



NORTH CAROLINA WILDLIFE RESOURCES COMMISSION

WILDLIFE DIVERSITY PROGRAM QUARTERLY REPORT

April - June 2019



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Cover photos (clockwise from top): Spike (Luke Etchison); Loggerhead shrike nestlings (John Carpenter); Southern hognose snake (Jeff Hall); Appalachian cottontail (Andrea Shipley); and southeastern bat (Kristin Confortin)

Wilson's Plover, American Oystercatcher Breeding Season Surveys Conducted

Throughout May and June, Wildlife Diversity Program staff from the Waterbirds Investigations and Management Project conducted a breeding season survey of Wilson's plovers and American oystercatchers along the North Carolina coast.

First conducted in 2004, this triennial survey was launched to investigate anecdotal observations of declines in the populations of the two species. Since that time, Wildlife Diversity Program staff have worked with federal, state and private partners, as well as numerous volunteers, to collect data repre-

senting the distribution, abundance, and reproductive success of these species throughout the coast.

To locate the birds, biologists and technicians walk or boat along the edge of beaches and islands, watching and listening for the target species. Once found, staff observe their behavior and attempt to locate and document their nest, recording the number of eggs or chicks.

The final numbers will not be compiled until later this year, but early estimates show an increase in the number of nesting pairs for both species.



Wilson's plover. (Photo: [Russ on Wikimedia](#))



An adult American oystercatcher acts as sentinel atop a shell rake. (Photo: [Carmen M. Johnson](#))

Thirteen Adult Leatherback Sea Turtles Captured So Far this Season

Leatherback sea turtles infrequently nest in the summer on the sandy beaches of North Carolina. However, they regularly occur in the state's waters, mostly in the spring and early summer. Each year, there are numerous observations reported by anglers at oceanside piers and by boaters close to shore, especially around Carteret County. This past May, a collaborative project including biologists and researchers from the National Marine Fisheries Service, N.C. State University College of Veterinary Medicine, N.C. Aquariums, and N.C. Wildlife Resources Commission sought to capture free-swimming leatherbacks, to track their migratory behavior using satellite tags and video cameras.

Over the course of two weeks, the team captured 13 adult leatherback sea turtles using a modified hoop net in and around Cape Lookout bight. Two of the turtles bore flipper tags from nesting beaches in Grenada and Trinidad. All the captured leatherbacks departed North Carolina waters within two weeks of being tagged, with most moving north along the coast of Virginia and Maryland. Biologists anticipate the satellite tags will continue to transmit location data into 2020, showing whether these animals tend to remain in coastal waters throughout the year, or move out into waters of the open ocean where they assume the turtles spend most of their time.



Using a hoop net to capture a free-swimming leatherback sea turtle near Cape Lookout bight in May 2019. (Photo: NCWRC)



*Leatherback sea turtle
(Photo: Matt Godfrey)*

Loggerhead Shrike Nest Monitoring Continues

Wildlife Diversity Program staff monitored reproductive activity for 34 pairs of loggerhead shrikes in southeast North Carolina in April, May and June. Apparent nesting success (at least one young fledged) was 50 percent and is slightly lower than the range-wide average of 56 percent. Biologists witnessed re-nesting attempts by five pairs whose initial nests had failed, but only one of these was successful on the second try.

Shrikes in North Carolina preferentially bred in agriculturally dominated landscapes, mostly on privately owned properties, and should be considered a “farm-friendly” bird. They did, however, exhibit some plasticity by also building nests in residential front yards, pine forest edges, city parks and heavily urbanized areas, including parking lots. Pine trees were the most frequently used nesting structure, followed by cedar and pear trees, and even one nest was found atop an old satellite dish covered in wisteria vines.

Shrikes begin breeding earlier than most other songbirds and this appears to create a dependency on non-deciduous vegetation that can better conceal a nest early in the spring.

As the breeding season advanced, biologists noticed birds beginning to select a

wider diversity of nesting tree and shrub species. They are hopeful the data they are collecting will be useful to landowners who would like to manage their property for wildlife, including loggerhead shrikes. Staff will continue to monitor these sites and color band birds throughout the year to provide information about connections between breeding and wintering populations, genetics, juvenile dispersal, nesting success, and annual survivorship. This effort will help them identify factors that contribute to shrike population declines and their recovery.



Loggerhead shrike (Photo: John Carpenter)



Loggerhead shrike nest with nestlings, June 2019. (Photo: NCWRC)

Workshops Conducted for Natural Resource Professionals

Wildlife Diversity (WD) Program staff assisted with two workshops focused on reptiles and amphibians. The first occurred at Carolina Beach State Park and was targeted toward natural resource managers. Numerous reptile and amphibian species were observed during the training including both hognose species, eastern and

southern. Turtle traps were particularly effective with three traps yielding a total of 26 turtles representing four different species.

The second workshop, also primarily for natural resource staff, focused on snakes and was held at Dismal Swamp State Park. Several snakes were seen on a walk around the

property including a timber rattlesnake and three eastern kingsnakes.



Eastern hognose snake (Photo: Jeff Hall)



Eastern chicken turtle (Photo: Jeff Hall)



Southern hognose snake (Photo: Jeff Hall)

Staff Conduct Surveys on Private Lands to Determine Habitat Suitability for Several Reptile and Amphibian Species

Wildlife Diversity (WD) Program staff worked with numerous private landowners during this quarter. A Johnston County landowner was considering management actions for isolated wetlands on the property and to review which Species of Greatest Conservation Need (SGCN) amphibians might be present. Staff visited a private property in Sampson County to assess potential for gopher frog use and other SGCN amphibians. Future management efforts will be made at both properties to increase value of the sites for amphibians. Staff also visited a third property in Mecklenburg County to consider suitability for timber rattlesnakes. Although they saw no timbers on this visit, they observed other reptiles and amphibians, noting the potential for rattlesnakes to exist on the property is very high. Staff also visited several private lands focusing on surveys for the bog turtle. Bog turtles were found at many of these sites and of varying age classes — everything from hatching to old adult.



*Pair of southern toads in amplexus in a wetland in Sampson County
(Photo: Jeff Hall)*



*Adult bog turtle (top) and bog turtle hatchling
(Photos: Jeff Hall)*

Staff Continue to Monitor Restored Wetlands on Sandhills Game Land

In the second quarter, Wildlife Commission biologists continued to monitor multiple wetlands that have undergone restoration on the Sandhills Game Land. One example is “Dismal Pond,” a site where restoration started in 2013. This approximately 23-acre isolated wetland was ditched and drained in the early 20th century, but the ditch was plugged in 1997 to attempt to restore the water table. As a result, the mature trees that had grown up in the 1900s were inundated and killed, creating swamp-like conditions instead of the natural, open and grassy state the wetland would have likely been in before ditching and a lack of fire. Agency staff began restoring the wetland by unplugging



Drone photo of “Dismal Pond” on Sandhills Game Land, January 2019 (Photo: Brady Beck)

the ditch, removing woody vegetation, restoring prescribed fire, and then re-plugging the ditch system. Uplands surrounding the wetland were also managed to create an open-canopy longleaf pine system. Staff monitored frog and toad use of the wetland during 2018-19 using an automated recorder. Analysis of the recordings revealed at least 10 species using the wetland during this time period. These included Southern cricket frog, Southern toad, pinewoods treefrog, gray treefrog, green treefrog, barking treefrog, spring peeper, green frog, American bullfrog and southern leopard frog. Monitoring and restoration efforts will continue for the foreseeable future to determine whether species richness increases and to assess the need for re-introducing some species that may have been lost in the past.

Biologists Discover New Species of Crayfish

In the foothills of western North Carolina, biologists with the Wildlife Commission and the N.C. Museum of Natural Sciences recently described a new species of crayfish, *Cambarus franklini*, from the upper South Fork Catawba River. Using morphological and genetic data, they worked together to define this new species. The South Mountain Crayfish is found only in Burke and Catawba counties and found almost exclusively in the main stem of Henry and Jacob Forks. It is distinguished from other crayfish in this area by its large chelae and blue-green and red coloration. Though this species has a limited range in the South Mountain region of North Carolina, it does have good water quality protection provided by the South Mountains

State Park and the Division of Water Resources stream classifications in both streams of Outstanding Resource Waters and High Quality Waters.



Annual Monitoring of Robust Redhorse in the Pee Dee Continues

Staff continued annual cooperative sampling and population monitoring for robust redhorse in the Pee Dee River downstream of Blewett Falls dam, alongside partners in the Yadkin-Pee Dee Technical Working Group, including Duke Energy, S.C. Department of Natural Resources (SCDNR), and S.C. Aquarium.

During targeted spring surveys, staff captured 53 robust redhorse in 95.8 hrs of electrofishing — a catch rate of 0.55 fish per hour. These captures represent:

- 45 unique individuals of which 29 were previously untagged fish

- 15 females, 30 males
- 12 recaptures from previous years, a recapture rate of 29.3%
- 4 Phase II juveniles, spawned in spring 2015, stocked in November 2016

Fish ranged in size from 19 to 29 inches (480 to 745 mm) in total length (TL), representing multiple age classes. Males who were known products of a 2014 stocking, released at six months of age, were reproductively mature, representing successful recruitment of captive reared fish into the wild population. Eggs from two females were crossed with four males for captive propagation this year. The

resulting fry will be grown out in ponds at Wildlife Commission's McKinney Lake Fish Hatchery and SCDNR's Dennis Center for population augmentation stocking.

Duke Energy biologists captured eight more individuals near Blewett Falls dam, including four 2015 Phase II fish. This brought the total number of robust redhorse captured in North Carolina in 2019 to 53 fish.

Staff collected fin clips from all animals in North Carolina, and genetic analysis conducted by SCDNR this summer will determine whether the new fish are products of previous augmentation efforts.



A 5-year old, sexually mature male robust redhorse with breeding tubercles on snout and fins (Photo: Brena Jones)

Staff Conduct Surveys of Species of Greatest Conservation Need Mussels

In May and June, staff continued status assessment surveys for the state endangered brook floater mussel at 31 sites in the Pee Dee and Cape Fear river basins. Biologists have detected 36 brook floaters from 11 sites, including Densons Creek, Little River, and West Fork Little River in the Pee Dee drainage, as well as the Deep, Rocky, and Haw rivers in the Cape Fear drainage. Genetic swabs were taken from a subset of the mussels for an ongoing population diversity study and all brook floaters were tagged.

Focusing on the Deep River in Randolph and Moore counties, Wildlife Commission staff and volunteers from partners including N.C. State University, the

Greensboro Science Center, private consulting firms and Appalachian State University, contributed 207 person-hours (p-h) searching for Species of Greatest Conservation Need (SGCN) mussels in six reaches of river during multiple visits. More than 12,000 individuals were collected over 15 surveys. In addition to Brook Floater, SGCN species detected included:

- Savannah lilliput; Federal Species of Concern, State Endangered
- Yellow lampmussel; Federal Species of Concern, State Endangered
- Triangle floater; State Threatened
- Creeper; State Threatened
- Chameleon lampmussel
- Eastern creekshell

Additional species found included Florida pondhorn, Atlantic spike, eastern elliptio and paper pondhorn. Catch per unit effort (CPUE) ranged from 3.1 (at Hwy. 1 in Moncure) to 143.3 (at High-falls) mussels per p-h.

During these surveys, several animals were recaptured that were originally tagged as part of the Carbonton Dam removal study from 2005 to 2008. These Eastern elliptios had remained in the original study site and are now well over 12 years old, as they were marked with a Dremel tool with the year of collection and were adults at the time of first capture.



Marked elliptio from 3rd year of Carbonton study (Photo: Brena Jones)



Tagged brook floaters from Densons Creek (Photo: Katharine DeVilbiss)

Cape Fear and Lumber Basin Crayfish Surveys Update

Wildlife Commission staff continued surveys to update distribution records for both native and exotic crayfish species in the Cape Fear and Lumber drainages, partnering with the N.C. Museum of Natural Sciences (NCMNS). The 33 sites targeted were previously un-surveyed locations or had dated records that were more than 10 years old.

Staff collected no Species of Greatest Conservation Need, but saw variable crayfish at six sites, representing newly documented occurrences in five sub-basins. These sub-basins were Drowning Creek, Raft Swamp, Shoe Heel Creek, Upper Little Pee Dee river in the Lumber watershed and Upper Little River in the Cape Fear watershed. Staff found individuals from the *Cambarus* species *C. acuminatus* complex at three sites and sent voucher specimens to NCMNS for genetic analysis. While the survey included sites within the historical ranges of five North Carolina endemic species, none of these species were captured.

A White River crayfish exhibiting signs of porcelain disease was found in Bear Swamp in Robeson County. Aside from

the recognizable bleaching of color on the underside of animals, little is known about the disease and the effect it may have on crayfish.

The exotic red swamp crayfish was found at nine localities, representing newly documented occurrences in four sub-basins of the Lumber River watershed -Red Hill Swamp, Porter Swamp, Ashpole Swamp and Leith Creek.

Staff will continue surveys through the end of 2019.



Red swamp crayfish (Photo: Jodie Owen)



White River Crayfish exhibiting porcelain disease (Photos: Katharine DeVilbiss)

Biologists Begin Mussel Reintroductions in French Broad and Little Tennessee Watersheds

This spring, three mussel species have returned to waterways where they haven't been seen in over 100 years. In an effort to restore mussel species diversity in western North Carolina, biologists have begun reintroductions of spike, wavy-rayed lampmussel and creeper mussels in partnership with Eastern Band of Cherokee Indians, U.S. Fish and Wildlife Service, Mars Hill University, UNC Asheville, and Western Carolina University. Wavy-rayed lampmussel has been reintroduced into

the French Broad River in Rosman, N.C., Ivy River in Mars Hill, N.C. and Oconaluftee River in Cherokee, N.C. Hatchery-propagated wavy-rayed lampmussels were affixed with uniquely identifiable Passive Integrated Transponder (PIT) tags prior to being stocked and will be monitored by partners to assess growth and survival at these three reintroduction sites. More stocking efforts are planned at these sites and other areas of the French Broad and Little Tennessee drainages.

Western region biologists also have recently reintroduced spike

and creeper mussels through translocations. In May, 50 adult creeper were relocated from the Little River, a tributary of the French Broad River, to the Ivy River. In June, 75 adult spike were relocated from the Little Tennessee River to the Oconaluftee River above Ela Dam.

These stockings also will be regularly monitored for survival. Biologists are hopeful that these reintroductions will eventually lead to the return of self-sustaining populations for these native mussel species.

Photos: Luke Etchison

Creeper



Processing creeper before translocation



Spike



Wavy-rayed lampmussel



Annual Southeastern Diversity Network Bat Blitz Yields 225 Bats

Bat biologists and enthusiasts from across the Southeast gathered on the Albemarle Peninsula for the annual Southeastern Bat Diversity Network (SBDN) Bat Blitz in June. The SBDN Bat Blitz is an intensive three-night mist-netting event that occurs in a different southeastern state each year. The last time North Carolina hosted the Blitz was in 2011 in Avery County. The Wildlife Commission helped host this year's Bat Blitz, alongside the N.C. Division of Parks and Recreation, the N.C. Museum of Natural Sciences, and Alligator River National Wildlife Refuge.

The Wildlife Commission's Wildlife Education staff kicked off the first night of the Bat Blitz with an educational program for the public. The program, titled "Bats Working the Night Shift" covered topics on bat biology, behavior and conservation needs. The program also highlighted local bats during a night hike in which bat echolocation calls were recorded and identified. Mistnetting surveys were conducted during the following three nights and targeted 28 survey sites in eight counties, including 13 sites on nine game lands. Participants captured 225 bats of eight species. Highlights included the capture of a federally threatened northern



An eastern red bat is compared with a Seminole bat on Alligator River Game Land (Photo: Kristi Confortin)

long-eared bat and three species of greatest conservation need: southeastern bat (31), Rafinesque's big-eared bat (9) and tri-colored bat (3). Attendance included over 50 participants, which consisted of biologists from state and federal agencies, students, professors and environmental consultants. Overall the bat blitz was a great success for bats and participants alike and will be used to establish long-term monitoring on the coastal plain.



Wildlife Diversity Technician, Kristi Confortin, and Wildlife Diversity Biologist, Katherine Etchison, band bats during the SBDN Bat Blitz (Photo: Kevin Parker)

A southeastern bat caught on Lower Roanoke River Wetlands Game Land (Photo: Kristi Confortin)



Golden-Winged Warbler Field (and Forest) Trips Update

In April, the Wildlife Commission, Southern Appalachian Highlands Conservancy, and the Appalachian Trail Conservancy co-hosted the spring Southeast Golden-winged Warblers partners meeting. Partners toured old-field habitat in Roaring Creek Valley in Avery County to see sites recently managed for golden-winged warblers. Then, with the [Best Management Practices for Golden-winged Warblers](#) in hand, they put their heads together to develop tentative prescriptions for areas needing habitat management and for the broader landscape.

May 2019 marked the 10th year of monitoring timber harvest units on the Nantahala

National Forest. Because a primary objective of the U.S. Forest Service is to regenerate forest, this habitat is inherently ephemeral, eventually “aging out” around 12 to 14 years after harvest beyond what these birds will use. Therefore, short of dedicating early successional forest patches managed over the long term for golden-winged warblers, the birds’ best prospect for finding their next home on national forest land is the shifting mosaic of new harvest units. In turn, monitoring points shift to new locations as old units age out. The Hazanet units, where monitoring began in 2010, are now 13 years old and were unoccupied this year. Nearby in the Cheoah Mountains, two 3-year old, harvest units at Ollie’s Creek har-

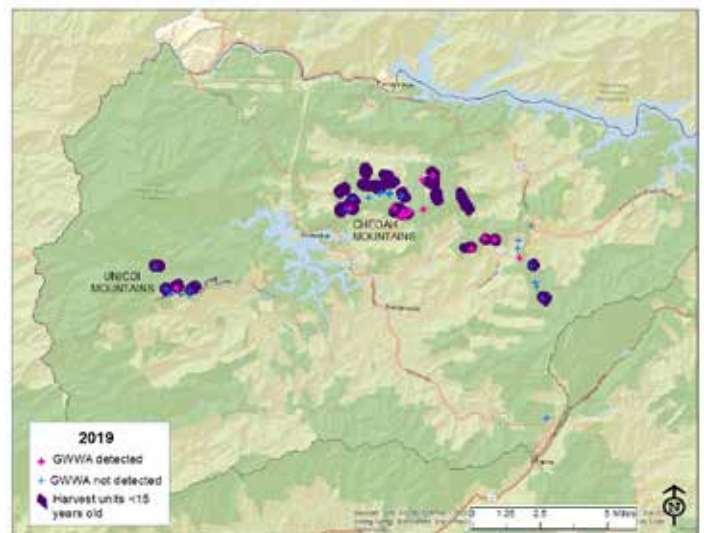
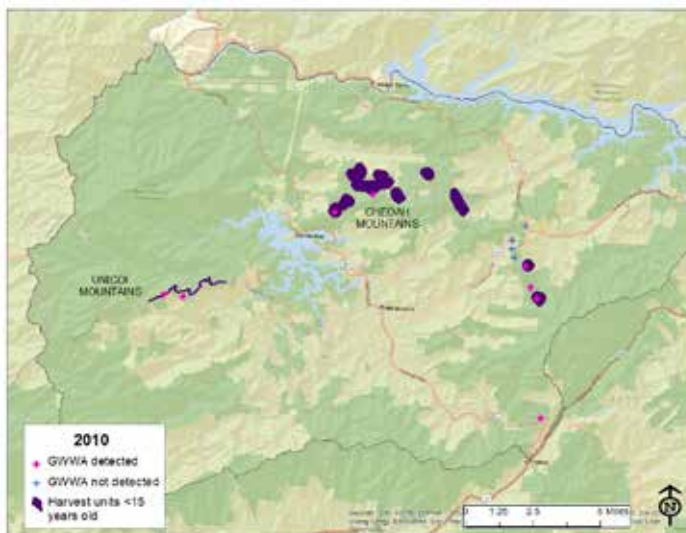


Golden-winged warbler
(Photo: Christine Kelly)

bored an impressive six males each. The three smaller 3-year old harvest units at Green Gap were all occupied.

Two of the males banded in 2018 were back on territory after another round-trip migra-

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Potential golden-winged warbler habitat within U.S. Forest Service timber harvest project areas on the Cheoah Ranger District in 2010 (left) and 2019 (right).

Golden-Winged Warbler Field (and Forest) Trips Update

tion to northern South America for the winter. A golden-winged warbler had claimed one of the new (2-year old) harvest units in the Santeetlah project area in the Unicoi Mountains, but logging is still underway. Meanwhile, succession has claimed formerly occupied roadside habitat along the adjacent Cherohala Skyway.

In June, partners from the Forest Service, National Wild Turkey Federation, and Audubon NC joined Wildlife Commission staff for their final bird survey in the Cheoah Mountains. For some of the silviculturists in attendance, it was their first time seeing and hearing a golden-winged warbler!

While watching the birds sing from tall residual oak trees and skulk through low thickets of pokeweed and goldenrod, partners and staff developed novel modifications to traditional silviculture prescriptions, intended to maximize habitat features such as song perches, food, and nest sites for golden-winged warblers.

[Check out this slow-motion video of a golden-winged warbler being released!](#)



Wildlife Diversity technician, Clifton Avery, surveys birds in a 3-year old harvest unit on the Cheoah Ranger District. (Photo: Christine Kelly)



A golden-winged warbler color-banded in May was sighted again on territory in mid-June by U.S. Forest Service biologist Johnny Wills. (Photo: Johnny Wills)



Wildlife Diversity Program biologists found a golden-winged warbler on territory in this 2-year-old harvest unit on the Cheoah Ranger District. (Photo: Christine Kelly)

Pond Mountain Game Land Update

Pond Mountain Game Land's extensive former Christmas tree fields present a unique opportunity for the Wildlife Commission to manage for a desired type of early successional habitat.

Wildlife Diversity and Land and Water Access crews met on site in 2018 and set objectives to manage $\frac{1}{3}$ of the open areas as grassland, $\frac{1}{3}$ as shrub-scrub, and $\frac{1}{3}$ as young forest. Prescribed burning, disking and mowing are tools being used to manage these seral stages.

In spring 2019, the Wilkes Crew burned over 400 acres. Wildlife Diversity biologists established photo points to monitor vegetation succession in response to management over the next five to 10 years within areas deemed most suitable for golden-winged warbler and vesper sparrow.

During annual bird surveys, biologists documented seven black-billed cuckoos in wet, shrubby areas of Pond Mountain Game Land. Although the New River basin is one of the most reliable spots for black-billed cuckoos in western North Carolina, the species is uncommon and had not been previously documented on Pond Mountain at such high density.

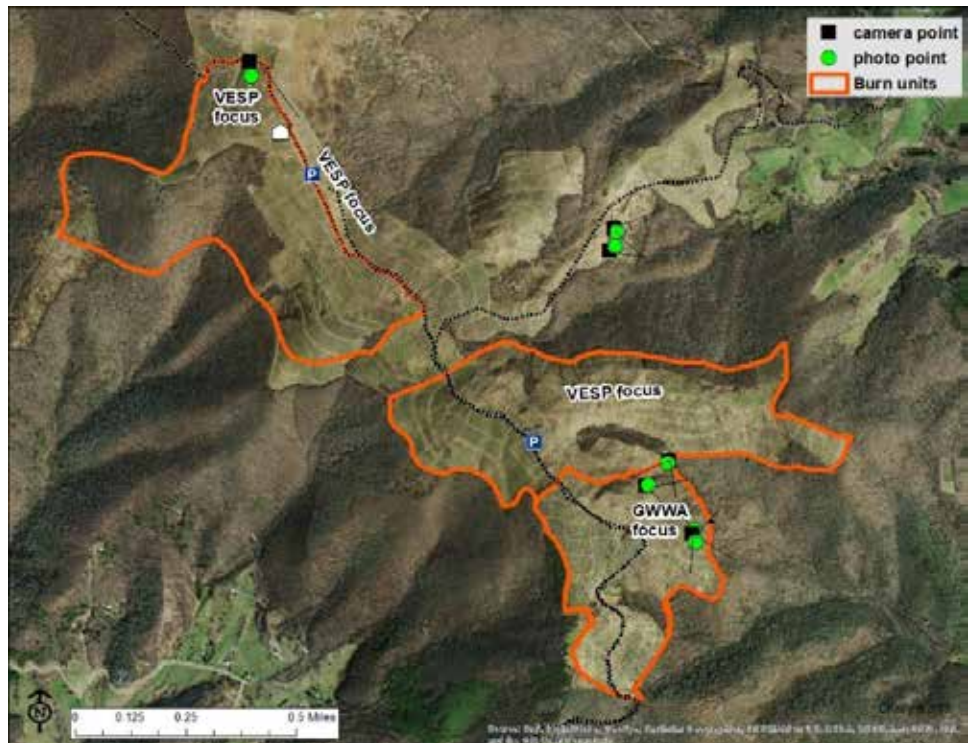


Photo monitoring points, prescribed burn units, and bird management focus on Pond Mountain Game Land (VESP = vesper sparrow; GWWA – golden-winged warbler)



A vesper sparrow at Pond Mountain Game Land (Photo: Christine Kelly)



A black-billed cuckoo (Photo: Kevin Parker)

Searching for Northern Pine Snakes in the Mountains

One of North Carolina's many "species of greatest conservation need" is the northern pinesnake. This large, nonvenomous snake is also a federal and state species of Special Concern. While it is most commonly encountered in the Sandhills and southern Coastal Plain of North Carolina, there are a handful of records, mostly historic, from the southwestern mountains. Pinesnakes have been reported in Cherokee and Swain counties, and many range maps show their distribution extending from Cherokee to Rutherford counties.

The Wildlife Commission began new work this year with the goal of better understanding these pinesnake populations in the mountains. The first step toward learning more about these populations is to locate some of these elusive animals. Pinesnakes spend the majority of their time burrowing underground, so it can be difficult to encounter them.

Following the recommendation of biologists in Georgia and South Carolina, the Wildlife Commission is trying to locate these snakes using drift fences with camera traps. A drift fence is a common method of cap-

turing reptiles and amphibians. The drift fence acts as a barrier on the landscape to impede the movement of animals and usually has some type of trap attached to it to capture the animal as it tries to go around the fence. In this case the trap is a camera. This camera trap consists of a modified trail camera suspended in a bucket placed at each end of the fence to photograph animals moving along the fence.

To focus the pictures at such close range, staff modified the cameras by gluing reading glass lenses over the cameras' lenses. Staff partnered with private landowners to place the drift fences in locations where the habitat seems suitable, including the location where a pinesnake was found most recently in the mountains.

Pinesnakes prefer open areas near pine-oak forest, and the open areas usually contain some type of recent disturbance (e.g., agriculture or development). Cherokee County is the focus currently because that is where a pinesnake was most recently encountered in the North Carolina mountains, and because there are many recent records immediately southward in Georgia.

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Northern pinesnake (Photo: Lori Williams)

Searching for Northern Pine Snakes in the Mountains

Staff installed two drift fences this spring, and hope to install a third later this year. The fences will be left in the field for at least two years, and the cameras will operate during the pinesnake active season (April through October) each year.

Thus far, staff have not photographed any pinesnakes, but they have captured a variety of other wildlife on camera, including squirrel, rabbit, mouse, rat, eastern fence lizard, common five-lined skink, copperhead, and several arthropods.



A camera trap drift fence placed in Cherokee County for detecting northern pinesnakes. Modified trail cameras are suspended in the buckets at the ends of the fence. NCWRC Conservation Technician, David Woody, finishes securing one of the camera trap buckets to the fence. (Photo: NCWRC)



A juvenile five-lined skink (left) and eastern fence lizard (right) documented in a camera trap

Staff Conduct Rainy-Night Surveys for Long-tailed Salamanders

In the second quarter, Wildlife Diversity Program staff and volunteers conducted rainy night surveys for surface-active salamanders, with a particular target in mind—the rare, hard-to-find, and poorly studied, long-tailed salamander, a state Special Concern species and Species of Greatest Conservation Need.

Despite targeted surveys, staff have not been able to find the species at any known site in

North Carolina in the past 10 years. The state's best population appears to be in the Watauga River corridor, but several of those records are quite dated. However, in June during road cruising surveys, staff located a long-tailed salamander close to historical sites where the species was reported over 30 years ago and not since that time.

Further, of immediate conservation concern, is a well-known long-tailed salamander population along Hwy. 105 in Watauga County

whose rocky slope habitat is slated for construction of a new roadway. In coordination with local private landowners, staff and volunteers began visiting the site on rainy nights in the spring and have continued those efforts this summer to find individuals for relocation in similar, nearby habitat as well as to further our knowledge of relative abundance and habitat use for this understudied species.



Searching for long-tailed salamanders in the dark for translocation (left). A long-tailed salamander translocated away from an upcoming road construction site in Watauga County (Photos: Kat Diersen)

Appalachian Cottontail Distribution Project Continues


Populations of the Appalachian cottontail are assumed to be declining in many parts of their range. However, the population status and trends in most of the range of this species, including North Carolina, are unknown.

In 2018, the Wildlife Diversity Program initiated a two-year Appalachian cottontail project in the western region of the state to better understand distribution, habitat preferences, and landscape genetics of the species. Wildlife Diversity staff have been working with partners at the Center for Proactive Conservation, Virginia Tech, and Warren Wilson College to perform scat surveys and trapping to gather genetic and spatial information. So far, 13 sites have been trapped over two field seasons, including locations at Roan Mountain Highlands, Great Smoky Mountains National Park, Black Balsam Knob, Blue Ridge Parkway, and Cradle of Forestry, for a total of 1,704 trap nights.

(continued on next page)



*A grassy bald on Roan Mountain, October 2018
(Photo: Andrea J. Shipley)*



*An Appalachian cottontail resting
after being processed post-capture,
Roan Mountain, October 2018.
(Photo: Andrea J. Shipley)*

Appalachian Cottontail Distribution Project Continues

During this effort, the presence of Appalachian cottontail was genetically confirmed for the first time at Cradle of Forestry. Both Appalachian cottontail and eastern cottontail were captured, in addition to potentially hybrid individuals. Of 16 captured Appalachian cottontail, six were fitted with radio collars and tracked to gather habitat selection information. Two seasons of scat and vegetation sampling along transects have been performed at 14 sites, for a total of 156 transects. Sampling along transects was performed along an elevational gradient to attempt to ascertain the degree of elevational distribution overlap between Eastern cottontail and Appalachian cottontail. As habitat fragmentation increases and new areas become disturbed, new pathways for Eastern cottontail to inhabit traditionally Appalachian cottontail habitat could potentially increase. It is important for staff to gain an understanding of how these two species overlap in their distribution and habitat preferences to inform future management considerations for Appalachian cottontail population conservation. An additional trapping and tracking field season is planned for the August 2019 through February 2020 timeframe to expand survey sites to include Mt. Mitchell, Panthertown, and the Unicoi Mountains.

This project is slated to wrap up in the first half of 2020, with results to include habitat modeling for the two cottontail species based on telemetry and scat survey data.



Field crew from Virginia Tech checking a trap line on Roan Mountain, October 2018 (Photo: Andrea J. Shipley)



The Virginia Tech field crew sets up a processing station to process a captured cottontail rabbit, Roan Mountain, October 2018. (Photo: Andrea J. Shipley)