



North Carolina Wildlife Resources Commission

Wildlife Diversity Program Quarterly Update

First Quarter 2015



Tri-colored bat by Katherine Caldwell



In this Issue:

Page 2 - [N.C. Sea Turtle Project Update](#)

Page 3 - [Gopher Frog Augmentation Project](#)
[N.C. Waterbird Management Committee Meeting Update](#)

Page 4 - [Red-cockaded Woodpecker Surveys](#)

Pages 5, 6 - [NCPARC News](#)

Page 7 - [Mountain Chorus Frog Survey](#)

Page 8 - [White-nosed Syndrome Update](#)

Page 9 - [Golden Eagle Study Update](#)

Page 10 - [Box Turtle Connection Update](#)

N.C. Sea Turtle Project Update

Biologists with the Wildlife Diversity Program help coordinate the N.C. Sea Turtle Project, which conducts sea turtle nest monitoring and protection, and responds to dead, sick or injured sea turtles that are found along North Carolina’s coast.

To achieve wide coverage along the extensive coastal areas in the state, the N.C. Sea Turtle Project relies heavily on volunteers and co-operators who help conduct regular surveys. More than 1,000 volunteers and co-operators from municipal, state and federal agencies and private organizations have been trained to collect data and samples from sea turtle occurrences. They also are responsible for submitting

data to the Wildlife Commission. These data are used for technical guidance and status of recovery assessment of these federally protected reptiles. In addition, volunteers keep track of the hours they work and miles they drive. This information on volunteer effort is compiled yearly and converted into a dollar amount, which indicates the scope of volunteerism and also is used to “match” federal funding – funding that helps the Wildlife Commission coordinate the N.C. Sea Turtle Project. This is the equivalent of more than \$400,000 and demonstrates the incredible investment that volunteers make toward sea turtle conservation and management in North Carolina.



January - March 2015
N.C. Wildlife Resources Commission



Loggerhead hatchling makes its way to the ocean (above, photo by USFWS). Volunteers in Carteret County verify the presence of eggs in a sea turtle nest found in the early morning on the beach.

Gopher Frog Augmentation Project Gets Underway

During the first quarter of 2015, Wildlife Commission staff began a project to augment populations of gopher frogs by captive rearing and releasing juveniles. Gopher frogs are highly imperiled in North Carolina, with only about seven known populations remaining in the state. Many of these populations appear to harbor very few adults and some populations appear to have been impacted highly by multiple years of very little successful reproduction because of extended drought and other factors.

In an attempt to increase the number of adult gopher frogs remaining, staff is captive rearing and releasing juveniles at three different locations: Sandhills Game Land, Holly Shelter Game Land and Military Ocean Terminal at Sunny Point. Staff is rearing the frogs in 20 350-gallon tanks located on the Sandhills Game Land and at Fort Fisher Aquarium. Staff collected partial egg masses in March and is rearing approximately 80-100 tadpoles in each tank until they develop into juvenile frogs by mid-summer. Staff will mark the juveniles using fluorescent tags injected into one leg and then release them back to the same populations where the eggs were collected. This technique is known as head-starting. Previous headstarting projects in North Carolina and other southeastern states have shown this technique to be one way of increasing numbers of adult gopher frogs to create more sustainable populations.

Long-term monitoring will be conducted at each site to determine the conservation status of these populations and what effect these efforts are having on creating more sustainable populations of this imperiled species.



Wildlife Commission staff are using tanks with native vegetation (above photo) to rear juvenile gopher frogs.

An adult gopher frog (photo by Jeff Hall)

N.C. Waterbird Management Committee Meeting Held in Hammocks Beach

The annual meeting of the N.C. Waterbird Management Committee was held on March 5 at Hammocks Beach State Park. Work completed in previous months and proposed projects by Wildlife Commission staff and partners were summarized in 13 presentations.

Forty-five people attended the meeting, representing five federal and four state agencies, three universities, six non-governmental organizations and five independent volunteers. The presentations highlighted research and

management achievements for waterbirds, including great egrets, royal terns, piping plovers, wood storks, American oystercatchers, black rails, shorebird communities and colonial-nesting waterbirds.

Presentations have been put on the [N.C. Partners in Flight](#) website so that those who could not attend the meeting can get much of that information. Hammocks Beach State Park hosted the meeting at its visitors' center. The 2016 meeting will be held during the first week in March.



Red-Cockaded Woodpecker Surveys to Start in Bladen County

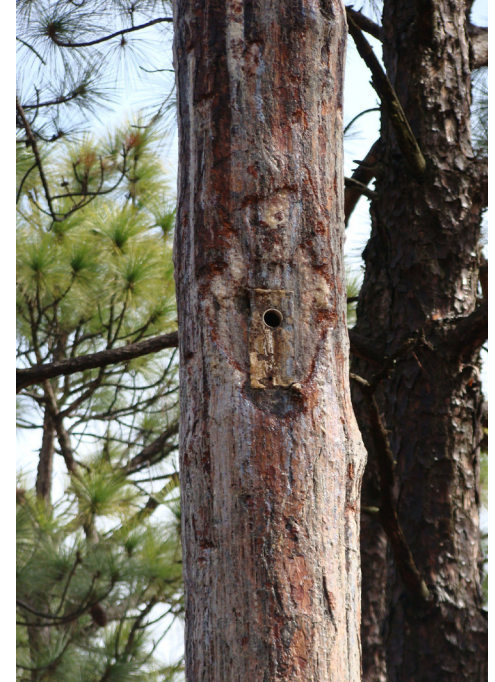
The Wildlife Commission, along with the N.C. Forest Service and N.C. State Parks, soon will update the status of all known red-cockaded woodpecker (RCW) cavity trees on public lands in Bladen County. This area, which one day may act as a vital corridor for Sandhills and Coastal Plain RCW populations, currently is designated an important support population for RCW recovery.

The Wildlife Commission will train staff from other agencies in the nuances of cavity surveys, providing these partners the skills required to complete future assessments.

These collective efforts from multiple agencies will result in more effective management and a unified recovery of this federally endangered species in a critical region.



Red-cockaded woodpecker





Red-cockaded woodpecker cavity tree
(Photo by John Carpenter)



Support the Wildlife Diversity Program and Help Keep North Carolina Wild!



Whether you hunt, fish, watch, or just appreciate wildlife, you can help conserve North Carolina's wildlife and their habitats and keep North Carolina wild for future generations to enjoy. To donate directly to the conservation of North Carolina's wildlife, send this form, along with a check or money order payable to the N.C. Wildlife Resources Commission, to: N.C. Wildlife Resources Commission, 1702 Mail Service Center, Raleigh, N.C. 27699-1702. Or donate by credit card.  

Your name _____

Address _____

City/State/Zip _____ E-mail address _____

Credit Card # _____

Amount _____ Signature _____
(if paying by credit card)



North Carolina Partners in Amphibian and Reptile Conservation (NCPARC) News

Workshops, training and meetings

Wildlife Diversity Program staff met with two landowners in Montgomery and Guilford counties to discuss management activities that would benefit reptiles and amphibians. Staff found an adult mole salamander, a state Species of Special Concern, at the Guilford County site.

Staff also presented Calling Amphibian Survey Program (CASP) workshops at Halyburton Park in Wilmington and Cape Fear Botani-

cal Garden in Fayetteville. Staff participated in Wildlife Commission law enforcement trainings in the Piedmont and Mountain regions, giving presentations on herp identification and natural history, as well as a summary of regulations affecting herps.

Working groups of N.C. Partners in Amphibian and Reptile Conservation that met during this quarter included the Steering Committee, RIMM (Research, Inventory, Monitoring and Management), and EO (Education and Outreach).

Additionally, Wildlife Commission staff attended the Southeast PARC meeting in Covington, La. Along the way, staff visited a gopher frog headstarting facility in Mississippi to prepare for North Carolina headstarting work.



Gopher frog rearing tank in Mississippi (Photo by Jeff Hall)



Gopher frog egg mass (Photo by Jeff Hall)



Gopher frog breeding pond (Photo by Jeff Hall)



North Carolina Partners in Amphibian and Reptile Conservation (NCPARC) News

Surveys and research

Staff continued survey work for the Neuse River waterdog. This is an ongoing effort, now in its fourth year. Staff found waterdogs at several locations in Edgecombe and Nash counties. Significant staff time was spent monitoring known breeding sites of gopher frogs, as well as surveying for other rare winter-breeding amphibians, such as ornate chorus frogs, southern chorus frogs and Mabee's salamanders. Wildlife Commission

staff met with Fort Fisher Aquarium staff to prepare for rearing of gopher frog tadpoles from two different breeding populations. This effort will mimic successful augmentation work completed in 2011.

Staff continued upland snake surveys by walking recently burned forestland and monitoring coverboard transects at several Coastal Plain sites including Croatan, Holly Shelter and Camp Lejeune. Staff detected several



priority species, but of particular note, a live Eastern diamondback rattlesnake found at Camp Lejeune. The Eastern diamondback rattlesnake is one of the rarest vertebrates in the state. Additionally, staff ground-truthed several CASP routes for volunteers to use for anuran monitoring.



Eastern Diamondback Rattlesnake found on Camp Lejeune (Photo by Jeff Hall)



Mabee's salamander found on Camp Lejeune (Photo by Jeff Hall)



Mole salamander found during Guilford County landowner visit (Photo by Jeff Hall)



Marbled salamander larvae found during Guilford County landowner visit (Photo by Jeff Hall)



Mountain Chorus Frog Surveys Get Underway in Western North Carolina

Wildlife Diversity staff collaborated with researchers at Western Carolina University to study post-breeding habitat use and movements of mountain chorus frogs, a state listed species of special concern and a N.C. Wildlife Action Plan priority species.

Most of the documented life history and habitat ecology of these frogs includes information about their breeding sites — temporary or permanent aquatic habitats that include wet meadows and ditches, bogs, beaver swamps, vernal pools and other wetlands. However, little

is known about mountain chorus frog movements out of the breeding habitats and their use of uplands and surrounding landscapes.

To examine these aspects of their life history, Commission staff, volunteers and academic researchers used radio telemetry to track individual frog movements post-breeding. They caught pairs of breeding chorus frogs on rainy nights in early March and temporarily housed them in secure containers so females could deposit eggs and breed successfully.

They selected adult females most

often for this study because the females were more likely to meet the minimum weight required to carry an external transmitter. However, they were able to affix transmitters to two of the largest adult males they found.

Currently they are tracking 16 frogs — two males and 14 females — several of which already have moved over 100 meters from the breeding site and into surrounding forests and fields. Understanding habitat use and movements of mountain chorus frogs will result in more effective conservation strategies for the species.



An adult male mountain chorus frog (Photo by Lori Williams)



Calling mountain chorus frog (Photo by Lori Williams)



Western Carolina University graduate student Sam McCoy (left) and Wildlife Diversity Program technician Charles Lawson (right) capture a breeding pair of mountain chorus frogs. (Photo by Lori Williams)



Adult female wearing belt transmitter (Photo by Sam McCoy)



A pair in amplexus (Photo by Sam McCoy)



Hibernating Bat Counts Continue to Drop in Western North Carolina Due to White-nose Syndrome

Declines in counts of hibernating bats continue to occur across western North Carolina in 2015 due to White-nose Syndrome (WNS), a deadly fungal infection plaguing hibernating bats. WNS affects seven species of bats in North America and has been confirmed in bats from 25 states and five Canadian provinces. In North Carolina, WNS was first documented in 2011 and has been confirmed in 10 counties, all of which are in western North Carolina.

Biologists surveyed hibernating bats in February in hibernacula, caves and mines in Swain, McDowell, Avery

and Haywood counties. They documented WNS in these hibernacula during previous years and numbers of hibernating bats continued to decrease in this year's surveys.

Declines were relatively small in most hibernacula because extreme declines had occurred already, but a large decline was seen in one cave that had not yet experienced a decline.

Biologists documented more than 1,000 bats in this Swain County cave in 2013, but counted only 58 bats in 2015. The cave had previously held little brown bats, northern long-eared bats and tri-colored bats, but this year

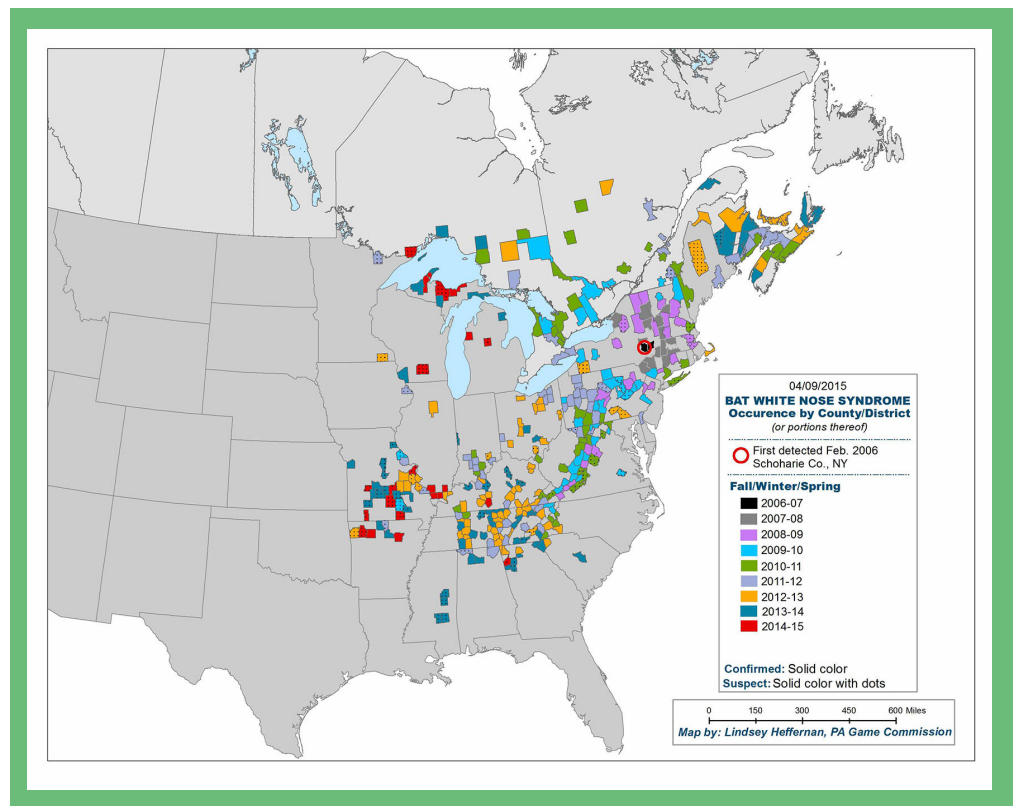
only tri-colored bats were seen.

Biologists also did not find any increases in numbers of bats in any hibernacula, but bats were present at all hibernacula, mainly in low numbers.

The Wildlife Commission is continuing long-term population monitoring of bats year-round and is involved in WNS-related research, including examining how WNS affects North Carolina bats and how the disease is spreading, understanding species differences in survival and determining what can be done to help bats in the state.



A hibernating tri-colored bat
(Photo by Katherine Caldwell)



Map of WNS-confirmed counties. (Map by Lindsey Heffernan)

Wintering Golden Eagle Study Continues in Western North Carolina

On Jan. 1, Monroe, an adult male golden eagle capture in Mitchell County last February and fitted with a transmitter, returned to North Carolina, marking the start of the Wintering Golden Eagle Study for the 2015 season. This year marks the third year that the N.C. Wildlife Resources Commission has participated in the Eastern Golden Eagle Working Group's Wintering Golden Eagle Study. Wildlife Management staff plus conservation technicians from western region wildlife depots collaborated with Wildlife Diversity Program staff to establish and run camera monitoring stations baited with road-killed deer. In addition, a private citizen and staff from the National Park Service participated this year. Along with seven resurveyed sites, staff established eight new sites. Since 2013 the Wildlife Commission and partners have run 24 camera stations, documenting eagles at 62 percent of those sites, representing 16 counties and six Commission game lands. These

collective efforts point to the potential role of western North Carolina as core wintering grounds for golden eagles, in addition to primary wintering areas in West Virginia and Pennsylvania.

While baited camera monitoring stations provide some insight into the eagle's winter distribution and abundance, GPS tracking provides further insight into winter home ranges, movement patterns, and habitat use, particularly important roost sites. To that end, three adult female golden eagles were captured and fitted with GPS transmitters in February. Of note, "Cherokee," a female captured on Feb. 11 in Mitchell County, broke the record for largest golden eagle captured in the eastern United States at 13.6 pounds. However, the next morning, the record was broken again with the capture of "Cheoah," who weighed 14.6 pounds and was a banded bird. Records from the Breeding Bird Laboratory indicate that she was originally banded on migration in Pennsylvania as a hatch year bird in October 2000.

Including Monroe, the team is tracking four golden eagles. Patterns are becoming apparent; in particular, the eagles roost in remote forested ridge tops, sometimes using the same ridge top. Mitchell County is emerging as an important area for overwintering golden eagles, as well as Yancey and Madison counties. The female captured in Swain County flew to Mitchell County two days after her release where her path crossed those of other eagles currently being tracked. In late March, the four eagles being tracked were approaching the breeding grounds in Canada, with three birds in Quebec and the fourth in Labrador.

The findings of this year's study have been shared during a presentation by Chris Kelly to the Franklin Bird Club, as well as through the Wildlife Commission's social media. Videos are available on the Commission's [YouTube channel](#), including a video of the Cheoah's release. Photos are posted on the agency's [Flickr page](#).



An adult golden eagle. Estimated age is based on plumage characteristics, eye color (brown to bronze), and foot pad condition (worn or baby soft). (Photo by Trish Miller)



Trapper Trish Miller holds a golden eagle while Commission Conservation Technician Joe Tomcho extends a wing for a photo record of feather molt. (Photo Chris Kelly)

Box Turtle Connection Study Update

The Box Turtle Connection (BTC) is a long-term study on box turtles in North Carolina that began in 2008. The study now has more than 40 established sites, spread across all regions of the state. North Carolina is the only state that has a large-scale box turtle study underway.

Training workshops are held every other year to train additional project leaders and occasionally bring new sites on board. The BTC held its fifth BTC training in March 2015 at Haw River State Park. The Wildlife Commission is an integral partner in the BTC, training the project leaders and managing the database in which the project's data are entered and archived.

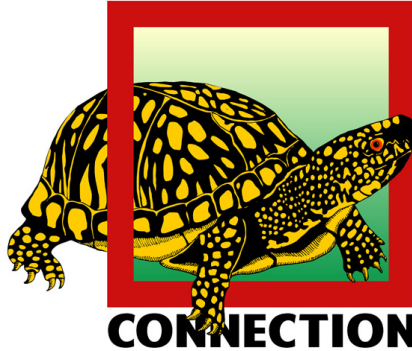
With the BTC, staff aims to learn more about box turtle populations and engage citizens in scientific data collection. The project leaders are volunteer citizen-scientists

who make a long-term commitment to be trained in collecting data. Each project leader manages data collection at his or her specific site, such as a nature center, state park

or private property. Project leaders permanently mark turtles, measure them and enter the data into an online database. Partnerships are vital to the success of the Box Turtle Connection study. Commission staff is able to accomplish much more in conjunction with partners than they would alone. Partners who coordinate the project year-round and play a critical role in the training workshops include UNC-Greensboro, N.C. Division of Parks and Recreation

and the N.C. Zoo, among others. Without continuous funding, coordination and support from these entities, this project would not exist. For more information about the Box Turtle Connection, visit the [website](#) or [Facebook page](#).

THE BOX TURTLE



CONNECTION

Want to help box turtles? Here's How!

- 1) Make your property box turtle friendly
- 2) When you find a box turtle in N.C. or S.C. (alive or dead), you can enter that record on the Carolina Herp Atlas (www.carolinaherpatlas.org)
- 3) When possible to do safely, help box turtles across the road. Move them in the direction they are walking but only about 5-10 ft off the road.
- 4) Do not take box turtles from the wild as pets! When box turtles are taken from the wild to be pets, they are not able to breed, & the delicate balance of the box turtle population is thrown off. As more and more turtles are taken from the wild, less offspring are born and the population declines.
- 5) Do not move box turtles from one location to another. You can spread a disease from one population to another. Moving them is very stressful because they try to find their home, which can result in the turtle dying.
- 6) If a box turtle nests in your yard, leave the nest alone. You can create a cage made of hardware cloth or chicken wire to make it more difficult for predators to dig up the nest. Leave space for hatchlings to emerge.
- 7) Support the protection of wild areas & habitats where box turtles might live.



A young box turtle basking in a beam of sunlight
(Photo by Gabrielle Graeter)



THE WILDLIFE DIVERSITY PROGRAM



The Wildlife Diversity Program was established in North Carolina in 1983 to prevent nongame species from becoming endangered by maintaining viable, self-sustaining populations of all native wildlife, with an emphasis on species in decline.

More than 1,000 nongame animals call North Carolina home. Many nongame species, including mammals, reptiles, birds, amphibians, snails, mussels, and fish, are common and can be seen or heard in your own backyard. Other nongame animals, such as bald eagles and peregrine falcons, were, at one time, considered endangered, but now soar high in the sky, thanks to the work conducted by wildlife diversity biologists.

The men and women who work for the Wildlife Diversity Program are dedicated to conserving and promoting nongame wildlife and their habitats through a variety of survey and monitoring programs, species management, and habitat conservation or restoration projects. These programs and projects target nongame animals and their habitats, but game species — such as deer, turkey, mountain trout, and black bass — also benefit because they share many of these same habitats.

You can learn more about the many projects and programs conducted by wildlife diversity personnel on behalf of nongame and endangered wildlife by visiting www.ncwildlife.org/conserving.



Stay Informed on wildlife activities in North Carolina

Subscribe to **NC Wildlife Update** - news including season dates, bag limits, legislative updates and more -- delivered to your inbox from the N.C. Wildlife Resources Commission. Sign up at <http://www.ncwildlife.org/News/WildlifeEmailUpdate.aspx>.

“Like” the Wildlife Resources Commission on **Facebook** and follow us on **Twitter** to see the latest news releases, view photos, get updates on fishing and boating, learn of new regulations or just find out about wildlife and the outdoors in North Carolina.