wildlife sanctuary through education and land management. In 2011, Jack was awarded *Volunteer of the Year* by NH Audubon for his exceptional contributions.



Jack Gleason (left) instructing field trip participants on the finer points of bog formation. Photo by Phil Brown.

Those who worked alongside Jack quickly became aware that his contributions went far beyond most volunteers. He, at times single-handedly, managed the multitude of stewardship tasks with ease: continuously repairing and replacing wooden boards, benches, and platforms along the nearly one-mile long boardwalk system; brushing back overgrown vegetation that blocks the trails; monitoring and cleaning several nesting boxes around the trail system annually; replacing signs, and maintaining kiosks. Jack was a natural leader, inspiring others by his example and also delegating effectively....and he was not without charm. Somehow, he had recruited "eight wonderful women" to the Friends group in short order.

As a Master Gardener, Jack's botanical interests were a perfect fit for Ponemah Bog, and he became deeply interested in all forms of bog life. He took it upon himself to create interpretive displays and materials. He used his own photos to design a poster of flowering bog plants for the kiosk that he was instrumental in installing. Many will remember Jack as a remarkable teacher. Each spring and summer, he organized and led field trips to the bog. His walks would often draw 20 participants (a crowd for the narrow bog boardwalk), and each year, I would receive glowing emails from several of the participants. This was perhaps his favorite task of all.

In 2011, NH Audubon and the Friends group, led by Jack, undertook a major project to raise the bog boardwalk to address more frequent inundation. Jack ordered and paid for all the materials (including over \$3,000 of rough cut hemlock boards), and organized other volunteers and laborers—including those from the county prison—to complete the work. Working with the prisoners was a particularly rewarding experience for Jack, and he was moved deeply by his interactions with them.

His determination bordered on obsessive at times, and Jack often joked that his wife, Jan, was resigned to the belief that the bog would be the end of him. We were working together one late September day, and Jack was pushing a wheelbarrow full of planks along the boardwalk when its wheel became caught directly over an invisible yellowjacket's nest. As I tried to dislodge the wheel, we suddenly noticed the fierce pests and Jack took the full brunt of their attack all over his face and head! It appeared Jack would resume working right away, but he thought it best to head home toward his Benadryl just in case. Not 20 minutes later he returned not only loaded up with Benadryl, but also donning a full beekeeper's suit to complete the remainder of the work around the nest! (Needless to say, he did this alone.) Later that night, Jack returned in his bee suit to make the bog a safer place for volunteers and visitors. It is a rarity that a volunteer steward goes to such measures to finish a task, but this was routine for him.

He took creative problem solving to the next level.

Thanks in no small part to Jack, Ponemah Bog has become one of NH Audubon's most popular and vibrant outdoor classrooms. Schools, camps, wildflower groups, and people from all around come to experience this natural treasure. NH Audubon is considering ways to honor Jack's memory at the bog in honor of his love and dedication to this special place.



Jack in his beekeeper suit addressing the yellowjackets. Photo by Phil Brown.

2018 Annual Meeting & Conservation Awards

New Hampshire Audubon hosted its 104th Annual Meeting at the Mount Sunapee Resort in Newbury on September 15. Field trips started the day, followed by lunch and a fascinating keynote address by author and entomologist Dr. Doug Tallamy. Dr. Tallamy showed us image upon image of delicious caterpillars and stressed the importance of choosing native trees for landscaping. In one count, a native White Oak held 410 caterpillars from 19 different species while a nearby Bradford Pear (an Asian ornamental) had a single caterpillar. Considering it takes upwards of 9,000 caterpillars to raise a single clutch of chickadees, planting native trees supports our songbirds exponentially!

The afternoon culminated with a presentation of the annual awards, recognizing individuals for their conservation efforts. The Tudor Richards Award was presented to Nanci Mitchell of Gilmanton, NH for working tirelessly and effectively for conservation in the Granite State. Nanci is the quintessential grassroots worker with clear vision who makes local land protection happen, and is contagiously passionate about land protection and environmental stewardship.

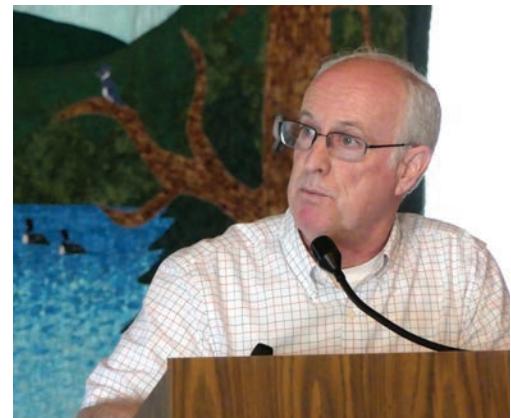
The Goodhue-Elkins Award was given to three educators, in recognition of their outstanding contributions to the education of young people about birds: Rich Aaronian of Exeter, NH; Paul Lacourse of Exeter, NH, and Peggy Meyette of Cornish, NH. All three of these individuals have left a lasting legacy of knowledge and caring about birds among the youth of New Hampshire.

The Volunteer of the Year Award was presented to Robert A. Quinn of Webster, NH. Bob has been volunteering for NH Audubon for more than 40 years. Whether as a trustee, President of the Capital Chapter, or field trip leader, Bob

is always inspiring others to volunteer for NH Audubon.

The President's Award was given to Bill Smagula for outstanding commitment to NH Audubon's mission and success. Bill was a long time employee of Eversource (formerly PSNH) and a dedicated partner in the Amoskeag Fishways Learning and Visitor Center.

We congratulate all of this year's award recipients for their many contributions. A full description of their accomplishments is on the NH Audubon web site under the "About" tab.



Clockwise from top: Peggy Meyette, Paul Lacourse, and Rich Aaronian receiving the Goodhue-Elkins Award; President Doug Bechtel presents the Volunteer of the Year Award to Bob Quinn; keynote speaker Doug Tallamy shares the importance of caterpillars; hawk watching above the clouds atop Mt. Sunapee; Francie Von Mertens presents Nanci Mitchell (right) with The Tudor Richards Award, by Beth McGuinn; Chris Martin (left) and Dave Anderson leading the Something Wild walk, by Beth McGuinn. All photos by Dyanna Smith unless otherwise noted.

**Thank you to Annual Meeting sponsors
Normandeau Associates and Chippers.**



From over 250 photos, here is the winning list, by category, from this year's Wild NH Photo Contest and fundraiser for Massabesic Center.

Best in Show: *Mossy Cascade* by Noah Bagley (right)

Birds: 1st—*Magnificent Heron* by Christopher Stebbins; 2nd—*Dinner time!* by Tom Spine; 3rd—*Maple Leaf Grid* by Dan Beaudet

Wild Plants: 1st—*Wild Iris* by Jeannie Duval; 2nd—*Bird's Foot Trefoil* by Jeannie Duval; 3rd—*Maple Leaf Grid* by Dan Beaudet

Wildlife: 1st—*Seals on Rock* by Jeannie Duval; 2nd—*I Can Fly* by Susan Lipsett; 3rd—*Spicebush Swallowtail* by Jeannie Duval

Landscape: 1st—*Salt Marsh with Glossy Ibis* by Jeannie Duval; 2nd—*Purgatory Falls with Leaves* by Adrienne Bodogh; 3rd—*Lupine and Mountains* by Jeannie Duval

Youth: 1st—*Purgatory Falls* by Adrienne Bodogh; 2nd—*Purgatory Falls Light Flair* by Adrienne Bodogh; 3rd—*Tower Rock* by Jamie Nease; 3rd—*Mt. Washington's Monarchs* by Jocelyn Ryan; 3rd—*Monarch* by Catherine Ryan

The contest was made possible by a generous gift from Ed Broad and our sponsor, Hunt's Camera. Top 75 Gallery: www.nhaudubon.org/bwg_gallery/wild-nh-photo-contest-2018-winners



Noah Bagley won Best in Show. Photo by Amy O'Brien.



Massabesic Center Turns 20!

Celebrate the opening of MAC twenty years ago with our anniversary open house:

January 19, 9:30am-3:30pm

Live animals, crafts, and refreshments. Snowman building, nature scavenger hunt and more! Snowshoe rentals are free for the day.

Do your kids love snow and nature?
Kids ages 6-12
Then February Vacation Camp is for them!

Massabesic Center in Auburn or McLane Center in Concord

February 25-March 1
Visit nhaudubon.org for details

Each day we'll venture outside for games, exploration, and snow fun! Inside, we'll visit with NH Audubon animals and work on nature projects.

Join us for a single day, several days, or the whole week.



Thank You!

NH Audubon is proud to be supported by the following businesses who contributed \$500 or more this calendar year in support of our programs:

Altus Investment Group
Chippers
Concord Garden Club
Endicott Furniture
Foothills Physical Therapy
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Smith Pump, Hooksett
St. Paul's School
Sunrise Labs, Inc.
TD Bank
The Flying Monkey, Inc.
Whole Foods

Two Gifts in One!



This season, give the gift of membership* and receive a beautifully hand-crafted glass ornament from Old Hancock Glassworks

To purchase a gift of membership, and receive a free ornament, stop by the Nature Store at McLane Center or call Membership at 224-9909 x310.

*Does not apply to membership renewals.

In Memoriam

New Hampshire Audubon is honored to receive thoughtful donations in memory of friends and relatives who have passed:

In memory of Dean E. Barber:

Richard Woodfin

In memory of Doris Corbett:

Roberta Gaudette

Kathleen Fleming

In memory of Delia N. Daniels:

Carol Kowitt

In memory of Therese H. Dargie:

Donna Lamothe

Nadine T. Scroggins

David Hurst

Michael F. Atzert

Laurie A. McDonald

David Hurst

In memory of Hagen D. Esty-Lennon:

Grazyna Medynski

In memory of John L. Gleason:

Peter G. Warren

Joanne H. Laychak

Jeff Gleason

William Paxton

Ralph Andrews

Ronald J. Roy

Janice L. Morrow

Sandra Ostman

Miki Foley

Charlene A. Schrom

Robert F. Giddings

Nancy Ebeltoft

Ted Sprinkle

Mary Jo Dudley

In memory of Thomas Gundlach:

Lori Sampson

In memory of Walker Hallett:

Richard S. Aaronian

In memory of Linda Laramie:

Kris Dobbins

In memory of Jon Ring:

H. Elizabeth Ring

In memory of Rebecca Schaefer:

Judith N. Badot

In memory of Nancy R. Stearns:

George Lewis

Ralph Ross

In memory of Natalie S. Webb:

Martha W. Snow

In memory of Chandler Robbins:

George and Andrea Robbins

We will miss these long time supporters of NH Audubon who brought so much energy and commitment to our mission.

Bert Becker was a loyal member of the Nashaway Chapter and former President. He participated in the annual Christmas Bird Count into his 90s and always enjoyed the birds in his yard.

George W. Chase had a passion for teaching and a love of the outdoors. He taught for many years at St. Paul's School in Concord, NH and was a NH Audubon Trustee for eight years. He frequently arrived with a bird sighting to share or a question about something he had seen – ready to pass along any information he learned.

Carol Foley was a long time volunteer and educator who brought energy, enthusiasm, humor, and creativity to each program in which she was involved. Always willing to help out in any way, Carol would travel the state from one end to the other to participate in her love of teaching about nature and our environment. Carol's long history with NH Audubon included working at Newfound, Massabesic and the Amoskeag Fishways.

Quarterly Grant Acknowledgements

TD Charitable Foundation
Beech Street Environmental Education Program

Blake-Nuttall Fund
American Pipits
Motus Stations in NH
Seacoast Region Shorebird Survey



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We are working to streamline our mailing list. If you would prefer to receive electronic communications from NH Audubon, please call 603-224-9909 or email nha@nhaudubon.org.



10am-3pm
McLane Center
Concord

Holiday Craft Fair

December 8

Visit McLane Center for a special holiday shopping experience. The Holiday Craft Fair features handmade crafts by local artisans plus a raffle, kid's activities, refreshments and live birds.

Live music by members of the Concord High School Chamber Orchestra

Members receive 20% off Nature Store purchases during the fair.

NH Audubon Winter Afield 2018-2019 • Calendar of Events

Events are free unless noted with \$, FT = Field Trip, SFT = Sanctuary Field Trip, R = Registration Required.



DEC

Saturday Nature Seekers: Natural Creations
Dec 1, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Wee Wonders: Ssslithery Sssnakes

Dec 5, 10-11:30am • \$/R • Massabesic Center, Auburn

Junior Explorers: Hands on with the Animals!

Dec 5, 10-11:30am • \$/R • Massabesic Center, Auburn

Everyday Mindfulness for a Meaningful Life

Dec 7, 9:30-11am • \$/R • McLane Center, Concord

Coastal New England (Leader's Choice)

Dec 8, 7am-5pm • Capital Chapter FT

Leader: Pam Hunt

Holiday Craft Fair

Dec 8, 10am-3pm • McLane Center, Concord

Local artisans, crafts and member discounts at Nature Store

Saturday Nature Seekers: Natural Creations

Dec 8, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Nashua-Hollis Christmas Bird Count Preparation**

Dec 11, 7-9pm • Nashaway Chapter, Nashua

Mascoma Chapter Program

Dec 11, 7-8:30pm • Mascoma Chapter, Hanover

Yurts, Yaks, and Yellow-breasted Buntings

Dec 12, 7:30-9pm • Seacoast Chapter, Rye

Presenter: David Donsker

Birds in your Neighborhood

Dec 14, 10-11:30am • \$/R • Amoskeag Fishways, Manchester

Saturday Nature Seekers: Natural Creations

Dec 15, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Concord Christmas Bird Count**

Dec 16, all or part-day • Capital Chapter FT, Concord

Full Moon Walk

Dec 22, 7-9pm • \$/R • Massabesic Center, Auburn

**Christmas Bird Counts 2018

There are 21 Christmas Bird Counts in New Hampshire, and they are open to all interested birders. Check the website link below for a count near you and contact the person listed if you'd like to help.

Each count takes place in a designated "count circle" on a specific day. The coordinator assigns teams to count birds in each section of the circle, but if you live in the circle you can simply count the birds in your backyard. Each count's survey area stays the same from year to year, comprising a circle fifteen miles in diameter around a central point.

International in scope, the Christmas Bird Count is organized and compiled by the National Audubon Society. Each count picks its own particular survey day between December 14 and January 5. So join in a 100-year-old tradition and have some winter fun!

For a complete list of Christmas Bird Count dates and locations:
<https://nhbirdrecords.org/new-hampshire-christmas-bird-count>

JAN

Saturday Nature Seekers: All About Eagles

Jan 5, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Mascoma Chapter Program

Jan 8, 7-8:30pm • Mascoma Chapter, Hanover

Past, Present, and Future of NH Bobcats

Jan 9, 7:30-9pm • Seacoast Chapter Program, Rye

Presenter: Rory Carroll, UNH Conservation Biologist

Mammals in your Neighborhood • KIND Program

Jan 11, 10-11:30am • \$/R • Amoskeag Fishways, Manchester

20th Anniversary Open House

Jan 12, 9:30am-3:30pm • Massabesic Center, Auburn

Celebrating 20 years of nature education at the Massabesic Center!

Winter Tree and Plant ID

Jan 12, 10-11:30am • \$/R • Massabesic Center, Auburn

Pizza Party with the Painted Turtles • KIND Program

Jan 12, 11am-12:30pm • \$/R • Amoskeag Fishways, Manchester

Trail Cameras and Climate Change

Jan 12, 2-3:30pm • \$/R • Massabesic Center, Auburn

Winter Animal Tracking

Jan 13, 1-2:30pm • \$/R • McLane Center, Concord

Yoga with the Animals

Jan 13, 5:30-7pm • \$/R • Massabesic Center, Auburn

Wee Wonders: Snow Birds

Jan 16, 10-11:30am • \$/R • Massabesic Center, Auburn

Junior Explorers: Snow Birds

Jan 16, 10-11:30am • \$/R • Massabesic Center, Auburn

Geology of the Lakes Region

Jan 17, 7-8:30pm • Lakes Region Chapter, Moultonborough

Presenter: Jim Vernon

Night Sky Heroes

Jan 18, 7-8:30pm • \$/R • Massabesic Center, Auburn

Eagles Along the Merrimack • KIND Program

Jan 19, 8-11am • \$/R • Amoskeag Fishways, Manchester

Ongoing
Events

Snowshoe Rentals

Dec 1-Feb 28 • \$ • Massabesic Center, Auburn
Weds-Sat 9am-2pm

Introduction to Winter Birding and Feeding

Jan 19, 10am-12pm • McLane Center, Concord

Saturday Nature Seekers: All About Eagles

Jan 19, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Geology of the Lakes Region

Jan 19, 7-8:30pm • Lakes Region Chapter, Moultonborough

Full Wolf Moon Walk

Jan 21, 7-9pm • \$/R • Massabesic Center, Auburn

Cosy Sheridan in Concert

Jan 24, 7-9pm • \$ • McLane Center • Birds and Beans Coffee House

Eagles (and Others) on the Merrimack

Jan 27, 8:30am start • Capital Chapter, Concord

Yoga with the Animals

Jan 27, 5:30-7pm • \$/R • Massabesic Center, Auburn

Wee Wonders: Who is Wearing White

Jan 30, 10-11:30am • \$/R • Massabesic Center, Auburn

Junior Explorers: Snow Walkers

Jan 30, 10-11:30am • \$/R • Massabesic Center, Auburn

Center Details

McLane Center

603-224-9909
84 Silk Farm Rd, Concord NH 03801
Mon-Fri 9am-5pm, Sat 10am-4pm

Massabesic Center

603-668-2045
26 Audubon Way, Auburn NH 03032
Weds-Fri 9am-4pm, Sat 9am-3pm

Amoskeag Fishways

603-626-3474
4 Fletcher St, Manchester NH 03103
Mon-Sat 9am-5pm

Newfound Center

603-744-3516
290 N Shore Rd, Hebron NH 03241
closed for the season; trails open

FEB

Sewall's Falls

Feb 2, 8-11am • Capital Chapter FT, Concord

Winter Bird Walk

Feb 2, 10-11:30am • \$/R • Massabesic Center, Auburn

Adventure Treasure Hunt

Feb 2, 10:30-11:30am • \$ • McLane Center, Concord

Saturday Nature Seekers: River Otter Fun

Feb 2, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Animal Tracking Workshop

Feb 2, 1-2:30pm • \$/R • Massabesic Center, Auburn

Slithery, Slimy, and Scaly • KIND Program

Feb 8, 10-11:30am • \$/R • Amoskeag Fishways, Manchester

Saturday Nature Seekers: River Otter Fun

Feb 9, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Find full event details at nhaudubon.org/calendar

Tips on searching the Events Calendar from any page:

- ❖ Hover over the "Events and News" menu
- ❖ Select "Calendar"
- ❖ Click the white "Find Events" search bar to open
- ❖ Search by "Date" or enter the title in "Keyword"
- ❖ Click the dark gray "Find Events" button

See all the month's events without searching: click on the light gray "View As" button and select "Month" instead of "List".

Backyard Winter Bird Survey

Feb 9 & 10 • Statewide

Yoga with the Animals

Feb 10, 5:30-7pm • \$/R • Massabesic Center, Auburn

The Romantic Habits of Animals

Feb 12, 7-8pm • \$ • Massabesic Center, Auburn

Mascoma Chapter Program

Feb 12, 7-8:30pm • Mascoma Chapter, Hanover

Wee Wonders: Life Under Ice

Feb 13, 10-11:30am • \$/R • Massabesic Center, Auburn

Junior Explorers: Life Under the Snow and Ice

Feb 13, 10-11:30am • \$/R • Massabesic Center, Auburn

Oyster Restoration by Design in the Great Bay Estuary

Feb 13, 7:30-9pm • Seacoast Chapter, Rye
Presenter: Dr. Alix Laferriere, Coastal and Marine Director, TNC

Let's go ICE Fishing! Part One

Feb 15, 6-8pm • R • Amoskeag Fishways, Manchester

Let's go ICE Fishing! Part Two

Feb 16, 9am-1pm • R • Amoskeag Fishways, Manchester

Annual Wilder Dam Eagle Watch

Feb 16, 10am-12pm • Mascoma Chapter FT, Wilder, VT

Saturday Nature Seekers: River Otter Fun

Feb 16, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Remarkable Reptiles with Live Animals

Feb 16, 1-2pm • \$/R • Massabesic Center, Auburn

Full Moon Walk

Feb 19, 7-9pm • \$/R • Massabesic Center, Auburn

Full Moon Hike

Feb 21, 6:30-8pm • \$/R • McLane Center, Concord

Documentary: Ordinary Extraordinary Junco

Feb 21, 7-8:30pm • Lakes Region Chapter, Moultonborough

Saturday Nature Seekers: River Otter Fun

Feb 23, 11am-12pm • \$ • Amoskeag Fishways, Manchester

Yoga with the Animals

Feb 24, 5:30-7pm • \$/R • Massabesic Center, Auburn

Crafts & Critter Meet and Greet

Feb 25-Mar 1 Daily, 11-11:30am or 2-2:30pm, plus all-day crafts • \$ • Amoskeag Fishways, Manchester