

NH Audubon Afield

Notes from the Field Edition

WINTER 2021-22





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FROM THE PRESIDENT'S DESK

When I take a moment to reflect on all that New Hampshire Audubon staff has accomplished this year, it always amazes me to remember the breadth and depth of our work. The past one to two years have been a blur for so many reasons. Like me, I am sure you have suffered the common disconcerting time-warp that the COVID pandemic has wrought. What day is it? What month again? Was that yesterday or last week? One very refreshing way to clear the cobwebs is to simply GO OUTSIDE. Go for a walk. Observe the trees and birds. Feel the wind. Nothing is more restorative.

On these walks I often reflect about all we do at New Hampshire Audubon. This edition of *Afield* is a sampling, albeit a broad one. It still can't tell all of our stories, but it comes close, particularly about our science and policy work. The next issue will focus on education and lands.

I'm proud of our work – and I hope that you, as a supporter of New Hampshire Audubon, are too. Here are a few highlights of what's inside this 2021 *Notes from the Field* edition.

- How we document trends in bird populations in New Hampshire (State of NH's Birds, ebird, NH Bird Records, Backyard Winter Bird Survey).
- Field monitoring for rare, declining, or recovering wildlife species, such as Purple Martins, Ringed Boghaunters, grassland birds, Cliff Swallows, raptors, Rusty Blackbirds, Common Nighthawks, and more!
- Cutting edge technology to inform migration patterns and identify conservation areas to protect the most important seasonal bird movement locations (Monarch Butterfly tagging and the Motus wildlife tracking system).
- Long-term research and monitoring documenting when things bloom, freeze, move around, and how these patterns might be shifting with climate



change (the discipline of study called "phenology").

- How we track, influence, and support or fight the dozens (and dozens!) of environmental bills that move through our legislative process.
- Celebrations of partnerships, events, and all the amazing people who have volunteered their time or donated funds to support everything we do.

I think I need another walk! While we continue our path toward a world less dominated by COVID, it is comforting to know that people like you understand that our work transcends and restores not only the wildlife and habitats we work to protect, but also the health, peace, and serenity we all need in a changing world. Thank you for your support. I hope you will continue to help us build on the work we do. New Hampshire needs us more than ever before.

I hope I see you outside soon.

Doug Bechtel, President

Cover Photo:

At Russell Crag in Woodstock, several rock climbers and their kids get a close-up look as NH Audubon raptor biologist Chris Martin bands three Peregrine Falcon chicks in June, 2021. Climbers at this site confirmed incubation and hatch, as well as determining seasonal route closures. Photo by Lee Hansche.

Conservation Notes

2021 Summary of Conservation Department Activities



From the Director of Conservation

*Monarchs waiting for their Motus nanotags.
Photo by Carol Foss/NancyTong.*

I am honored to have become the new Conservation Program Director in April 2021. This is a re-envisioned role on the administrative team of NH Audubon that supports not only our Conservation Science team, but also Sanctuaries and Education staff. I've grown into this role by starting as the Grants Manager in January



2019, working with every single program staff member, and proposing millions of dollars worth of grant projects since then. Thankfully, many of those projects have been funded and we continue to sharpen our focus on how we can help avian populations thrive in the Granite State.

I am truly impressed by just how much is accomplished each field season by our incredibly dedicated team. From the nitty-gritty work of submitting federal compliance documentation for the construction of the New England Regional Motus Array, to staying up late (way past my bedtime!) to document the nesting success of Common Nighthawks. From working with state and regional partners managing a multitude of species, to getting their hands dirty maintaining our demonstration pollinator gardens while documenting pollinator visitor species. I am privileged to be able to work with such amazing colleagues. The work that we do around the state is meaningful for both bird populations and the humans that care about them. Please read on to learn more about how each project is creating lasting change for wildlife and for people.

Thank you for being a part of NH Audubon's conservation family,

Marc Nutter
Conservation Program Director

Thank You Donors and Volunteers

We are very grateful to everyone who contributes to the Conservation Department's work. Our projects depend on funding from contracts, grants, and donations. Collaborations and partnerships strengthen our work, but in many instances our partners and funders can only support a portion of our research projects, and that is when we depend on individual donations to help fill the gap. All gifts, both large and small, are important and we appreciate each one. We also depend on volunteers and it is their help that allows us to maximize the dollars we receive.

Thank you for being part of our team!

*To support the department overall or a specific research project please visit our website at
<http://www.nhaudubon.org/donate/other-ways-to-give/support-research/>.*

To contribute to the Conservation Department endowment please call Becky Suomala at 224-9909 ext. 309.

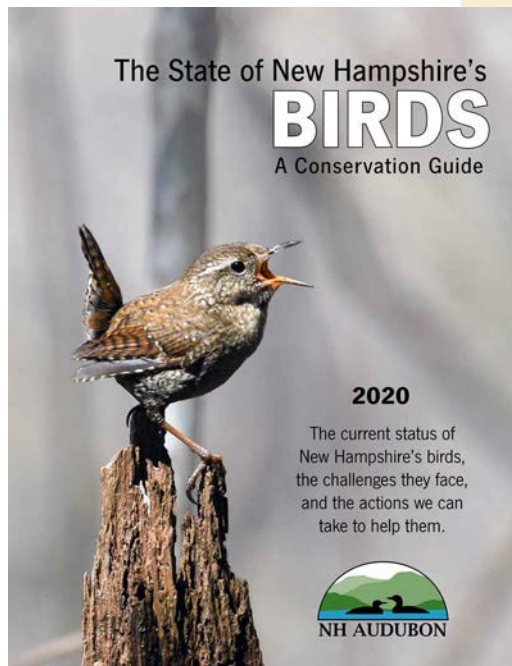
Conservation Notes

New State of New Hampshire's Birds Released in March

by Pamela Hunt

In March 2021, NH Audubon released the latest edition of the *State of New Hampshire's Birds*. This new publication contains up-to-date population trends, threats to the birds and the habitats they occupy, and actions people can take to help birds. There's new information in the sections on the non-breeding season, climate change, and threats such as windows and cats that operate across all habitats. A pdf of the report is available at: <https://www.nh Audubon.org/conservation/the-state-of-the-birds/>, or you can request a hard copy.

The State of the Birds Report was funded by the Biber Foundation, Sally Sanderson Cutler Wildlife Conservation Fund, and gifts from Clara Butler and Robert and Peg Ridgely.



How are our Birds Doing?

What can I do to help them? Find the answers in The State of New Hampshire's Birds.

"Over 60 species of birds are identified as 'species of greatest conservation need' in the NH Wildlife Action Plan. The State of the Birds report is an important tool in communicating the challenges birds face and the actions we can take to help them."

*-Michael Marchand,
coordinator of
NH Fish & Game
Department's
Nongame Program*



One of several Short-eared Owls that delighted birders in Portsmouth in early March of 2021. Photo by Leo McKillop.

New Hampshire Bird Records and NH eBird

by Rebecca Suomala

When COVID-19 kept us all close to home, *New Hampshire Bird Records* opened its archives to provide information on local birding spots. Normally available only to subscribers, the archives are a wealth of information on birds and birding in New Hampshire; and lots of us were out birding. During the spring of 2020 there were 280,934 bird sightings in New Hampshire entered into eBird, and the numbers have kept growing as birding provided a safe hobby.

New Hampshire Bird Records volunteers provide the quality review for New Hampshire sightings and with this number of reports, it's a huge job. The Season Editors also review the data and summarize it for the publication. In each issue there are all kinds of article about birds and birding in New Hampshire, where to bird, field trip reports, a photo quiz, species spotlights, research, and so much more. Check the web site for more, www.nhbirdrecords.org.

Funding for both these projects is provided by subscribers, private donations, the Milne Fund, and the New Hampshire Bird Records Endowment Fund.

The Perils of Being a Purple Martin in New Hampshire

by Pamela Hunt

After two years of solid growth in productivity, our small and threatened Purple Martin population suffered a setback this year. First the good news: After a two-year hiatus, we reinstated the gourd rack off Island Path in Hampton, which had not been erected in 2019 due to House Sparrow issues and in 2020 because of COVID-19. If it weren't for this colony, the story for our coastal martins would be a much sadder one this year.

Things started off well enough, with martins returning to Rye and Seabrook in good numbers in May and starting to lay eggs. By June both colonies were off to a great start, with 21 and 18 nests, respectively. The colony at Hampton was behind by a couple of weeks (largely because as a new site it was settled by later-arriving birds) but by early July it was home to 10 nests – the most ever for this site. Eggs were laid, and chicks were hatching throughout June, but then the weather changed dramatically.

The end of June was marked by a four-day heat wave, with temperatures in Portsmouth reaching 90 or higher, and the first four days of July saw unseasonably cool and rainy weather (high of only 59 on July 3, and over 2.5" of rain). Another 2.7" of rain fell on July 10, contributing to July 2021 being the second wettest July on record for the state. The high temperatures can be of concern, since the gourds we provide for nesting can heat up, although they are equipped with vents for just this eventuality. Cool and/or rainy weather is far more dangerous since it suppresses the flying insects on which martins feed. Cold snaps in spring are known to cause adult mortality, while in summer they make it harder for martins to find food for their hungry chicks.

A check of the Hampton and Seabrook gourds on July 1 found all to be well: no significant mortality from the heat wave. On July 5, John Cavanagh found 82 healthy nestlings in his Rye colony, so presumably they'd dodged the first dose of rain successfully. Nests weren't checked again until mid-August (to minimize the risk of premature fledglings), and that's when we got the bad news. John estimates that half



Purple Martins in the fog in Seabrook, July 15. Photo by Pat Pietrowski.

his chicks were dead in their nests, while in Seabrook it was closer to two-thirds. Hampton fared far better, with only three dead young out of a maximum of 42 nestlings. Overall, despite gains in the number of nests and eggs over 2020, there was a drop in fledglings. That said, the 104 believed to have successfully left their nests is still the second highest since we started keeping careful track around 2010.

So what happened? It appears that the Rye colony suffered its losses during the second rainy period, while Seabrook could have been affected by either or both. The silver lining is that many nests still managed to fledge one or two young despite these losses, suggesting that adults prioritized feeding to the healthiest (noisiest) chicks when food was hard to find. Hampton probably fared better because the chicks were so much smaller due to their later start. They needed less food and the adults appear to have met whatever challenge the weather posed with much more success.

All these martins will winter in South America and are not due back here until the end of April 2022. Special thanks to our dedicated cadre of martin volunteers who will be here to welcome them with fingers crossed.

The Purple Martin project is funded by private donations. Please contact me (phunt@nhaudubon.org) if you are interested in trying to attract a colony to your own property or would like to become a martin volunteer.

Conservation Notes



Ringed Boghaunter by Pam Hunt.

Boghaunters Revisited: Updating Our Data on a Threatened Dragonfly

by Pamela Hunt

The Ringed Boghaunter is the only dragonfly on New Hampshire's threatened species list, and is found at only 15 sites in the southeastern portion of the state. The last time we had systematic data on the species was at the end of the NH Dragonfly Survey (NHDS) in 2011. Since that time a handful more sites have been discovered, and 2021 seemed a good time to check all sites to see if they were still occupied and, if so, how common boghaunters were. Fortunately, two entities with known locations, The Nature Conservancy and NH Army National Guard, were also interested in boghaunter surveys on their properties. Volunteers were recruited from NHDS standbys, and the hunt was on.

Boghaunters are actively almost entirely in May when few other dragonflies have emerged, and their timing can depend on how warm it's been earlier in the spring. The first one of 2021 was in Fremont on May 1, but despite efforts at another eight sites in the following days, no boghaunter evidence emerged until volunteers found exuviae (the shed larval skin of an emerging adult) in Litchfield on May 11. Records from four more sites followed in short order, but in the end we found boghaunters at only seven of the 13 known sites we surveyed. Did we miss them at the other sites or have those populations disappeared in the last decade? Obviously we'll need some more surveys to find out.

Backyard Winter Bird Survey *Save the Date!*

February 12-13, 2022

This annual Survey began in 1987 and thanks to over 1,400 volunteers who participate each year, our biologists can see what's happening with New Hampshire's resident bird populations. 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. Past participants receive last year's results with their 2022 forms in the mail in January. Check the web site for more information. To receive a packet in the mail, call NH Audubon.

To receive a packet in the mail, email bwbs@nhaudubon.org or call NH Audubon at 603-224-9909.



Pine Grosbeaks were abundant last winter as they came south in search of food. They feed primarily on fruit trees, often in the backyards of Backyard Winter Bird Survey participants. Data from the Survey allows biologists to track the movements of northern species that "invade" New Hampshire periodically during the winter. Photo by Steve Mirick, December 31, Jefferson, NH.

A Mixed Season for Grassland Birds

by Pamela Hunt

The summer of 2021 was a busy season in New Hampshire's grasslands. Part of the impetus for this extra attention was a focus on the state-threatened Eastern Meadowlark, which hasn't been subject to a comprehensive survey since it was listed in 2017. In conjunction with this effort, we partnered with colleagues at the Vermont Center for Ecostudies and University of Vermont to initiate a two-state "meadowlark blitz." Volunteers in both states selected known or potential sites for meadowlarks and visited each site multiple times between mid-May and late July in search of meadowlarks and other grassland birds.

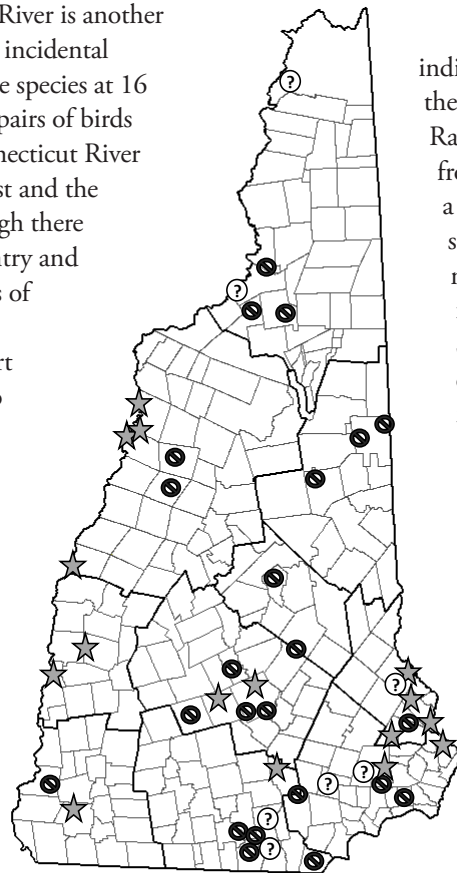
While meadowlarks remain fairly common (but still declining) in Vermont, the east side of the Connecticut River is another story entirely. Between dedicated surveys and incidental records submitted to eBird, we only found the species at 16 sites (see map), which supported only 20-25 pairs of birds in total. Close to half of these are in the Connecticut River Valley, with fair numbers still near the seacoast and the fewest in the Merrimack River Valley. Although there are still occasional records in the North Country and Lakes Region, none were found in these parts of the state despite some careful searching.

At the same time, I made a concerted effort to visit most sites for Grasshopper Sparrow so as to update this threatened species' status. And here's the good news: I estimate at least 40 singing males, higher by a third than any previous statewide estimate. Much of this is thanks to a huge increase at the Concord Airport, which supported 18-20 territories in 2021 (usually it's been around 10!). Grasshopper Sparrows are still only known from a handful of locations though, with most at airports. A highlight this year was finding one at the Lebanon Airport, well away from their core range in the southern third of the state.

Two more species deserve a quick mention. Vesper Sparrow is rarer than either of the preceding two species. It is only common in two areas, Ossipee and Concord, both of which are associated with pine barrens. There are scattered



Horned Lark nest with three fuzzy young just outside the Concord Airport, May 9. Photo by Rebecca Suomala.



The state of our knowledge of Eastern Meadowlarks in 2021. Stars indicate where meadowlarks were detected, slashed circles where searches came up empty, and question marks for historical sites that were not surveyed in 2021.

individuals elsewhere in the state, but I estimate the total population to be under a dozen pairs. Rarest of all is the Horned Lark, now only known from the Concord and Pease airports, although a tantalizing sighting from Keene in mid-May suggests they might still persist there (however none were detected in June or July). A highlight for the season for this species was when Becky Suomala found a nest in mid-April just north of the Concord Airport (see photo, above). This nest fledged two young, and the pair renested in May.

Counting grassland birds is one thing – long term conservation is another. Maintaining grasslands is often in opposition to economic interests (e.g., haying, airport safety) at the sites where these species occur. New Hampshire is lucky that two of our airports are amenable to bird-friendly management: Pease for Upland Sandpipers and Concord for Karner Blue Butterflies. In fact, the latter management may be behind the growth of Concord's Grasshopper Sparrow population. Moving forward, NH Audubon is hoping to work more closely with other statewide partners to implement practices that benefit grassland birds at some of the other key sites where they occur.

Conservation Notes



This male Rusty Blackbird nested in Berlin in 2021 (above) and was still in the area in early October. Photo by Anna Peel. Anna Peel and Patti Wohner attach a nanotag to a Rusty Blackbird (inset). Photo by Margaret Jensen.

2021 Rusty Blackbird Breeding Season Summary

by Carol Foss

After greatly reduced staffing in 2020, we were delighted to welcome a full crew for the 2021 Rusty Blackbird field season. With Levi Burford, Margaret Jensen, and Anna Peel on the ground for the entire season, Patti Wohner with us for the peak banding period, and some assistance from Biodiversity Research Institute staff, we were able to survey 94 areas for breeding activity, 45 of which were occupied. We also located and monitored 30 nests, and banded 38 adults (16 females, 22 males) and 62 nestlings in Coos County, NH and Oxford County, ME.

We attached nanotags to 20 adults, six of which spent much of the summer within detection distance of a local Motus receiving station. As of early October, four tagged individuals were still being detected regularly in our study area, but several had begun their journey south. One male was detected by receivers in Berlin and Exeter on the same day, separated by 4 hours and 22 minutes, and traveling at approximately 24 miles per hour! We look forward to following the migration over the coming weeks.

We are grateful to our cooperating landowners, Savannahwood LLC, Seven Islands Land Company, Umbagog National Wildlife Refuge, Wagner Forest Management, and Weyerhaeuser (formerly Plum Creek); and to the Conservation Biology Research Fund at the New Hampshire Charitable Foundation, the Maine Outdoor Heritage Fund, and Wagner Forest Management for continuing support of this work.



This Rusty Blackbird nest (right) in a small Speckled Alder was the first found in a hardwood in 10 years of research! Photo by Levi Burford (2021).



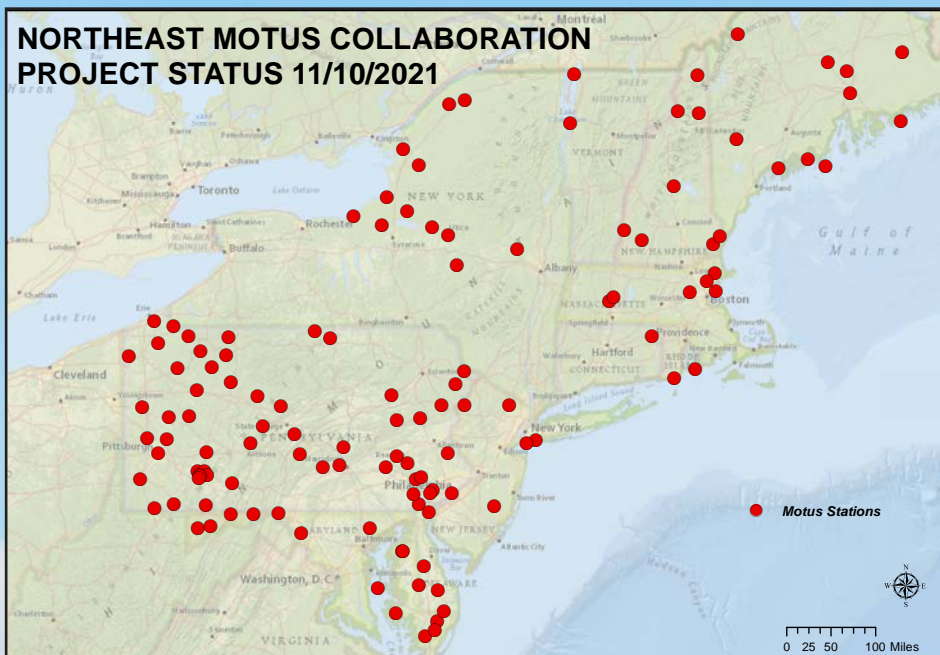
Motus Project Update

by Carol Foss

Many readers will remember that NH Audubon is playing a lead role in an effort to install 50 Motus receiving stations in New England. This project is funded by a \$998,000 Competitive State Wildlife grant (C-SWG) from the US Fish and Wildlife Service, with partners providing \$357,000 of private funds and in-kind services as match. The NH Fish and Game Department is the lead agency with the Maine, Massachusetts, and Pennsylvania wildlife agencies as partners; the Carnegie Museum of Natural History (CMNH), Maine Audubon, Massachusetts Audubon, and the Willistown (PA) Conservation Trust (WCT) are collaborating organizations.

The installation teams, headed by Todd Alleger of WCT for northern New England and Jon Rice of CMNH for southern New England, have had a busy summer, upgrading six existing stations and installing 18 new ones. New Hampshire stations installed to date are located in Berlin, Dix's Grant, Exeter, New Hampton, Northumberland, and Stoddard. In addition to our tagged Rusty Blackbirds, these stations have detected two birds from a Horned Lark and American Pipit project in Quebec, an Eastern Meadowlark tagged in Virginia in May, and a White-throated Sparrow tagged in New Brunswick in September.

We look forward to planning for next year's installations over the coming months and continuing to share the exciting results!



Locations of Motus receiving stations upgraded or installed since 2017. Map created by project partners at Willistown Conservation Trust.

Margaret Jensen and Zoe Korppe attach antennas to the Crystal Mountain receiving station in Dix's Grant (Coos County). Photo by Carol Foss, August 25.

Conservation Notes



One of New Hampshire's 81 fledgling Bald Eagles spreads its wings at Elm Brook Marsh in Hopkinton, NH. Photo by Joe Grande, July 5.

Bald Eagle 2021 Breeding Season

by Chris Martin

Staff and volunteers confirmed 81 territorial pairs of Bald Eagles in New Hampshire in 2021, up nearly 7% compared to 2020. We documented 67 pairs incubating, up almost 4% over 2020. We counted 53 successful nests and 81 young fledged, equaling 2019's record high total. The number of young Bald Eagles fledged per territorial pair remained at 1.00 young/pair in 2021, right at the state's long-term productivity average. A grand total of 735 juvenile eagles have fledged from New Hampshire nests since the species resumed breeding in the state in 1989 and nearly one-third of those young (32%) have fledged in just the past three breeding seasons!

Over the last quarter-century, our state's breeding Bald Eagle population has doubled every five to seven years (see graph). At that rate, there could be over 150 territorial pairs of eagles nesting in the Granite State before 2030! That would be a truly remarkable resurgence in a period of less than 40 years. Several large lakes and rivers in the Granite State now have multiple breeding pairs. For example, Lake Winnepesaukee alone now has 10 nesting pairs (not including five more on adjacent lakes like Squam, Waukewan, Wentworth, and Winnisquam!). The Merrimack River from Franklin to Nashua now has seven nesting pairs and in the North Country, Lake Umbagog supports five pairs (three nests in NH, two in Maine) and Pittsburg's Lake Francis hosts two pairs.

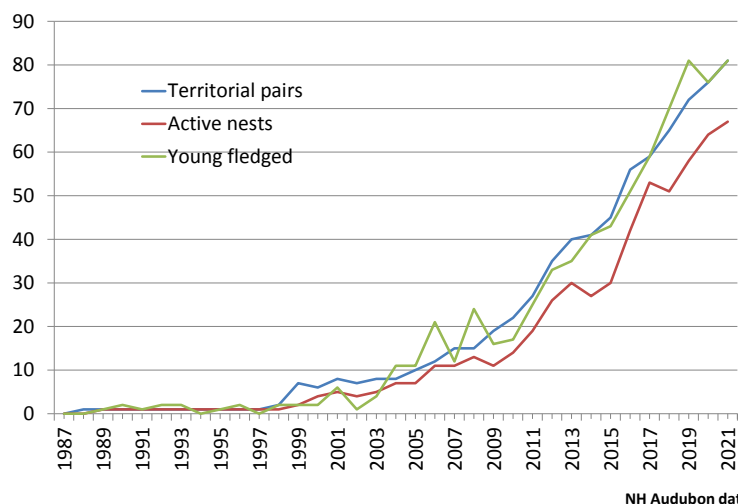
Since Fall 2020, we recorded band encounters with 15 individual color-banded Bald Eagles; 13 were seen/photographed alive, while only two were found dead. Those two dead birds were 21 and 14 years old, and both had been long-standing members of New Hampshire breeding pairs. A total of 11 individuals (73%) were encountered in NH, while the remaining four (27%) were seen in either

Connecticut or Vermont. The oldest was a 21-year-old female who had nested for many years on Squam Lake but was found dead on Wickwas Lake. The youngest was a one-year-old immature from Lake Massasecum that was seen at two separate locations in Connecticut.

NH Fish & Game took the Bald Eagle off the state's Threatened List in March 2017 after several decades of robust eagle recovery. At NH Fish & Game's request, NH Audubon focused monitoring attention in 2021 on the Connecticut River Valley, and in 2022 we will focus on the Lakes Region. We continue to document new breeding pairs wherever they are reported in the state, adding them into future monitoring efforts.

Bald Eagle monitoring and management is funded by private donations and the NH Fish and Game Department's Nongame Program. A special thank you to all our supporters!

New Hampshire Bald Eagle Productivity, 1987-2021



Peregrine Falcon 2021 Breeding Season

by Chris Martin

Overall the 2021 Peregrine Falcon breeding season was a very good one in New Hampshire. While still listed by NH Fish and Game as state-threatened, the Granite State's breeding population is gradually expanding with careful monitoring and management. NH Audubon staff and volunteers confirmed 26 territorial pairs in 2021 (up 8% from 2020), 17 of which were successful, one more than last year. In total 40 young fledged statewide, second only to the record-high 43 young fledged in 2018.

Highlights in 2021 included returning a rehabilitated falcon chick to its parents at Polar Caves in Rumney, collaborating with rock climbing volunteers to post temporary route closure signs at Painted Walls in Albany and Russell Crag in Woodstock, and having Mayor Joyce Craig's help for the banding of four chicks in Manchester.

Occupancy in 2021 of several previously unused sites was another promising development. Joe English Cliff in New Boston had a territorial pair for the first time, as did the I-89 Connecticut River Bridge in Lebanon, NH/Hartford, VT. Tern Project biologists on White Island at the Isles of Shoals also reported (with muted enthusiasm!) the regular presence of both an immature and a sub-adult falcon preying on nesting terns.

Over 30% of New Hampshire's Peregrines now occupy human-created structures, including buildings, bridges, stacks, and quarries. Bridge rehabilitation projects continued to require our management focus in 2021, and we collaborated with Maine DOT at the I-95 Piscataqua River Bridge in Portsmouth NH/Kittery ME, where for the second straight year a pair was unsuccessful nesting in a hollow structural beam under the bridge deck.

In last winter's *Notes from the Field* we highlighted Peregrine Networks' nest cam video of Brady Sullivan Tower juvenile "black/green 90/BU" interacting with parents at the Manchester nest box two months after fledging (<https://nhbirdrecords.org/nh-peregrine-recovery-turns-40/>). Recently 90/BU popped up again, this time at Plum Island in MA, where photographer George Woodland snapped a stunning photo of this 17-mo old bird now in adult plumage (photo above right). All of the 65 fledglings from this breeding site since 2001 have been banded, and to date we've had at least one encounter with 48% of them (31 of 65)!

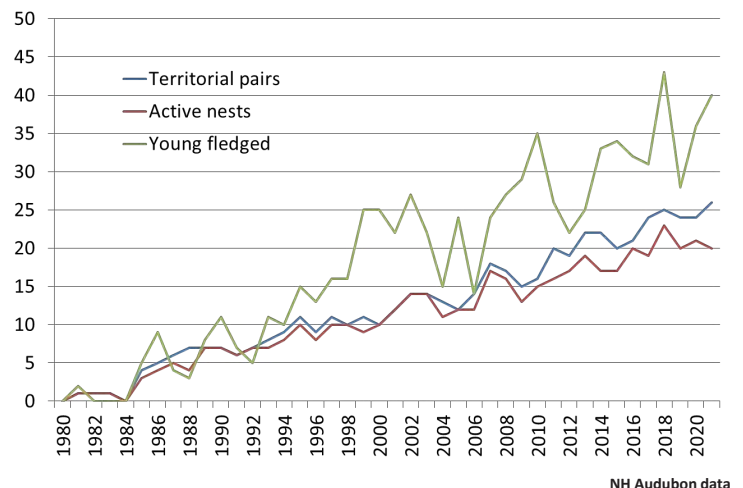
NH Audubon conducts Peregrine monitoring and management in partnership with NH Fish & Game, who provides federal State Wildlife Grant funding to support some of our management activities. We received additional support for monitoring and education outreach this past year via a grant from the Dorr Foundation and from individual donors. Thanks to all our partners, including state and federal natural resource agencies, corporate partners, private landowners, rock climbers, and volunteers!



Healthy-looking 1½ year-old falcon "black/green 90/BU" at Plum Island in September (above). Photo by George Woodland. Just-hatched downy Peregrine Falcon chicks found at Russell Crag in late May (below). Photo by Torie Kidd.



NH Peregrine Falcon Productivity, 1980-2021



Conservation Notes

Nighthawk Breeding Summary 2021

by Rebecca Suomala

Common Nighthawks held their own during 2021, with eight confirmed nest sites and an additional seven sites with probable or possible nesting. The total of 15 active sites in the state is very similar to last year's 14 sites. Nests are notoriously difficult to find in natural areas, and rooftop access is often denied, so we frequently confirm breeding by the adults' behavior. When we can find a nest we try to follow it to obtain information on nest success. This year we found three nests with eggs that we could follow until the chicks fledged, in Concord, Pembroke, and Keene. The Pembroke nest failed soon after hatch for reasons unknown, but the other two fledged one chick. The Concord site hatched around July 4, which is somewhat late, and the fledged chick was still at the site on August 24, when nighthawk migration was in full swing.

Nighthawk surveys by NH Audubon in the 1980s and 1990s found about 100 individual nighthawks in 19 urban areas of New Hampshire. Downtown Keene is the only urban area where nighthawks continue with just one pair. Brett Thelen of the Harris Center coordinates nighthawk monitoring in Keene. For the second year in a row there was a chick on a rooftop at Keene State College. It was last seen at fledging time and the adults were still present, so we hope the chick was nearby as it finished growing. Nighthawks disappeared from downtown Concord a few years ago but they are still nesting in the pine barrens section of Concord and Pembroke. This includes the Steeplegate Mall where two pairs have been nesting on the extensive stone roof.

The Ossipee pine barrens remains the most active natural nesting habitat with five active sites and as many as four males at one site. The Nature Conservancy conducts management to maintain pine barrens habitat and this can improve nighthawk habitat.

Project Nighthawk is funded by private donations. We are grateful for this support and for the volunteers who help with all aspects of the project.



A Common Nighthawk nest at a Pembroke nest site with two eggs on June 21 (top), and the two chicks on July 5 (middle). The female laid the eggs in exactly the same place, next to the same rock, as in 2020. A Common Nighthawk chick almost 18 days old on July 20 (bottom), the age when they take their first "flight" (more of a glide). This individual was still on the Concord nest site on the late date of August 24, flying well. Photos by Rebecca Suomala.

Northern Harrier 2021 Breeding Surveys

by Katrina Fenton, Levi Burford, and
Chris Martin

Ground-nesting Northern Harriers are State-endangered in New Hampshire, and 2021 marked the second straight year that NH Audubon conducted full breeding season monitoring of their distribution and reproductive success under a contract with NH Fish and Game. Prior to the start of this initiative in Summer 2019, no formal surveys had occurred in the state since 1997, and our primary research goal is to determine current breeding status and provide preliminary management recommendations to NH Fish and Game.

Fieldwork in 2021 started on May 1 and continued until August 16, initially with one part-time technician in Coos County and several volunteer observers. Later in the breeding season, we added another part-time technician in the North Country and continued to have volunteer support. A total of 140 surveys took place at 56 different sites in Coos County, with about a dozen more visits to potential sites farther south. We first revisited sites occupied or successful in 2020, then covered 2020's inactive sites, then checked additional sites with promising habitat.

Results in 2021 were fairly discouraging, especially in comparison to 2020 when we confirmed 10 harrier breeding territories statewide, including six successful pairs with a total of nine young. In 2021, we confirmed only four territorial pairs with three young fledged from two successful nests in Colebrook and Stewartstown. Nest attempts observed at two more sites in Colebrook and Columbia failed, and we were unable to prove breeding at two additional Coos County locations. Several sites that were productive in 2019 or 2020 appeared to be inactive in 2021. We were surprised to find a high percentage of young females on territories in 2021; this



Typical pastoral Northern Harrier breeding habitat in Coos County, NH (above). Photo by Chris Martin. A stunning male Northern Harrier in Concord, NH in mid-April, probably enroute to a breeding site in northern New Hampshire or beyond (inset). Photo by Debbie LaValley.

year at least three of our breeding females in Coos County were molting out of juvenile plumage. One male also appeared to be in transitional plumage. We also noted less diversity in prey items in 2021 suggesting the possibility of drought-related food stress.

This work is made possible by funding from a federal State Wildlife Grant to NH Fish and Game. Additional support for this project has been provided by the Knopf Family Foundation and by contributions to NH Audubon by individual donors. Sincere thanks to all! We look forward to additional fieldwork in 2022!



Field Technicians Katrina Fenton and Levi Burford monitoring harriers. Photo by Phil Brown.

Conservation Notes

Monarch Tagging Field Notes

September 10, 2021

Blue skies, northwest winds, mild temperatures. A good day for our first attempt at placing Nanotags on monarch butterflies. We set up under the Great Bay Motus Tower located on the high point of Thomas Field at the Great Bay National Wildlife Refuge in Newington, NH. Surrounded by goldenrods, asters, and milkweeds that now hold onto drying seed pods...it is a perfect location to monitor and capture monarchs.

Part of the team heads out with nets to capture monarchs across the field. The rest of us set up butterfly cages within a screened tent to allow those with shaky hands this security. The field is expansive and takes a bit of hiking, but monarchs are present and soon start filling up our cages. Each monarch is slipped into a small envelope and weighed. Although we are using the very smallest nanotags available at 0.13g... this is still a significant weight for a monarch. We will choose only the largest of our captured monarchs for tagging.

We review the protocol for attaching the tags. Inventory our equipment and fully organize. The tags will be glued in place on the underside of the abdomen. A tiny amount of glue is placed on the nanotag and after 30 seconds it is attached to the monarch's abdomen. Success and a bit more confidence builds with each monarch.

Our tagged monarchs are placed back in the butterfly cages, complete with the natural nectar of goldenrod and sponges soaked in sugar water. They will spend the night in the cage, protected in a nearby workshop, and released in the morning. This allows us to evaluate how well they acclimate to the tags before they are released.

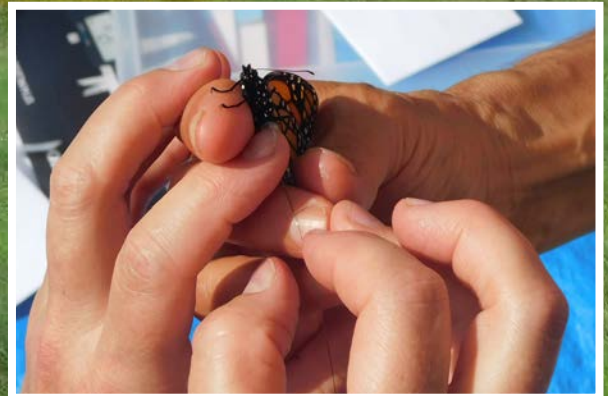
Nervous about leaving them overnight. Hoping that all will be well. As we return the next morning, another perfect monarch migration day, we are relieved to find all our tagged monarchs are hanging quietly from the top of the cages. Short trip up to the tower for release. Each monarch takes flight as it is released. A couple make short flights to land on goldenrod and nectar. Fueling up. We are glad to see that. The last monarch we release flies out across the field and disappears from sight.

Thankful for this team. Those with net talents, steady hands, calm demeanors.

Diane De Luca safely releases one of four monarchs at the Great Bay Wildlife Refuge Motus Tower (background). After a night of acclimation, the nanotagged monarchs are ready to continue their migration. Photo by Stephen Walker. Inset photos from top: handling and tagging a captured monarch (photo by Carol Foss/Nancy Tong); the Monarch tagging team, left to right: Laura Deming, Vanessa Johnson, Nancy Tong, Diane De Luca, Carol Foss, Nancy Pau, missing Stephen Walker (photo by Rachel Stevens); weighing and processing the monarchs to prepare for tagging (photo by Carol Foss/Nancy Tong).

Tracking Monarch Butterfly Migration

by Diane De Luca



Why Tag Monarchs?

The placement of tiny nanotags on migrating monarch butterflies is part of the larger Motus Project, a global migration tracking system that NH Audubon and many partners are expanding in the Northeast (see the Motus Project Update by Carol Foss). Nanotags are lightweight radio-transmitters with unique signals that can be detected by Motus receivers placed throughout the landscape. These nanotags will hopefully allow biologists to track fall movements of monarch butterflies. The last summer generation of monarchs travel south to overwinter in central Mexico. A journey of close to 3,000 miles. Tracking information can help to identify target areas for habitat improvement, such as planting fall-blooming nectar sources to support migrating monarchs.

The monarch is a formerly abundant species that has experienced dramatic and widespread declines since the early 1990s. Conservation efforts are underway across the U.S. to understand and take action to stop this decline. Biologists have used adhesive paper tags to study monarch migration since the 1940s. Tagging in this way has yielded some information about migration routes, but the majority of the tags are recovered at the wintering areas in Mexico. The Motus tracking system makes it possible to determine travel speeds and trajectories during the course of migration.

We have already gotten a remarkable and revealing return on one of our tagged monarch butterflies!! Monarch #398 started the migration journey at Great Bay, flew directly west across New Hampshire, over the Green Mountains of Vermont, across the middle of New York State, crossed the tip of Lake Erie, and was picked up at a Motus tower just off the lake in Ontario! Wow!! Not the flight that was expected and very informative.

Tagging of monarchs during fall migration will continue in 2022 and expand to both inland and coastal populations.

Thanks to the staff of the Parker River Wildlife Refuge for facilitating the assembly, and for access to the Motus tower at the Great Bay National Wildlife Refuge. Thanks also to Ryan Norris and Grace Pitman of the University of Guelph, and Nature Conservancy of Canada for sharing their knowledge and expertise in placing nanotags on monarch butterflies.

Photos of the tagging were taken on September 10 except for those of the release which were taken the following day.



Conservation Notes



Beavers have shaped the Gray Tree Frog Pond wetland within the Deering Wildlife Sanctuary since 1990. Recent changes in the landscape are chronicled in photographs on the facing page.

Phenology Reflections: Focus on Wetland Transitions

Story and photos by Diane De Luca

We are ten years into monitoring the phenology, or timing of the life cycle phases, of many species at the Deering Wildlife Sanctuary. At the species level, the observations are often subtle and take close focus on many years of data to discern change. At times, the changes are much more dramatic and evident. The Deering Wildlife Sanctuary is shaped by water and often defined by beaver activity which creates dramatic wetland transitions.

Next to humans, the beaver is the species of animal that most greatly alters the landscape. Trapped to extinction in southern New Hampshire by the late 1800s, beavers were reintroduced by NH Fish and Game in 1926 and are now plentiful. They have the ability to take down fairly large trees and flood large areas with their dams. Several beaver ponds, both active and inactive, are found on the property. These areas are characterized by large snags (trees killed by rising water) and still water. Beaver ponds create a wealth of diversity. The snags are sources of good denning sites and nest cavities, and also harbor insects. Beaver ponds are a valuable resource for wildlife and supply important habitat for aquatic species and those preying on them.

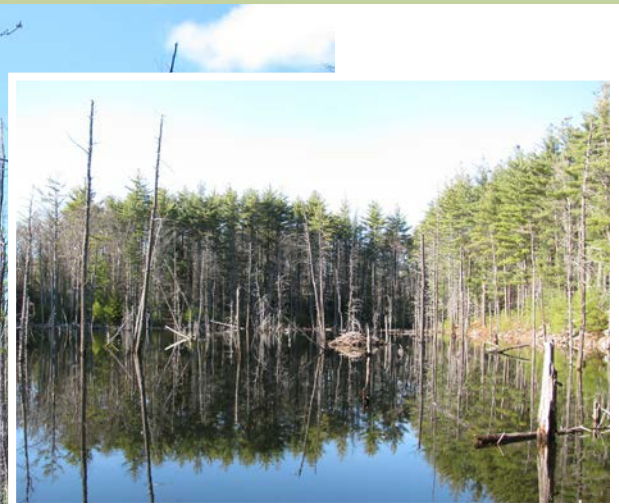
Gray Tree Frog Pond was created by beavers in 1990. Formerly red maple and white pine woods, only White Pine snags remain. This is preferred habitat for the colorful Wood Duck and the boxes here have supported both Wood Duck and Common Merganser nesting in the spring. Great Blue Herons have bred here in the past and you can see the remnants of their nests high atop the White Pine snags. On June nights there is

a deafening chorus of the reclusive and well-camouflaged Gray Tree Frog, *Hyla versicolor*. During the winter, this pond is often alive with chickadees and woodpeckers, which seek shelter in tree cavities and find food in the rotting trees. In the spring and summer months, the diversity of bird species makes for a great viewing spot.

Until the fall of 2018, the extensive dams created by beavers kept Gray Tree Frog Pond filled with water and allowed many species to thrive here. After heavy rains, the dam gave way and drained the pond on November 1, 2018. The change was immediate and dramatic. Debris left from the initial creation of this wetland was exposed and the large beaver lodge was left unprotected. Beavers are industrious and they continued repairing the dam and collecting winter forage. In spring of 2019, Gray Tree Frog Pond slowly filled with additional water. The drought of 2020, however, changed the course of the beaver repair. Since the summer of 2020, the beavers have been working elsewhere and this pond has been filling in with vegetation. Extensive rains during the summer of 2021 added water to this landscape. Grassy areas are expanding across the shallows with pockets of water still supporting wetland plants and wildlife – habitat transformation but still rich in life.

I encourage you to make a long term commitment to documenting the stories in your own backyards. These stories will contribute to a better understanding of the impacts of change. Contact me for more information (ddeluca@nhaudubon.org).

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



Photos, clockwise from top: Extensive beaver dams, Gray Tree Frog Pond before the dam breach, note the large beaver lodge; dramatic change after the beaver dams were breached; continued transformation after record rains this year; white water lilies decorate the surface of the pond; Great Blue Herons have nested here.



Conservation Notes

NH Audubon Launches Cliff Swallow Nesting Study

by Pamela Hunt

From over 80 colonies statewide in the early 1980s, to only 20-25 colonies by 2020, New Hampshire's Cliff Swallows have declined significantly in the last 40 years. The reasons remain unclear, but in an effort to start teasing apart the possible factors, NH Audubon initiated a pilot nest monitoring study this year. Starting in late May, I visited two colonies in Tamworth weekly and recorded the status of all nests at each. The idea here is that if threats like reduced food supply or inclement weather (see the Purple Martin article in this issue) are affecting our populations, we would see fewer successful nests or fewer young produced.

The two colonies I studied supported a total of 26 nests (15-20% of the state's population), and an estimated 70 percent successfully fledged at least one chick. This number is at least as good as others reported for the species, but two colonies in one year do not provide enough data to make sweeping conclusions! Our goal is to continue the study for multiple years and expand it to include more colonies. Of particular interest is Pittsburg in far northern New Hampshire, where as much as 25-40% of the state's population occurs. We also hope to collect more detailed data on the number of young per nest in future years, and

perhaps even develop projects involving tracking the adults.

With respect to the 2021 data, there was no sign of widespread nest failure associated with the rainy periods in July. However, just after the weather improved in early July, five pairs commenced new nesting attempts at one colony, which indicates that they were failed breeders from elsewhere (Cliff Swallows never produce two successful broods in one season). The last of these late nests still had a single chick in late August, which should have left the nest by the very beginning of September. This is exceptionally late for a Cliff Swallow in New Hampshire: the latest date for a nest with young during the 1980s Breeding Bird Atlas was July 16.

By mid-September, even lingering breeders like these Tamworth birds will have largely left the state for points south, and they won't be back until May of 2022. When they arrive back in the Granite State, NH Audubon will be ready to launch our second season of this study.

The Cliff Swallow study is funded by grants from the Blake-Nuttall Fund and the Butler Foundation.



Cliff Swallow nestlings at one of the Tamworth colonies, by Pam Hunt, June 25.

Need to Get Out?

You can now explore the natural settings of New Hampshire from anywhere in the world!
We are pleased to announce four new virtual tours that can be found on our website:

WWW.NHAUDUBON.ORG/EDUCATION/VIRTUAL-TOURS



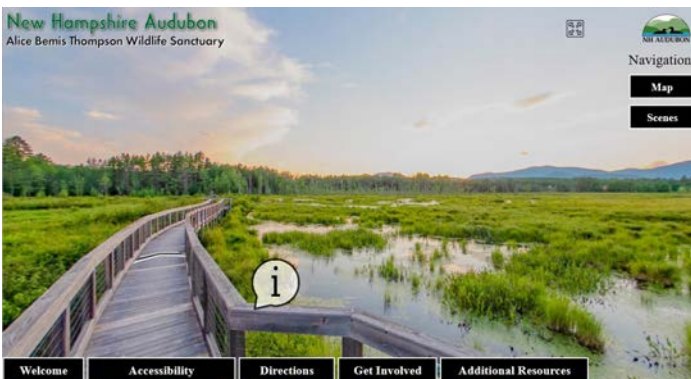
Massabesic Center, Auburn

Move along the trails and discover nature facts and points of interest about the sanctuary and history of the property. A great way to plan your next visit ahead of time!



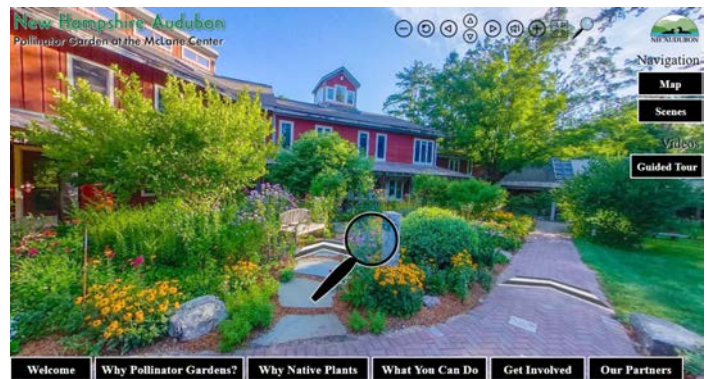
Ponemah Bog, Amherst

Learn about indigenous and historic use of the bog as a wetland “garden,” featuring the amazing variety of plants inhabiting the site including a number of carnivorous species.



Thompson Wildlife Sanctuary, Sandwich

Experience highlights along the wetland boardwalk and forested trail, including wildlife and plants that call this lovely place home. This virtual tour also features the many ways volunteers have made a difference on the property.



McLane Center, Concord

Explore the Pollinator Garden at McLane Headquarters by following the highlighted path around the building and clicking on the magnifying glasses for details on specific plants and their benefit to wildlife. Good for planning your own garden!

Exploring Connections

We are nearly finished with our year-long virtual speaker series! Presentations encourage participants to explore their personal connections to wildlife, land use ethics, sustainability, history, and our human interaction with the environment. If you missed any of the free webinars, you can find links to watch them whenever the mood strikes:

WWW.NHAUDUBON.ORG/EDUCATION/EXPLORING-CONNECTIONS-SERIES

Annual Meeting at Massbesic Center

by Jen Thomas



For the first time in eighteen months, after meeting via Zoom in 2020, the NH Audubon conservation family – including members, trustees, staff and friends – gathered in person for the 107th Annual Gathering and Meeting at the Massabesic Center in Auburn. The day kicked off with a volunteer appreciation breakfast, featuring the return of the Golden Binocular Awards. Kathy Barnes, Susan Burkhardt, Andrei Campeanu, Eddie Damon, Bill Dumont, Dan Hubbard, Walter Keane, Nanci Mitchell, Maureen Sinclair, Mary Stewart, Jean Sweeney and Beverly Youree (posthumously) were presented with a Golden Binocular pin in recognition of their volunteer commitment, many of whom found innovative ways to continue volunteering remotely and safely during the COVID-19 pandemic.

Following breakfast, annual meeting attendees chose from four activities – a nature walk around the trails at Massabesic led by President Doug and Massabesic Center Director Kimmie Whiteman, a tour of pollinator gardens led by Master Gardener volunteers Maureen Sinclair and Stacey

Scaccia, a field trip to Ponemah Bog with Director of Lands Management Phil Brown, and an update on migration research, presented by Motus Project Director Carol Foss.

The business portion of the annual meeting was brought to order after lunch by Board Chair Melissa Smart and featured voting Mavis Brittelli and Tom Lee to second three-year terms on the NH Audubon Board and approving Betsy Janeway, Nisa Marks and Doug Morin as new Trustees. Outgoing trustees Michael Amaral, Dave Howe and Chris Picotte were acknowledged for their dedication and service.

More than 75 people were in attendance to honor this year's annual award recipients. Paul Nickerson received the Tudor Richards Award for his conservation work in the Granite State, Eric Masterson was awarded the Goodhue-Elkins Award recognizing his contributions to the study of NH's birds, and Ponemah Bog Wildlife Sanctuary Steward George Rollend received the John Thalheimer Volunteer Award for his service, including most recently helping to develop the Ponemah Bog virtual tour.

The day culminated with a keynote address from Sy Montgomery who shared wisdom from her book *Birdology: What Makes A Bird A Bird*. She brought attendees along for a journey to Queensland, Australia, where she came face-to-face with a Cassowary, sometimes considered the most dangerous bird in the world. "I was sitting on this park bench quietly and then soundlessly this huge bird comes stepping out of the forest, so close to me I could see the eyelashes on its orange eye and the red wattles wiggling on its blue neck and that magnificent casque of bone. It looked past me like I wasn't there and it made me feel as if I really had somehow gone back into time, before people, and got to look into the face of a dinosaur."

Sy almost named *Birdology* "Birds are made of air," which she illustrated by describing her experience helping a rehabber feed orphaned baby hummingbirds on strict 20-minute intervals. "They have nine air sacs in their bodies – little more than bubbles fringed with iridescent feathers. If you feed them too much, they will pop. Being able to save from certain death two orphaned baby hummingbirds showed me that each one of us has more power than we know and that we can use that power to affirm life."

We hope you will join us for next year's annual meeting – save the date for Saturday, September 17, 2022 at our McLane Center in Concord.

Watch Sy's keynote and the Conservation Awards on our YouTube channel: <https://www.youtube.com/user/NewHampshireAudubon/videos>.

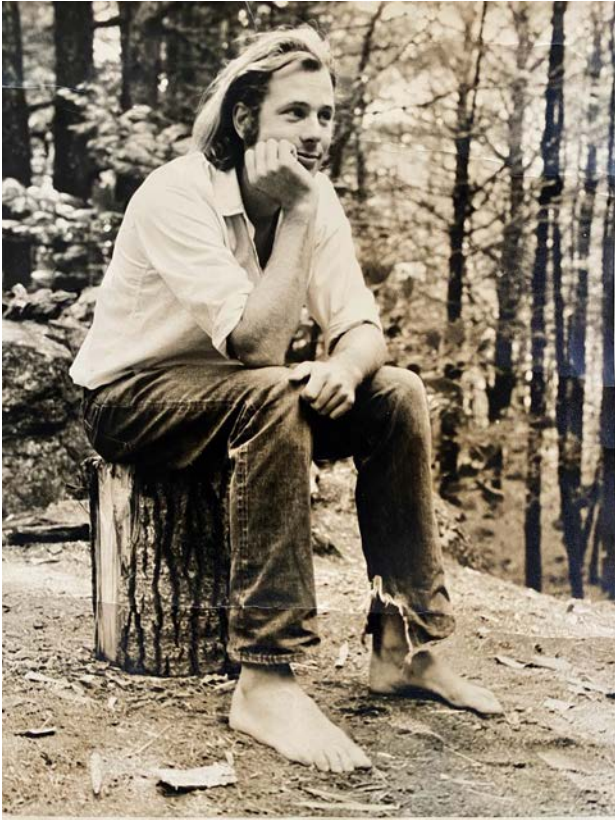
NewHampshireAudubon/videos.



Doug Bechtel leads a birding field trip before the Annual Meeting (top, by Dyanna Smith), Paul Nickerson (left) and his Tudor Richards Award with Doug Bechtel looking on, George Rollend with the John Thalheimer Award (middle), and Eric Masterson with the Goodhue-Elkins Award (right). Awards photos by Rebecca Suomala.

THE LEGACY OF FORBES LELAND

by Hope Jordan and Francie Von Mertens



In the summer of 1975, Forbes Leland took a memorable swim with the loons at Willard Pond in Antrim. Forty-five years later, he made a significant bequest that benefits both New Hampshire Audubon and the dePierrefeu-Willard Pond Wildlife Sanctuary established by his grandmother. In 2009, when NH Audubon recognized him with the President's Award to honor his lifelong dedication—and work to expand the Sanctuary—he recalled the loon encounter.

"I couldn't resist the temptation to join the party so I dove in and swam towards them. I swam under water for as long as my lungs would endure, surfaced, and to the surprise of loons and a human, I was in their midst!" Instead of being startled away, the loons remained close to him in the water, watching him, as he had so often watched them from the shores of Willard Pond.

Upon her death in 1967, his grandmother Elsa Tudor dePierrefeu donated 650 acres that included the westerly shore of Willard Pond as an Audubon wildlife sanctuary. A peace activist, she "preserved this land for peace among all beings," as visitors can read on the boulder inscribed near the Sanctuary parking area. That initial gift grew a decade later when Elsa's son and Forbes' father, S. Tudor Leland, donated land on the pond's south shore, complete with rustic cabin.

By the time he reached his 40s, Forbes had purchased 60 additional acres northwest of Willard Pond for preservation, and encouraged family members to join him in donating additional land inherited from Elsa de Pierrefeu. His devotion was such that he insisted that the cabin he lived in during the era of the

loon swim—a time often called his "hippie days"—be torn down as inappropriate for a wildlife sanctuary.

The Harris Center, down the road in Hancock, also has assisted further significant expansion of the Sanctuary, as have neighboring landowners. In 2005, NH Audubon secured a USDA Forest Legacy grant to purchase 365 additional acres on the south slope of Bald Mountain, overlooking Willard Pond.

More recently, Forbes' President's Award came after permanent protection of the entire Willard Pond shoreline was achieved, in large part through Forbes' vision and significant help with fundraising. As part of this compelling story, Forbes reported a dream in which his father directed him to "Complete the Sanctuary!" This he did, and all the more impressively given his move long ago to Maryland. He checked in regularly with us from afar, and by visits over the years.

In his acceptance of the award, Forbes typically gave credit to others and invited everyone to join him in supporting NH Audubon's mission to protect the state's natural environment. He concluded: "For me instead of 'award' I prefer 'reward,' that is, to know there are many ardent advocates like all of you here today who can be counted on to do the right thing, not only for the dePierrefeu-Willard Pond Wildlife Sanctuary but New Hampshire's natural legacy."

When he passed away on November 4, 2020, he left a generous bequest to NH Audubon—more than half of it dedicated to the Sanctuary. There's a small boulder near the site of his former cabin that is inscribed to honor his singular dedication to Willard.

It's not easy to find—respecting Forbes' desire for minimal human impact and his general aversion to the spotlight. As a location hint, there's a flat, mossy rock nearby that offers a place to sit near the shore and watch the loons as Forbes did, surrounded by what has become NH Audubon's largest Sanctuary, at nearly 1,800 acres.

Family as well friends from his cabin days gathered at the site last September 17, on what would have been Forbes' 80th birthday. Loons were heard.

For more information on leaving a legacy at NH Audubon, contact Hope Jordan at 603-224-9909 ext. 307 or email: hjordan@nhaudubon.org.

By the time he reached his 40s, Forbes had purchased 60 additional acres northwest of Willard Pond for preservation... As part of this compelling story, Forbes reported a dream in which his father directed him to "Complete the Sanctuary!" This he did...

Policy Notes

2021 Summary of Environmental Policy Activities

by Carol Foss and Nisa Marks

NH Audubon's Environmental Policy Committee members provided testimony on seven bills and joined partner organizations (e.g., Society for the Protection of NH Forests, The Nature Conservancy, Appalachian Mountain Club) in testimony on another six; five of these bills became law, as detailed in Table 1. In addition, we signed in for 22 bills without submitting testimony. Full text and docket details for these bills are available through the New Hampshire General Court website.

At the Federal level, we provided comments opposing a proposed rule regarding listing of endangered and threatened species and designating critical habitat. We also continued working to support passage of the Recovering America's Wildlife Act. This legislation would make federal funding available for state 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 New Hampshire by supporting efforts to conserve declining species identified in the Wildlife Action Plan for which no funding is currently available.

We signed on to the following group letters:

- urging restoration of protections to the Northeast Canyons and Seamounts Marine National Monument, an area of rich and unique biodiversity off the coast of New England.
- urging the Environmental Protection Agency to issue a strong biological evaluation for the herbicide atrazine under the Endangered Species Act; atrazine is known to be toxic to birds, mammals, insects, fish, and other organisms, in addition to a threat to human health.
- regarding the Total Allowable Catch limit for Atlantic Menhaden, an important food source for marine wildlife.



The Legislative Office Building where most of the public hearings for the NH House of Representatives committees are held. Photo by Carol Foss.

- urging withdrawal of two proposed rules related to habitat designation under the Endangered Species Act which would have weakened protections for endangered species habitat.
- expressing support for actions to pause new onshore and offshore oil and gas leasing.
- urging the Environmental Protection Agency to ban the pesticide paraquat, an herbicide highly toxic to mammals, including humans.
- urging the President to issue an Executive Order banning new federal oil and gas leasing and permitting on federal public lands and waters.
- recommending scope and criteria for review of federal fossil fuel programs.

We gratefully acknowledge financial support of NH Audubon's policy work from the Alexander Host Foundation, Monique Chretien, Paul Nickerson, Larry Sunderland, and Margaret Watkins.

Table 1. NH Audubon provided testimony on these bills. "Inexpedient to Legislate" means that the bill was "killed" and went no further in the legislative process; "Interim Study" ended consideration of the bill in the 2021 session. "Retained" means that the bill will be reconsidered in the 2022 session. All tabled bills died at the end of the session.

Bill Number	Intent	NH Audubon Position	Outcome
HB 82	relative to amending a conservation easement between the state and a landowner	Opposed	Retained
HB 118	relative to the fish and game commission	Supported	Retained
HB 172	establishing greenhouse gas emission reduction goals for the state and establishing a climate action plan	Supported*	Retained
HB 199	including soil health and soil conservation in the state soil conservation plan	Supported	Passed with amendment
HB 618	relative to the sale and distribution of polystyrene service products	Supported	Died, session ended

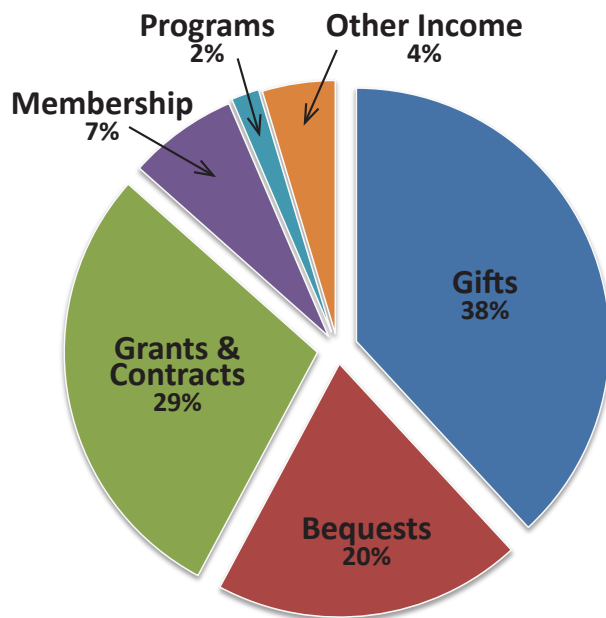
*Joint testimony with partner organizations.

Table 1. con't.

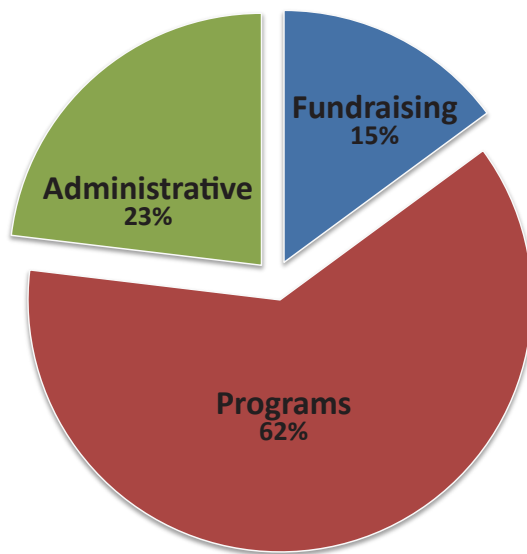
Bill Number	Intent	NH Audubon Position	Outcome
HB 621	allowing registers of deeds to retain a portion of the land and community heritage investment program surcharge	Opposed*	Retained
SB 86	adopting omnibus legislation relative to planning and zoning	Commented	Passed with amendment
SB 100	adopting omnibus legislation on commissions and committees	Commented	Passed with amendment
SB 114	relative to the enjoyment of publicly-accessible and publicly-funded recreation areas	Commented*	Inexpedient to legislate
SB 115	establishing greenhouse gas emission reduction goals for the state and establishing a climate action plan	Supported*	Inexpedient to legislate
SB 129	relative to minimizing environmental impacts on the habitats of endangered or threatened species	Commented*	Passed
SB 146	adopting omnibus legislation relative to the environment	Opposed	Passed with amendment
SB 151	relative to renewable energy procurement	Supported*	Re-referred to committee

Table 2. NH Audubon registered a position on these bills but did not provide testimony.

Bill Number	Intent	NH Audubon Position	Outcome
HB 106	establishing procedures for municipal host customer-generators of electrical energy	Supported	Retained
HB119	relative to legislative approval of the NH general court for increases in the systems benefit charge	Supported	Died, session ended
HB 158	relative to the definition of prime wetland	Supported	Died, session ended
HB168	requiring the adoption of innovative vehicle emissions standards pursuant to section 177 of the federal Clean Air Act	Supported	Died, session ended
HB 184	relative to the operation of personal water craft around the marshlands or flats of the Rye estuary and the New Castle back channel	Supported	Passed
HB 213	relative to the elimination of useful thermal energy from renewable energy classes	Opposed	Retained
HB 225	relative to the calculation of net energy metering payments or credits	Opposed	Inexpedient to legislate
HB 271	relative to standards for per and polyfluoroalkyl substances (PFAS) in drinking water and ambient groundwater	Supported	Passed with amendment
HB 294	relative to the purchase of output of limited electrical energy producers	Opposed	Inexpedient to legislate
HB 309	relative to the computation of renewable energy credits	Supported	Passed
HB 315	relative to the aggregation of electric customers	Opposed	Passed with amendment
HB 351	relative to the system benefits charge	Opposed	Re-referred to committee
HB 373	relative to the system benefits charge	Opposed	Passed with amendment
HB 396	relative to credits for certain energy production not issued renewable energy certificates	Support	Died, session ended
HB 397	relative to permitting fees under the shoreland protection act	Opposed	Passed with amendment
HB 399	relative to the energy consumption reduction goal	Opposed	Inexpedient to legislate
HB 407	relative to the purchase of output of limited electrical energy producers in intrastate commerce & including qualifying storage system	Supported	Died, session ended
HB 413	establishing a solid waste working group on solid waste management planning and relative to compost	Supported	Passed with amendment
HB 549	relative to the energy efficiency resource standard and the system benefits charge	Opposed	Retained
HB 614	exempting the state and political subdivisions from a portion of electricity rates for the costs of the renewable portfolio standard	Opposed	Retained
SB 71	establishing a commission to develop science-based emissions reduction goals for the state of NH	Supported	Laid on table
SB73	establishing a green building standards initiative as part of the low or moderate income housing loan program and making an appropriation therefor; and establishing a commission to study green housing and utility source options	Supported	Inexpedient to legislate
SB 78	relative to continually appropriating the renewable energy fund to the public utilities commission	Supported	Passed with amendment
SB 109	relative to municipal host customer generators serving political subdivisions	Supported	Laid on table



INCOME



EXPENSE

Revenue & Support		FY21
Gifts	\$	584,626
Bequests	\$	302,040
Contracts & Grants	\$	440,636
Membership	\$	107,352
Programs	\$	27,297
Other income	\$	71,389
Total revenue and support		\$ 1,533,340
Program and Functional Expenses		
Program Services	\$	827,588
Fundraising	\$	199,031
Administrative	\$	308,431
Total expense		\$ 1,335,050
Total Change in net assets		\$ 198,290

Notes

Our 2021 Fiscal Year (April 2020-March 2021) was unusual, due mostly to the impacts of the COVID-19 Pandemic. The good news is that New Hampshire Audubon survived, and even thrived, despite the setbacks of Center closures, no Nature Store sales, vast reductions of in-person programs and rentals, and staff moving to home offices. As with all businesses and nonprofits, we innovated in ways that helped us continue delivering on our mission, and we developed new ways to connect people to nature. We received multiple grants and donations that were inspired by our new virtual programming, online content, and other digital tools. Overall, we ended the year in a strong financial position.

Below are some highlights of our finances from the Fiscal Year*:

- Program revenues dropped from the previous year by 20% and accounted for only 1% of our total revenues, but we maintained mission delivery across all our program areas (science, policy, education, sanctuaries).
- Compared to the previous year, revenues were down 8%, while expenses were down by 29%.
- Bequest revenue is only used for operations or other uses upon a vote by the Board of Trustees.
- Disaster relief grant and loan funding from the federal government (approximately \$380,000) supported us while we were shut down (these data not included in charts because they have not been “forgiven” yet).
- Best of all, our revenues from bequests, donors, membership, grants, and other philanthropic giving were extraordinary! These sources of income helped us to cover our program expenses, which is of course, the indicator that we were focused on connecting people to nature. Thank you for helping support NH Audubon through a tough time.

**All values based on Fiscal Year 2021 Profit & Loss data; figures are unaudited; final data to be recorded in IRS Form 990 due to the IRS February, 2022.*

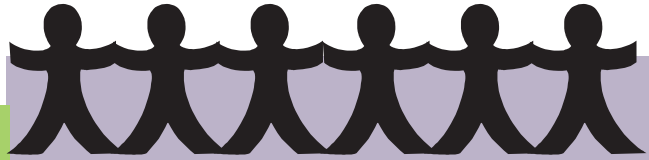
2020 The Year in Numbers 2021

Members

229 rejoining
285 new

13 years: average time
members are members

over 15,000 people reached
through digital programming



25 Colonies of Cliff Swallows

supporting 170 pairs

2 Coastal Colonies of Purple Martins

150 fledged (record high!)

48 Eastern Whip-poor-wills

counted along 17 routes



62 Socially Distant Meetings with Members

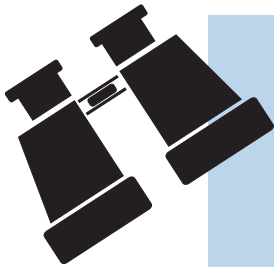
81 Attendees for our 2020
Virtual Annual Meeting

Volunteers

1,183 individuals = 11,613 hours

Over \$333,000 of in-kind
effort & expertise

18 Bird Walks with Doug



Sanctuary Visitors

25,264 Silk Farm/McLane Center

60,979 Massabesic Center

12,295 Poneham Bog

76 Bald Eagle Pairs

76 young fledged

24 Peregrine Pairs

36 young fledged



Northern Harriers

199 breeding habitat surveys conducted

10 breeding territories confirmed

6 pairs fledged 9 young

Social Media

11 videos & livestreams

10,211 total views



* Note: these numbers represent our last fiscal year (2020-2021).

NH Audubon is grateful for the generosity of the following individuals and organizations who contributed \$500 or more during Fiscal Year 2021 in support of our programs:

PRESIDENT'S CIRCLE (\$25,000+)

The Butler Foundation
Mrs. June E. Ellison
Elizabeth C. Janeway—*in memory of*
Harold Janeway
John F. and Dorothy H. McCabe
Environmental Fund of the NH
Charitable Foundation
Linda Snyder

LEADER (\$10,000+)

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