

STATE OF THE *Birds*

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As bird populations continue to decline, N.C. Wildlife Resources Commission biologists focus on protecting species of greatest conservation need

It's dark and chilly, but a hint of orange and yellow where marsh grasses touch the sky build anticipation like an orchestra conductor raising her arms before pointing her baton at a single violin. First, a solo birdsong, quickly followed by staccato notes from other performers. Then the full orchestra bursts into the marsh, or forest or grassy field, wherever you are on these wondrous birdsong mornings. Each singing male must make himself known, to clearly state, "This is my territory. I am here and I am the one to choose." Females know the most accomplished and vigorous song, and they select the best.

What did this chorus sound like 30 years ago? It must have been spectacular. Recent research revealed an alarming decline in bird populations. Since 1970, forest birds declined by 22 percent, shorebirds by 37 percent and grassland birds by 53 percent. The North American Bird Conservation Initiative's 2019 State of the Birds Report highlights this significant and alarming loss of birds nationwide—an estimated 3 billion birds.



In North Carolina, you may have noticed fewer dark-eyed juncos in the winter, or smaller flocks of robins in the spring. Such changes have not gone unnoticed by N.C. Wildlife Resources Commission biologists. In fact, much work has been done by Commission biologists and partners to identify threats to bird populations and habitats, and to alleviate these threats whenever possible. Like the 3 billion birds lost since 1970, this work is often overwhelming. The Commission has whittled-down the problem by identifying species of greatest conservation concern and focusing work on them as representatives of keystone habitats.

In North Carolina, these birds are represented by the golden-winged warbler, cerulean warbler, red-cockaded woodpecker and Kentucky warbler in our forests; loggerhead shrike, Bachman's sparrow, Henslow's sparrow and Northern bobwhite in our eastern grasslands; and American oystercatcher and Wilson's plover along our 300 miles of coastal shores.

A HISTORY OF SUCCESS

The Commission's work on game species, such as the Eastern wild turkey and wood duck, began after the Pittman-Robertson Act passed in 1937 and established funds for research, management activities and habitat conservation and acquisition. Many partners, such as the National Wild Turkey Federation and Ducks Unlimited, contributed funds, staff and membership support to turn the tide. The North American Waterfowl Management Plan was drafted in the early 1980s and was the first strong initiative to support full annual cycle conservation of migratory species—engaging Canada, the United States and Mexico in wetland habitat restoration, enhancement, protection and acquisition. Robust population and habitat monitoring programs provided data to inform decision-making models. In fact, waterfowl numbers have increased by 56 percent since 1970; a great example of state, federal and non-governmental partnerships bringing about significant, positive change.



This successful equation also includes regulations. Conservative bag limits and seasons based on population models informed by field biologists' survey data balanced hunting opportunities and protection, and waterfowl populations increased. The 1986 North American Waterfowl Management Plan was the blueprint for numerous partners and resulted in successful population increases and wetland habitat enhancement and restoration.

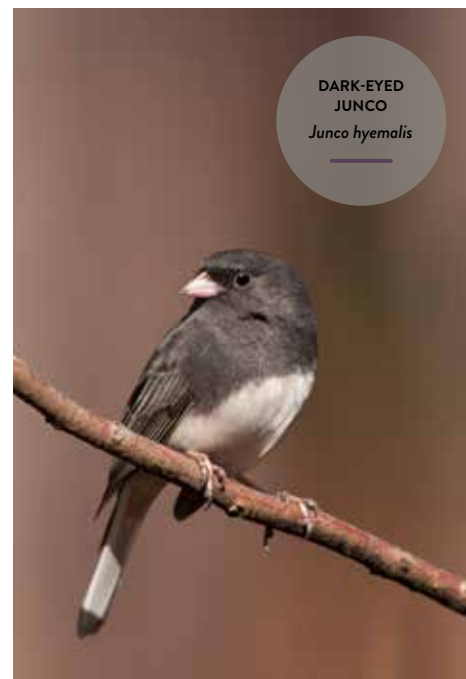
Other success stories include increases in bald eagle, osprey and peregrine falcon numbers. These birds of prey benefited from regulations prohibiting use of DDT and protective legislation such as the Bald and Golden Eagle Protection Act, Endangered Species Act and Migratory Bird Treaty Act. The Commission's field biologists created nesting platforms and hacking stations, protected nests, monitored abundance and distribution annually, and formed partnerships with industry, private landowners and many agencies.

Today, bald eagles nest around Jordan Lake and large concentrations are in Beaufort County. It is difficult to find many channel markers along our coast without

Above: N.C. Wildlife Resource Commission biologist David Allen listens and looks for the Henslow's sparrow at the Voice of America Game Land in eastern North Carolina. Top right: Former Commission biologists Scott Osborne (left) and Mike Seamster (center) release an Eastern wild turkey in the early 1990s.

an osprey nest. And this spring, a peregrine falcon pair perched on the "O" in the Wells Fargo sign in downtown Raleigh. Whether the peregrines will nest there remains to be seen.

In the mountains, three new pairs of falcons nested on cliffs in 2019 and 2020. One pair chose a historic site last used by peregrines in 1953. Another site is a former release site used during the Commission's reintroduction efforts in the 1980s. Two other new nests are suspected. These amazing aerial symbols of strength have returned due to much effort from Commission biologists and many partners. These successes are outstanding examples of what we can do through passionate effort and a mix of regulation, protection, management and directed funding.



SLOWING THE DECLINE OF SONGBIRDS AND SHOREBIRDS

What about North Carolina's songbirds and shorebirds? These birds are often the most visible, and we expect them to be in our backyards and trotting up and down beaches. They indicate beginnings of seasons—flocks of robins in the spring, arrival of juncos in the winter, red-winged blackbirds in marshes and sanderlings along the shoreline.

Out of concern for alarming declines of common songbird species, many diverse organizations and individuals developed Partners in Flight, a collaborative effort among state wildlife agencies, the National Fish and Wildlife Foundation and U.S. Forest Service. Partners in Flight (PIF) began in 1990 and precipitated new state agency biologists who focused on non-game landbird species.

In 1993, the Commission designated Mark Johns as the agency's first PIF biologist, a position now held by Scott Anderson. North Carolina Partners in Flight helped create a collaboration among state and federal agencies, industry, private landowners and nongovernmental organizations to initiate land management and conservation projects, research and monitoring programs for nongame landbirds, especially long-distance migrants or neotropical migrants. There are 67 species that nest in North Carolina, then migrate to Mexico, Central America, the Caribbean and South America for the winter.

Commission biologists have focused survey, monitoring and research efforts on several of these species since the mid-1990s. The following examples demonstrate the conservation progress we have made for vulnerable bird species by collaborating with many concerned partners and private landowners.

GOLDEN-WINGED WARBLER

The golden-winged warbler is a beautiful, 8-gram neotropical migratory songbird that nests in North Carolina's Appalachian



Mountains, dining on caterpillars and selecting openings within forests for its nesting habitat. Across the Appalachian Mountains, the golden-wing population declined by a startling 98 percent between 1970 and 2014. Its annual rate of decline is 8 percent.

Factors impacting the species' decline include the ephemeral nature of its preferred habitat, which requires active management in the absence of natural disturbances, and its hybridization with the blue-winged warbler. Rates of hybridization increase when blue-wings move upslope in response to loss of their own habitat in the mountain valleys. In addition to these threats, the golden-wing's wintering grounds in northern South America suffered extensive habitat loss from logging in the 1940s and '50s, and illegal logging is on the rise again.

Forest openings golden-wings select for nesting are old fields, beaver-created wetlands and timber harvest units with scattered trees, clumps of shrubs and broad-leaved herbs and grasses. Females build their nests on, or inches from, the ground and conceal its location from predators by never approaching it directly. Rather, she alights on a tall stem, scoots down this "fire

Center: Scott Anderson, the Commission's bird biologist, removes a tufted titmouse from a mist net at Sandy Run Savannas State Natural Area in western Onslow and northeastern Pender counties.

pole" (a term coined by Curtis Smalling of Audubon North Carolina), then scurries across the ground to her nest, which may be several meters distant. The parents lead their brood into the surrounding forest upon fledging. Biologists and bird parents alike work passionately toward a noble, cross-species goal: ensuring survival of young golden-winged warblers.

Golden-winged warbler conservation requires deep biological knowledge and strong partnerships. Chris Kelly, Mountain Region conservation biologist for the Commission's Wildlife Diversity Program, collaborates with the Southern Appalachian Golden-winged Warbler Partners, which include the Appalachian Mountains Joint Venture, land trusts, state and federal governments, Audubon NC, the Appalachian Trail Conservancy and others.

Partners convene twice a year to coordinate surveys, design habitat management projects and discuss new research. In April 2019, the group visited old field habitat in



Avery County. With tattered copies of the golden-winged warbler Best Management Practices booklet in hand, Partner biologists drilled down to address subtler decisions for implementing these practices. Which trees should be left for male song perches? When can we mow? What other wildlife will benefit?

As surveys for golden-winged warblers were completed in June, Kelly looked forward to hearing from partners and their reports of positive responses of these birds to their habitat restoration efforts. The golden-winged warbler population has benefited greatly from increased attention from Commission biologists and partners.

LOGGERHEAD SHRIKE

Soaring down from the Appalachian Mountains to the Piedmont and Coastal Plain brings you to the range of the Northern bobwhite, Bachman's sparrow, Henslow's sparrow and loggerhead shrike that seek open forests and fields. These species' populations have declined for years and are the focus of much effort by Commission biologists and others.

Southeastern native grasslands, upon which these species depend, have been



PARTNERS IN FLIGHT

Partners in Flight (PIF) is celebrating its 30th anniversary in 2020. PIF was launched in 1990 to stop and reverse declines of populations of long-distance migratory songbirds. Leadership and support is provided through the National Fish and Wildlife Foundation through Amos Eno, State Wildlife Agencies through Gary Myers, the U.S. Forest Service, several NGOs and others. PIF has been foundational to a movement that changed wildlife conservation in the United States. Conservation of nongame songbirds led to application of conservation biology concepts, such as minimum tract size requirements, connectivity of habitats, full annual cycle and creative international partnerships. Birds are indicators of viable habitats and ecosystem health for other species and habitats under our stewardship. PIF's mission is "keeping common birds common and helping species at risk through voluntary partnerships." PIF is now a network of more than 150 partner organizations distributed throughout the Western Hemisphere.



How Do Oystercatchers Catch Oysters?
See Nature's Ways, page 43.

converted over time to row-crop agricultural fields, intensively grazed pastures of introduced grasses, and roads, suburbs and cities. On Commission game lands, federal partners' lands and conservation-minded private landowners' properties, much work has been underway to restore and enhance native grasslands in open fields, under boughs of the longleaf pine, along roadways and within rights-of-ways for powerlines. Prescribed burning plays an important role in restoring native grasslands, as does plantings of native grasses, legumes and forbs.

The 2019 State of the Birds Report highlights the alarming declines of grassland-dependent birds and native grasslands—a 53 percent decline since 1970. The North American Bird Conservation Initiative stated in 2018 that grasslands are a priority habitat needing significant conservation efforts throughout North America.

Of all grassland songbird species, the loggerhead shrike has arguably been hit the hardest with estimated losses exceeding 75 percent of its population across its entire U.S. range. Shrikes are in North Carolina year-round, and although Commission biologists detected some declines in shrike numbers—notably in the Piedmont ecoregion—a silver lining for this species hangs over the Coastal Plain and Sandhills.

John Carpenter, the Commission's Coastal landbird biologist, initiated monitoring projects for the loggerhead shrike and found it to be locally common throughout many areas, and in fact, North Carolina may be a stronghold for them. In the southeastern Coastal Plain, shrikes are found nesting in landscapes dominated by agriculture, mostly on privately owned properties; thus, shrikes are a "farm-friendly" bird. They do, however, build nests in areas heavily influenced to some degree by other human activities, including residential front yards and city parks, so there is opportunity for many North Carolinians to lend a hand. Assistance can come in many forms, from planting appropriate nesting substrates (like longleaf



WILSON'S PLOVER
Charadrius wilsonia

pinus and Eastern red cedar) to allowing Commission biologists to visit your property and study them up-close. We have much left to learn about this species, but we should feel proud that North Carolina is capable of playing a pivotal role in sustaining loggerhead shrikes.

SHOREBIRDS AND WATERBIRDS

North Carolina also plays an important role in the conservation of birds that depend on our more than 300-mile long coastal shoreline for one or more seasons throughout their annual cycle. Commission biologists have been working with coastal partners to survey, monitor, protect and conduct research on coastal waterbirds for decades.

Tom Henson was the first biologist who had this pleasurable job of walking beaches and boating to islands to work with these birds, beginning in the early 1990s. These coastal habitats are under so much pressure from human use—from recreation to development, dredging, filling and, more recently, subsidence and erosion—that Commission biologists formed strong, collaborative partnerships with many agencies, non-governmental organizations and

citizen groups to develop multi-partner and even multi-state conservation and research projects.

These efforts in North Carolina have resulted in positive responses from some species, such as brown pelicans and great egrets. Shorebirds, those species that run up and down the shoreline looking for insects, small clams and worms, have not fared as well. Data from the State of the Birds report reveal that shorebird populations have declined by 37 percent since 1970. Like many long-distance migratory birds, shorebirds time their travel and stop-over breaks to match the cyclical availability of food. When their shoreline stop-over sites are dredged away or filled by beach nourishment projects, or numerous people partying with their dogs running around, they must move on with an empty stomach. Even if they are "hangry," they are too small to do much about it.

That's where we come in. Commission biologists have identified the best sites for shorebirds to feed, rest and nest. We delineate these areas with sign-posts, often with twine tied between them. Working on the Commission's islands in Pamlico and Core sounds that are designated as



Conservation Areas, as well as on portions of beaches managed by municipalities and conservation-minded landowners, biologists have enhanced and protected many sites for shorebirds to feed, rest and nest.

An easy-to-identify, large shorebird that has benefited from these activities is the American oystercatcher. It feeds along shorelines for small clams and sand fleas, but primarily feeds on oysters and clams on natural and man-made islands. Its population along the Atlantic Coast had been declining for years, but concerned managers and scientists formed a work group in 2001 to tackle problems facing the oystercatchers. Through coordinated research, management actions, continued population monitoring and increased protection, the Atlantic population of American oystercatchers has begun to increase.

Carmen Johnson, the Commission's waterbird biologist, helped coordinate the 2019 coast-wide survey for nesting American oystercatchers. This survey was no easy feat—it involved biologists and volunteers from federal and state agencies, municipalities, universities and Audubon NC. All possible nesting pairs were tallied from barrier island beaches, dredged-material



AMERICAN OYSTERCATCHER
Haematopus palliatus

islands, natural marsh islands and oyster rakes. When the dust settled, or sand quit blowing, the numbers of pairs were summarized and presented at an annual partners meeting. The total number of pairs increased from 337 in 2004, the first survey, to 393 pairs in 2019.

These numbers reveal that the conservation plan partners use as a blueprint is providing a successful return on investment. If you are walking North Carolina's beautiful beaches or boating its sounds, and you spy an oystercatcher, perhaps one with a color-coded band on its leg from a researcher, you will know that much passion and hard work went into turning this species' population around.

A PASSION FOR CONSERVATION

Chilly, pre-dawn departures are the norm for Carpenter, Kelly and Johnson to prepare for a day's engagement with birds in forests, fields and shores. But if you ask them, they'll say it's worth every lost hour of sleep. It's our purpose to be part of nature, not apart from it; to throw passion and concern into each day's work and protect and enhance the habitats of birds that decorate our state,

A student intern assists Sara Schweitzer, coordinator of the Commission's Wildlife Diversity Program, with posting signs alerting the public to closed areas of the shoreline for nesting shorebirds, which has benefited species like the Wilson's plover and the American oystercatcher.

providing uncounted benefits, both tangible and spiritual. Their end goal will be achieved beyond their lifetimes—ensuring birds here today can be seen and heard in another 50 years. NC Partners in Flight—what a great name! ♦

Sara H. Schweitzer, Ph.D., is the wildlife diversity program coordinator for the Wildlife Management Division. Dr. Schweitzer is the Chair of the Partners in Flight Steering Committee and serves on the Council of the U.S. Shorebird Conservation Plan Partnership. Christine Kelly, John Carpenter and Carmen Johnson are wildlife diversity biologists focusing on nongame birds in mountain and coastal regions, respectively. Scott Anderson is a wildlife diversity biologist who leads the NC Partners in Flight program and NC Birding Trail project.