

Conservation Notes



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Resident female Peregrine Falcon in Nashua, NH, 2/6/12. Photo by Deanne Fortnam. See page 5 for details on the Peregrine Falcon breeding season.

From the Conservation Department Director

I am delighted to share this report on the 2012 activities of New Hampshire Audubon's Conservation Department. We had a busy and productive year both in the field and in the office, continuing long-term monitoring efforts, participating in regional conservation partnerships, initiating new field projects, and addressing land use policy issues.

Highlights of the year included the establishment of a new phenology trail at NH Audubon's Ponemah Bog Wildlife Sanctuary, the conversion of historic bird data from 35 towns into eBird, compilation of butterfly data for 110 species, the conclusion of a five-year project studying whip-poor-will habitat use, the first ever coordinated nighthawk watch in Ossipee, and record-setting Bald Eagle numbers recorded by volunteers. The following pages provide details on these and the many other Department projects. With your support and the help of our dedicated volunteers, the Conservation Department is hard at work furthering New Hampshire Audubon's mission to protect and enhance New Hampshire's environment for wildlife and for people.

Thank you for being part of New Hampshire's conservation community.

Carol R. Foss

Thank You

Donations to the Conservation Department and its specific projects are critical to the support of our work. New Hampshire Audubon's Annual Appeal also provides support to Department programs. Thank you to everyone who contributes to these efforts.

Conservation Department programs are also supported by funds from NH Audubon's Dr. Margery J. Milne and Dr. Lorus J. Milne Biological Science Research Fund. Conservation programs also receive funding from contracts with partner agencies, organizations, and corporations.

New Hampshire Audubon gratefully acknowledges grants for Conservation projects from the following:

The Couch Trusts for the Phenology Project at NH Audubon's Silk Farm Sanctuary
The Davis Conservation Foundation for work on Rusty Blackbirds
The Fuller Foundation for eBird Data Conversion
NH Charitable Fund's Tarleton Fund
Blake-Nuttall Fund for work on Rusty Blackbirds and eBird Data Conversion
TransCanada for the Connecticut River Bald Eagle Recovery Project
Umbagog National Wildlife Refuge Conservation Fund for Rusty Blackbird research
William P. Wharton Trust for work on Rusty Blackbirds

Funding for wildlife projects received from NH Fish and Game contracts comes primarily from State Wildlife Grants, a federal program that was created by Congress to assist states with their voluntary efforts to protect the more than 12,000 at-risk wildlife species around the United States from becoming endangered.

Butterfly Data Compilation

by Vanessa Jones

Conservation staff have been compiling butterfly data for New Hampshire with funding from NH Fish & Game. Our goal is to create a comprehensive summary of available butterfly data that can be used to inform future surveys, research, or conservation action. Sources include members of the Massachusetts Butterfly Club, Camp Pemi-gewasset in Wentworth, The University of NH Entomology Collection and Harvard University's Museum of Comparative Zoology Entomology Collection, among others.

So far we have records for 110 species from three different centuries. Our earliest record is a Purplish Fritillary found on Mt. Washington in August of 1865. Anecdotally it seems that there are a few locations where collectors have shown a preference – such as Jefferson/Whitefield and the Concord pine barrens. Once the butterfly data is entered we will look at the spatial distribution of the records. This map of known statewide butterfly distribution will be evaluated to determine if any species warrant immediate conservation attention or if there are areas and habitats in the state in need of more data.

Many thanks to everyone who has shared their data and assisted with data collection! We hope to continue to pursue additional sources of data. If you have a collection of butterfly data in the form of records, specimens or photos, please contact me.



American Lady, a common New Hampshire butterfly.
Photo by Vanessa Jones.

Conservation Staff News

Carol Foss presented results from some of New Hampshire Audubon's Rusty Blackbird work at the third International Rusty Blackbird Workshop in Plymouth, MA, in October 2012. The Workshop was held in conjunction with the second Bird Conservation Conference in the Northeast and Carol delivered a plenary presentation in front of more than 200 conservationists on "Implications of spruce-fir management for Rusty Blackbird habitat use in the Acadian Forest," and also presented in the poster session.

Pamela Hunt gave a presentation on her whip-poor-will research and Rebecca Suomala presented a research poster on Project Night-hawk nest patch results at the North American Ornithological Conference in August 2012 at the University of British Columbia, the largest ornithological meeting ever held in Canada or the US. Pam Hunt also gave a presentation on the NH Dragonfly Survey at the Dragonfly Society of the Americas.

Chris Martin and NH Audubon trustee, Michael Amaral, are two of six co-authors of a technical paper about movement, dispersal, and survival of Peregrine Falcons banded in New England from 1990-2009 (lead author, Steve Faccio). The manuscript will appear in the Journal of Raptor Research within a year.

Dragonfly Conservation Assessment for the Northeast

by Pam Hunt

Data from the NH Dragonfly Survey are being used in the "Northeast Odonata Assessment," a project funded by a US Fish & Wildlife Service Regional Conservation Needs grant involving partners from all 13 Northeastern states. As we learn more about the distribution and status of understudied insect groups such as dragonflies and damselflies, we are increasingly able to make informed decisions about their conservation. Prior to this project each state had set their own species priorities (which often vary significantly). We hope this region-wide assessment can better target limited resources to those species of regional priority for which we can do the most good.

I serve on the steering committee for this project. Since the spring of 2012 we have collected distribution data for all species across the region (over 200), developed a simplified habitat classification scheme, and begun to assess the conservation status of all northeastern species. We will be presenting a draft assessment at a meeting in June 2013. When completed it will help inform states when they update their endangered and threatened species lists and incorporate dragonfly conservation into their Wildlife Action Plans.

Over the last 10 years, we have learned an incredible amount about dragonflies in New Hampshire and across the Northeast, and it is good to see this information being put to use in conservation so soon after collection.

Aerial Insectivores Revisited

by Pam Hunt

NH Audubon's work on nighthawks, whip-poor-wills, and swallows is tied to increasing concern over population declines in "aerial insectivores" – birds which eat insects on the wing. As previously noted in the "State of the Birds" report, over half of New Hampshire's species are declining, and these patterns are repeated all over the Northeast and into Canada. Factors behind the declines are largely unknown, but include things as varied as pesticides, disturbance, climate change, and habitat loss in South America. To best deal with this emerging conservation topic, groups are starting to form which hope to share information and resources, and ultimately culminate in coordinated research and conservation for the species most at risk.

As part of this effort, I attended a meeting on Chimney Swift conservation in Montreal. There were over 30 people in attendance, and discussion centered on monitoring issues and measuring the availability of suitable nesting sites (e.g., chimneys). One broad finding is that there currently does not appear to be a shortage of suitable nest sites, but the total number continues to decline as more chimneys are modified. Nest sites in natural situations (dead trees) appear to be quite rare. The group is now moving forward to create standard survey methods and prioritize research strategies. This is just one example of the sort of work that is needed to make aerial insectivore conservation more efficient across a large area, and as 2013 unfolds, the Conservation Department hopes to take a more active role in facilitating collaboration among several partners right here in New England.

Project Nighthawk

by Rebecca Suomala

It was another busy summer for Common Nighthawk activity. We had three confirmed nests, two in Concord and one in Keene, yielding at least three fledged chicks. The Keene nest was the first confirmed breeding there, and the first successful rooftop nest since Project Nighthawk began in 2007. Project volunteers were able to monitor one of the Concord nests and record behavior of the male, female and chick on a daily basis thanks to business owner, Seacoast Scaffold and Equipment Corporation, who allowed us access to the nest site. We held the first ever coordinated watch in the Ossipee area and documented eight males but no females in the West Branch pine barrens.

Special thanks to the donors and volunteers who make this project possible. For a full summary check the Project's web site or contact me.

Final Whip-poor-will Field Season Yields Surprises

by Pam Hunt

In 2012 we finished the fifth and final summer of detailed research on the Eastern Whip-poor-will in New Hampshire. Efforts again focused almost entirely on Mast Yard State Forest, where we documented 11 territorial males, a typical number for the site. The exciting news in 2012 was that we attached radio transmitters to six birds, enabling us to gather information on what they were doing when not singing. All these data will ultimately inform habitat management, but telemetry also allowed us to discover something never before documented in whip-poor-wills: wandering outside their territories.

The saga began May 25, when we caught Bird #1 in the Mast Yard powerline. He stayed here through June 1, at which point we lost his radio signal. A bird was still calling in his territory, so assuming the radio had malfunctioned we set up our nets to recapture him. Instead we caught a completely different bird (#2), and assumed that #1 had continued migrating. In late June, #2 started acting strangely, disappearing from his territory at odd times, or even staying away all night. We thought he was disappearing to the north, so PSU graduate student, Kyle Parent, was in place before dawn on July 7 to see what was going on. Not only did Kyle find #2 heading north, he also picked up the long-lost signal from #1. Bird #1 was near Allen State Forest, over a mile north of his capture location. Bird #2 ended up along Horse Hill Road, also a mile from his usual territory. Over the next two weeks, these birds kept us busy, with #2 moving back and forth from Horse Hill Road, and #1 returning to Mast Yard (after also visiting Horse Hill Road!). Bird #1 eventually set up a pattern of roosting in the southern part of Mast Yard (in another male's territory) and spending the night 0.75 miles north in a part of Mast Yard where we've never found whip-poor-wills. Because males help with chick rearing, it was clear that neither of these two birds had a mate. Their movements may have been an attempt to find a female, or perhaps "good" habitat for a future year, but we'll never really know.

So while this research has revealed valuable information on habitat use, it has generated entirely new questions. And that is what makes science so exciting and keeps us biologists coming back for more! Check the NH Audubon web site for the habitat results of this study. The whip-poor-will project was funded by

NH Fish & Game and private donations.

Eastern Whip-poor-will chick at Mast Yard State Forest, 6/15/12. Photo by Pam Hunt.



Swallow CORE

by Rebecca Suomala

The NH Swallow Colony Registry is a statewide citizen science initiative to monitor four species of declining swallows: Purple Martin, Bank, Barn and Cliff Swallow. Thirty volunteers have monitored nearly 50 active colonies throughout the state. More than half the sites monitored are Barn Swallow colonies. Swallows are part of a group of declining birds called “aerial insectivores” that also includes Chimney Swifts, Common Nighthawks and other birds that feed on insects while they are flying. If you would like to volunteer please contact me or check the project web site for more information. We are grateful for grant support from the Blake-Nuttall Fund.



Bank Swallow colony on the Saco River in North Conway. Photo by Sue Randall.

New Hampshire Bald Eagle 2012 Breeding Season

by Chris Martin

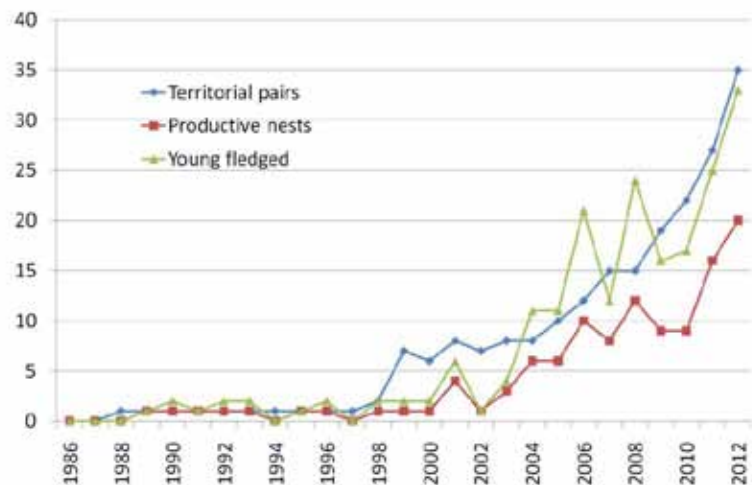
New Hampshire's state-threatened Bald Eagle population is in the midst of a very robust recovery. The 2012 breeding season in the Granite State was a record-setter, with increases in nearly all the eagle breeding statistics that we monitor in our collaborative work with the NH Fish & Game Department. New Hampshire hosted 35 territorial eagle pairs in 2012, an increase of nearly 30% over the 27 pairs we documented in 2011. A total of 33 young eagles fledged from nests in 2012, up from 25 fledglings the previous year. We tallied 20 successful eagle nests in 2012, up 25% from 2011. In 2012, we found first-time productive nests in Hebron, Littleton, and Wolfeboro. The Pemigewasset and Merrimack rivers from Bristol to Nashua now host at least four eagle territories, and at least two pairs appear to be settling near the Connecticut Lakes in Pittsburg.

So, how many eagles are in New Hampshire?

First, add up New Hampshire's 35 territorial pairs (70 individuals). Then add their 33 fledged young in 2012. That's a total of 103 eagles! Now double that figure to approximate the number of transient immatures in one-, two-, and three-year old age classes. Put all this together and you have an estimate of roughly 210 individual Bald Eagles present in the Granite State at the end of summer of 2012! New Hampshire's official totals for 2012 do not include nine additional border-nesting pairs (seven in Vermont, two in Maine). These pairs spend time in New Hampshire, but because their nests are physically located in neighboring states, we don't count them in our breeding season totals. But if you did add them and their 10 offspring from 2012, we would exceed 235 eagles in the state!

NH Audubon's Bald Eagle monitoring and management work is currently funded by a federal State Wildlife Grant from the NH Fish & Game Department and by a generous multi-year grant from TransCanada Corporation focused on eagle recovery efforts in the Connecticut River watershed. We also receive important support from NH Audubon donors and volunteers.

New Hampshire Bald Eagle Productivity, 1986-2012



Nestling Bald Eagle in New Castle, NH, 5/25/12. Photo by Rick Gray.

New Hampshire Peregrine Falcon 2012 Breeding Season

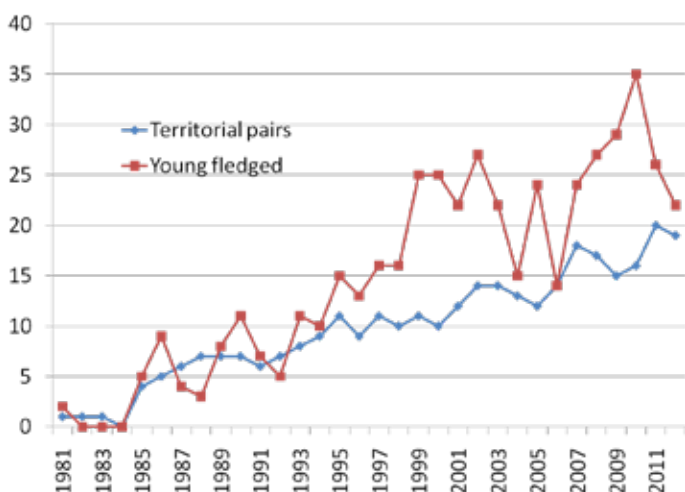
by Chris Martin

Spring 2012 marked the 32nd breeding season in the post-DDT recovery era for New Hampshire's state-listed threatened Peregrine Falcons. The total of 20 occupied peregrine breeding territories in 2012 matched a state record-high. NH Audubon staff and volunteer falcon observers confirmed incubation at 17 (85%) territories, also equaling a state record-high, but less than 50% of these pairs were successful in fledging young. After five consecutive breeding seasons (2007-2011) with 12 or 13 successful nests annually, New Hampshire had only eight productive peregrine nests in 2012.

A healthy average of 2.75 young fledged per successful nest, but the 1.29 young fledged per nesting pair was well below our 30-year average of 1.64 fledged per nesting pair in the state. Of the five New Hampshire breeding territories designated for triennial monitoring (in 2003, 2006, 2009, 2012, 2015) under the US Fish & Wildlife Service national post-delisting protocol, only two (40%) were productive in 2012, fledging a total of seven chicks. Overall, 346 fledgling peregrine falcons from New Hampshire have been color-banded since the early 1990s, and to date 82 (23.7%) have eventually been re-sighted (either alive or dead).

We continue to be grateful for all those who support our efforts on behalf of peregrines – public resource managers, private land owners, volunteer observers, and rock-climbing partners. Breeding site management activities are supported by the NH Fish & Game Department through the federal State Wildlife Grant program. We receive additional support to monitor sites from the US Fish and Wildlife Service, and much-appreciated private donations.

New Hampshire Peregrine Falcon Productivity, 1981-2012



The Mittersill section of Cannon Mountain.
Photo by Laura Deming.

Mittersill Bicknell's Thrush Surveys

by Laura Deming

In 2012 we conducted the fourth year of Bicknell's Thrush surveys on the Mittersill section of Cannon Mountain. The count of three individual Bicknell's Thrush is consistent with past years. The dense, wind-disturbed spruce-fir forest along the survey route is typical breeding habitat for this neotropical migrant, which spends most of each year in forests of the Dominican Republic. We also participated in field trips to review a proposed race and training venue that will require some trail widening and other activities within Bicknell's Thrush habitat. Biologists from the US Forest Service, NH Fish & Game Dept., and NH Audubon joined staff from Cannon Mountain, the NH Parks Dept., and the Franconia Ski Club to survey areas to be impacted and discuss options for minimizing or mitigating potential impacts to Bicknell's Thrush breeding habitat.

Finally, we submitted comments to the US Fish & Wildlife Service on the proposed listing of Bicknell's Thrush as a federally threatened or endangered species. NHA provided comments in support of this petition, based on nearly 20 years of experience surveying high elevation birds in the White Mountains, and Bicknell's Thrush specifically on Cannon Mountain, Kelsey Peak, and Dixville Peak in northern New Hampshire.



NH Audubon's dePierrefeu-Willard Pond Sanctuary in Antrim, NH.
Photo by Phil Brown.

NH Audubon and Lakes Regional Planning Commission Collaborate to Benefit Ashland

by Carol Foss

Local land use decisions play a critical role in determining the future of New Hampshire's natural resources. The documents governing local land use – master plans, zoning ordinances, and subdivision and site plan review regulations – help shape the changing faces of our cities and towns. Whether by enacting zoning regulations or encouraging voluntary practices, municipal planning boards are important agents in protecting natural resources for future generations.

NH Audubon's Conservation Department has been collaborating with the Lakes Regional Planning Commission since 2008 to produce a "Coordinated Review of Land Use Planning Documents with Respect to Wildlife Habitat, Natural Resources, and Smart Growth Principles" for Lakes Region communities. We review the Town's land use planning documents with respect to 18 topics from agricultural lands to wildlife habitat, and provide suggestions and sample language for possible revisions to strengthen natural resource protection. We compare the distribution of important natural resources with the local zoning map, and evaluate how well each zoning district protects these resources. We also use the NH Wildlife Connectivity Model to identify potential routes for wildlife movement between protected lands within the town and in the surrounding region. Meetings with the Planning Board provide opportunities to understand local priorities and explore a variety of strategies for addressing local needs. Funded by the Samuel P. Pardoe Foundation, this year's project addressed the town of Ashland, and followed previous assessments for Bristol, Franklin, Laconia, Gilmanton, and Sandwich.

Communities interested in further information about these assessments may contact me for more information (224-9909 x331; cfoss@nhaudubon.org).

Environmental Policy

by Carol Foss

Conservation Department staff prepared and coordinated NH Audubon's testimony for the 2013 legislative session. NH Audubon supported bills to extend the ban on lead fishing tackle to additional types that are killing Common Loons, include New Hampshire in the interstate wildlife violator compact, establish a commission to prepare for projected sea level rise and other coastal hazards, amend and clarify the Shoreland Water Quality Protection Act, limit the levels of nitrogen and phosphorus in fertilizers sold at New Hampshire retail outlets, and enhance opportunities and incentives for energy conservation and clean energy investments by New Hampshire business owners. We opposed bills that would allow the use of owls in falconry and eliminate the Exotic Aquatic Weeds and Species Committee. Interested readers may access copies of these bills and our testimony on the NH Audubon website.

At the federal level, department staff participated in informational meetings, scoping meetings, and field tours for the Federal Energy Regulatory Commission relicensing of the Wilder, Bellows Falls, and Vernon hydropower facilities on the Connecticut River and submitted scoping comments. We will be continuing to participate in the relicensing process during the coming year.

Conservation Department staff assisted NH Audubon's legal counsel in preparing the organization's case in opposition to a proposed wind energy project adjacent to NH Audubon's dePierrefeu-Willard Pond Sanctuary in Antrim, NH. The Audubon Board of Trustees voted to intervene in opposition to the project because of its potential impacts on the Sanctuary. The Site Evaluation Committee denied the application on February 7, in part because of the project's dramatic visual impacts on Willard Pond.

Department staff are actively involved in a regional coalition to prevent transportation of Canadian tar sands oil through an existing pipeline that crosses Maine, New Hampshire, and Vermont. This 62-year-old pipeline is buried less than four feet below the surface, and vulnerable to frost action and erosion at river crossings. Pipeline spills of tar sands oil create more serious public health risks and greater environmental damage than spills of conventional crude oil.

Citizen Science Bird Data

New Hampshire Bird Records, NH eBird, and the Backyard Winter Bird Survey

by Rebecca Suomala

Thanks to volunteers, we have uploaded the historic *New Hampshire Bird Records* data from 35 towns into eBird. This bird sighting data was computerized by NH Audubon from 1986 through 2009 until NHeBird was established. There are nearly 189,000 records and the data will be a great resource for birders and researchers once it is in NHeBird. We will be working on the data from seacoast towns, thanks to a grant from the Fuller Foundation. This project is also supported by a grant from the Blake-Nuttall Fund.

New Hampshire Bird Records, a quarterly publication all about birds and birding in New Hampshire, is also the umbrella for bird sighting data collection and quality review. This effort received increased support from sponsors of the Twitchers in the Rye, a team of New Hampshire birders that competes in the Superbowl of Birding in January. All monies raised go towards *New Hampshire Bird Records* and NHeBird. The recently established *New Hampshire Bird Records* Endowment Fund has grown thanks to contributions in the past year. We are grateful for donors to both of these efforts.

The annual Backyard Winter Bird Survey gathers data on long term population trends in resident and wintering birds. More than 1,300 volunteers report the birds in their backyard on the second weekend in February each year. With more than 25 years of data we can watch for trends in occurrence, such as the semi-annual influx of Common Redpolls, document increases in birds such as Red-bellied Woodpecker, or look for decreases that may be cause for concern. The Survey is supported entirely by private donations and we truly appreciate these contributions.

Bat Surveys

by Laura Deming

In spring 2012, NHA biologists joined staff from the NH Fish & Game Dept., US Fish & Wildlife Service (USFWS), and New England Environmental Services to recruit volunteers for a statewide survey of New Hampshire's eight bat species. Fourteen volunteers conducted acoustic surveys of foraging bats along 20- to 30-mile long driving routes. Bat vocalizations were recorded via a microphone attached to the car roof, and stored digitally in combination with GPS data. Analysis of these data show which bat species were present along each route.

The NH bat survey is part of an effort coordinated by the USFWS to gather baseline information on bat populations throughout the US. Such information has become especially critical since the discovery of White-nose syndrome (WNS) in upstate New York in 2006. Since the winter of 2006-2007, WNS has spread to 19 states and four Canadian provinces, killing over 5.7 million bats. The disease was discovered in five of seven New Hampshire bat hibernacula in the winter of 2008-2009. NH Audubon will be continuing these surveys. If you are interested in becoming a bat survey volunteer this year, please contact Laura Deming.

Phenology

by Laura Deming

Conservation Department biologists established a new phenology trail at NH Audubon's Ponemah Bog Wildlife Sanctuary in Amherst in 2012. With help from volunteers, we marked points, gathered data, and took hundreds of photos. As with the Deering Sanctuary Phenology Trail, the purpose of this phenology trail is to monitor life cycle events, or "phenophases," of individual plants (blooming, leafing out, fruiting, etc.) throughout the year. Data are entered into the National Phenology Network database, which houses phenology data from across the country. These data will help track plant and animal responses to climate change and are available to researchers, managers, and others working on phenology-related projects.

The Ponemah Bog and Deering Phenology trails provide people of all ages and backgrounds the opportunity to act as citizen scientists by learning about climate change impacts on familiar plants and animals. We are grateful to the Norwin S. and Elizabeth N. Bean Foundation, the Dorr Foundation, and TogetherGreen for their generous support of the Ponemah Bog Phenology Trail. Special thanks to the volunteers who contributed their time, enthusiasm, and talent. If you are interested in volunteering or learning more about this project, please contact Laura Deming or Vanessa Jones.



Collaborations ...

Tracking Golden Eagles

Chris Martin is collaborating with Dr. Todd Katzner of West Virginia University and a local North Country resident to operate a Golden Eagle camera site during the winter months. Gathering data about Golden Eagles in northern New Hampshire and adjacent Maine helps to identify their wintering and migratory areas, and will lead to a better understanding of the interactions between renewable wind energy and these rare birds of prey. In spring 2012, there were well over 100 baited trail-cam sites scattered across the Appalachian Mountains from Maine to Alabama. Dr. Katzner co-leads the Eastern Golden Eagle Working Group, avian scientists and resource managers who have come together to develop Golden Eagle conservation strategies and raise awareness about this eastern North American population.

For more information, visit: www.appalachianeagles.org.

Project OspreyTrack

Chris Martin is collaborating with Squam Lakes Natural Science Center Executive Director, Iain MacLeod, and internationally-known Osprey researcher, Dr. Rob Bierregaard, in Project OspreyTrack. This initiative, designed to learn more about the summer foraging habits and the migratory journeys of New Hampshire's Ospreys through the use of satellite or cellular transmitters, has yielded some interesting data on movements of both adult and juvenile Ospreys from the Lakes Region.

For more information about Project OspreyTrack, visit: www.nhnature.org/programs/project_ospreytrack/index.php



Rob Bierregaard (left) and Iain MacLeod hold an Osprey fitted with a satellite transmitter, 5/29/12. Photo by Chris Martin.



VOLUNTEERS

Volunteers contribute invaluable time and talent to the Conservation Department, working on all aspects of our many projects, from field surveys to office assistance. Their support is essential to what we do. We cannot list all of their names here but we are very grateful for their dedication and generous support.

The top New Hampshire Dragonfly Survey volunteers receiving the 2012 President's Award from Mike Bartlett and Pam Hunt in recognition of their remarkable contributions.