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- Bobwhite Foundation Supporter •
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*John L. Seymour*

President

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NBCI's

# Bobwhite Almanac

State of the Bobwhite 2019




[www.bringbackbobwhites.org](http://www.bringbackbobwhites.org)



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NBCI'S BOBWHITE ALMANAC/STATE OF THE BOBWHITE REPORT is an annual publication of the National Bobwhite Conservation Initiative (NBCI) to provide a range-wide snapshot of population, hunting, and conservation status of the northern bobwhite (*Colinus virginianus*) as well as a sampling of various efforts underway to reverse the bobwhite decline. This report is made possible by the financial support of participating state agencies, the Federal Aid in Wildlife Restoration Program, the University of Tennessee, Roundstone Native Seed, the Joe Crafton Family Endowment for Quail Restoration, and Park Cities Quail.

NBCI is an initiative by and for the National Bobwhite Technical Committee—25 state wildlife management agencies, along with numerous conservation groups, research institutions, and federal partners—to provide national leadership, coordination, and capacity to catalyze large-scale, strategic restoration of native habitats as the long-term means to restore widespread populations of wild bobwhites and, consequently, other species dependent on native grassland habitat. NBCI is headquartered at the University of Tennessee Institute of Agriculture.

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*Photo by Lee Metcalf, Missouri Department of Conservation*



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# Foreword



**Paul Johansen**

*West Virginia Division of  
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Chief of Wildlife Resources*

The 2018 Farm Bill was reauthorized by Congress and signed into law by President Trump on December 20, 2018. Farmers, ranchers, and others concerned with establishing and maintaining sound conservation practices on private lands across the country have been afforded a great opportunity. The conservation title within the Farm Bill provides a suite of provisions designed to allow landowners the ability to implement and maintain wildlife-friendly practices on their lands. Baseline funding for the conservation title in the 2018 Farm Bill was maintained. Highlights include the following:

- Environmental Quality Incentives Program (EQIP): increases the minimum level of funding for wildlife practices to at least 10%; increases funding over the 5-year authorization to \$2.025 billion; allows 10-year contracts for wildlife practices.
- Conservation Reserve Program (CRP): increases the acreage cap to 27 million; establishes a 2 million acre floor for CRP Grasslands for 2021-23 and requires an annual enrollment; requires a CRP general sign-up not less than once each year.
- Voluntary Public Access and Habitat Incentive Program: provides \$50 million in total mandatory funding; simplifies application/reporting process.
- Wetland Reserve Easements: increases acreage cap by 15%.
- Regional Conservation Partnership Program (RCPP): provides \$300 million per year in mandatory funding and streamlines administrative processes.
- Working Lands for Wildlife Program: codifies the program and expands it to include the Farm Service Agency and CRP.

Of particular note is the fact that the National Bobwhite Conservation Initiative (NBCI) achieved its two top priorities in the 2018 Farm Bill—language encouraging the use of native vegetation in its various conservation programs, and increased funding for tree thinning and prescribed burning under CRP. As NBCI Director Don McKenzie noted, “We have contended for years that adoption of a native vegetation standard by USDA could be the single most important development in restoring bobwhites, other grassland birds, and pollinators across their ranges. Such an improved standard for public conservation money spent by USDA would be a game changer that finally tilts the playing field in favor of many declining species on private lands. On top of that achievement, we also succeeded in expanding the sorely needed CRP tree thinning and prescribed fire effort.”

The success of this legislative effort was due in large part to the work of the *Natives First* coalition, key members of Congress, and many dedicated conservation organizations. Park Cities Quail in Dallas, TX, deserves particular praise for the funding they provide to NBCI for advocacy work in Washington, DC.

It is important for NBCI and its partner organizations to fully appreciate the opportunities afforded by the 2018 Farm Bill. Now is the time to roll up our sleeves, capitalize on the conservation provisions contained in this legislation, and embrace the implementation of wildlife-friendly practices on private lands that produce and maintain quality habitat for bobwhites across their range.





# Introduction

It doesn't seem so long ago. This year is the 25th anniversary of the founding of the nation's first regional technical group focused on taking action to confront the bobwhite decline. The group—originally the Southeast Quail Study Group—was born from a meeting convened by Breck Carmichael at the South Carolina Department of Natural Resources' historic Webb Wildlife Center.

A chain of landmark events was launched that continues today with the leadership and energy of the National Bobwhite Technical Committee (NBTC). The NBTC celebrated its silver anniversary at its Annual Meeting in the "Land of Lincoln" at the invitation of the Illinois Department of Natural Resources, generously hosted by Quail Forever at Southern Illinois University in Carbondale.

When the fledgling technical group published the NBCI strategic plan in 2002, the first major bobwhite policy victory occurred immediately: language in the 2002 Farm Bill specifically instructing the Secretary of Agriculture to support habitat goals of the NBCI. "Only" two years later (8 years after the SEQSG's formal request), the USDA Farm Service Agency finally agreed to establish a long-awaited field borders practice for upland birds in the Continuous Conservation Reserve Program.

Such major victories are infrequent in the world of federal conservation policy. However, 16 years and several victories later, the power of the organized NBCI effort continues to impress. The 2018 Farm Bill—the first since the NBCI has been operating at full strength—includes a profound victory for the long-term future of bobwhites and grassland wildlife. NBCI's innovative and ambitious proposal to establish a native vegetation standard at USDA, *Natives First*, was incorporated into the Managers' Report, instructing the Secretary of Agriculture to further emphasize native vegetation in conservation programs to benefit bobwhites and other priority grassland wildlife.

That this accomplishment is a tectonic shift in grassland habitat conservation should be obvious to all, for no single change in federal government policy has such long-term potential benefits. Stopping the subsidized spread of aggressive exotic vegetation is half our battle on agricultural lands, finally bringing a net gain of native grassland habitats within reach. Credit for this historic achievement can be shared by many, including the NBTC's Grasslands Subcommittee; NBCI's Tom Franklin, Jef Hodges, Bridget Collins, and Kyle Brazil; and the Park Cities Quail Coalition for its sustained financial support of NBCI's federal advocacy. NBCI also offers special thanks to US Representative Mike Conaway (TX) and his staff on the House Agriculture Committee for recognizing the importance and supporting the *Natives First* concept.

Reflection often follows such monumental achievements. There comes a time for all of us when a person has been in a job long enough. A person who is fortunate will recognize that time and be prepared to act on it. My time has come. I've remarked in the past that I should retire when NBCI gets *Natives First* in the Farm Bill, for there can be no bigger career victories. I have decided to trust and follow those instincts. I led NBCI for 15 years, and have been intimately involved from its very beginning 21 years ago. For all the progress we all have made together, the immense job of bobwhite restoration has only just begun. NBCI's national leadership is as important to that job as ever, but the challenges of the future require new skills and ideas, as well as boundless energy and determination from the next generation of dauntless bobwhite conservation leaders.

The many passionate people I have been honored to work and play with over 25 years of common cause are priceless to me. I thank each of you deeply for your dedication, for your support, and for your friendship.



**Don McKenzie**

*National Bobwhite  
Conservation Initiative,  
Director*



# Quail Tracks

## Brief but Important Snapshots of Quail Activity in NBCI's Partner States

**ALABAMA** | Fall and spring quail surveys have been completed on the Boggy Hollow Wildlife Management Area (WMA) and Blue Spring WMA reference area, with habitat assessments scheduled for completion this summer. Located in the Conecuh National Forest, the 7,000-acre Boggy Hollow WMA is the first NBCI Coordinated Implementation Program quail focal area for Alabama Wildlife and Freshwater Fisheries (AWFF), in cooperation with US Forest Service (USFS). Another cooperative effort between AWFF, USFS, and Quail Forever aims to restore a 3,000-acre portion of Choccolocco WMA on the Talladega National Forest as a quail emphasis area. Quail population monitoring began this spring, and habitat enhancements will continue through timber harvests and an aggressive prescribed fire program.



Partners gathered at Conecuh National Forest to review and discuss the Boggy Hollow Quail Focal Area. Photo by NBCI.

**ARKANSAS** | Arkansas added three Quail Forever (QF) positions to better serve its private landowners this past year. The positions include a state coordinator, a monarch and pollinator coordinator, and an eighth farm bill biologist. When QF and Arkansas Game Fish Commission private land efforts were combined, 14,380 acres of habitat were enrolled into either a state or federal cost-share program during 2018. A Regional Conservation Partnership Project (RCPP) will be available to landowners in 14 counties in the northern part of the state in 2019. The RCPP will provide an additional \$595,000 for habitat

improvement work through using NRCS Environmental Quality Incentives Program funds. In addition to private lands work, over 1,500 acres of management were conducted at the NBCI Coordinated Implementation Program focal area at Pea Ridge National Military Park. Practices implemented included prescribed burning, spraying, and cedar removal. Work continues on wildlife management areas (WMA) with an emphasis on quail management throughout the state, with over 5,000 acres of enhancements occurring last fiscal year. Two of those WMAs (Harold Alexander and Little Bayou) are seeing increases in quail heard during fall covey counts.

**DELAWARE** | Cedar Swamp Wildlife Area (WA) in New Castle County was officially designated as Delaware's first NBCI Coordinated Implementation Program focal area in 2016, and Ted Harvey Conservation Area in Kent County has been designated as the accompanying reference area. Since the designations, the Delaware Division of Fish and Wildlife (DFW) has conducted spring breeding bird (whistle call counts) and fall covey count surveys. Additionally, DFW staff conducted habitat surveys of both areas. The 2019 spring whistle call counts mark the beginning of the fourth year of data collection for Delaware. Habitat restoration efforts at Cedar Swamp WA began in fall 2016 and have continued through 2019. Management practices included: controlled burns, edge feathering, and the removal of hundreds of acres of agricultural lands and conversion to native forb/grass mixes. DFW continues to reduce the amount of agricultural lands and restore these to early successional habitat.

**FLORIDA** | The Florida Fish and Wildlife Conservation Commission (FWC) and cooperating partners (Florida Forest Service, Florida Park Service, US Forest Service [USFS], and Tall Timbers Research Station [TTRS]) continue to implement on-the-ground management and research to improve populations of northern bobwhite and other grassland species on public lands throughout Florida. A cooperative research project between FWC, TTRS, USFS, and University of Georgia will evaluate northern







*FWC participated in a quail field day for landowners sponsored by Florida University. Photo by NBCI.*

bobwhite movement, habitat use, and site fidelity within the Apalachicola National Forest in relation to food availability and cover. Participants hope results will allow public land managers to refine, implement, and target habitat management to increase bobwhite populations, creating greater opportunities for Florida hunters to experience a wild covey rise on public land. In addition, FWC and partnering agencies continue to provide technical assistance to landowners to enhance or create new bobwhite habitat throughout the state.

**GEORGIA** | Georgia has seen several good reproduction years and good overwinter survival, which resulted in increases in quail numbers on most public lands. The NRCS Working Lands For Wildlife (WLFW) Bobwhite in Pine Savanna and Gopher Tortoise programs continue to help put more habitat on the ground. Private lands program biologists helped enroll over 11,500 acres in WLFW in 2018. Georgia designated just over 4,500 acres on Silverlake Wildlife Management Area near Bainbridge as a NBCI Coordinated Implementation Program focal area in September 2018. A few weeks later, hurricane Michael hit the area as a Category 3 storm, which greatly accelerated the timber thinning scheduled for the next several years, shut down covey counts for 2018, and made hunting difficult. Clean-up continues, and expectations are high as the storm created lots of early successional habitat across south west Georgia. The Georgia Department of Natural Resources continues to work with Quail Forever (QF) chapters to improve quail habitat on public land through Florida/Georgia Quail Coalition funds. QF has put more “boots on the ground” by hiring three Farm Bill biologists to assist in quail and habitat restoration efforts.

**ILLINOIS** | Illinois designated their first NBCI Coordinated Implementation Program focal area at the now state-owned, 4,508-acre Burning Star Mine site near DeSoto. The Illinois Department of Natural Resources (IDNR) purchased the property from Consolidation Coal Company (CCD) in December 2014 for \$11.5 million. The area is dominated by large tracts of forestland which are interspersed with cropland, lakes, wetlands, shrubland, and grassland. Burning Star operated as a surface coal mine from 1976 to 1989 and officially closed in 1992. CCD worked with IDNR for more than 25 years to maximize wildlife habitat with a long-term goal of establishing a new state fish and wildlife area. Additionally, Quail Forever hosted the 25th annual meeting of the National Bobwhite Technical Committee in Carbondale in July, the first NBTC meeting in the state.

## 25th Annual Meeting of the National Bobwhite Technical Committee



July 22-26, 2019 | Carbondale, IL

*The 25th Annual Meeting of the Bobwhite Technical Committee was held in Carbondale, IL, and was hosted by Quail Forever and IDNR.*

**INDIANA** | Indiana is now officially enrolled in the NBCI Coordinated Implementation Program, and the first year of bobwhite and grassland bird monitoring was completed in 2019. The 2018 Northern Bobwhite Whistle Call index was unchanged from the previous year. However, harvest on state-managed fish and wildlife areas was generally higher across the state, with some properties experiencing a 30% increase in harvest. The Indiana Department of Natural Resources (IDNR) Private Lands Program is implementing the Grasslands for Gamebirds and Songbirds Regional Conservation Partnership Project across four focal regions within the state and has hired three additional private lands biologists specifically for the effort. Beginning in January 2020, IDNR will be collaborating with the University of Georgia and a PhD. student under the direction of Dr. James Martin on bobwhite quail research.





IDNR field staff participate in bird identification training on Goose Pond Fish and Wildlife Area. Photo by IDNR.

on the Goose Pond Fish and Wildlife Area. During this project, we hope to better understand the effects of hunter effort and harvest rate on bobwhite survival, reproduction, movement, and fall densities.



**IOWA |** The 2018 statewide quail index was 62% above the 10-year average and right at the 60-year average. The last four years have shown the highest quail index seen in the last 20 years. Based on staff and landowners reports, quail numbers are at modern era highs for Iowa. The southwest and south central regions reported quail numbers similar to last year, while the southeast region reported significantly more quail than 2017. Landowners and staff reported numerous calling males this spring, indicative of very good winter survival. Harvest numbers were not yet available for the 2018 hunting season, but are also expected to be above the 10-year average. Hunters reported good success across Iowa’s southern quail range last fall. Unfortunately, the winter of 2018-19 was harsh in Iowa’s quail range, and bird numbers are expected to be lower in 2019. To further the mission of the NBCI Coordinated Implementation Program (NBCI CIP), Iowa DNR hosted the third CIP Results Workshop in Mt. Ayr January 7-11, 2019. The Iowa Department of Natural Resources hosted the workshop in conjunction with Pheasants Forever and NBCI. Twenty-two staff participated, including: NBCI; Iowa State University; University of Georgia analytical team; Iowa, Indiana, Kentucky, Missouri, Nebraska, and Virginia state agencies; and Pheasants Forever. Topics included bobwhite winter survival in the northern portion of their range, CIP design and data collection progress, fall and spring bird/quail density monitoring, CIP habitat monitoring results, habitat management data, and hunting data protocols. One

participant noted, “We covered a lot of topics in two days and I believe we made progress on virtually all of them, so kudos to the group.”



**KANSAS |** The Kansas Department of Wildlife, Parks, and Tourism recently established an internal Small Game Committee comprised of private lands wildlife biologists, public land managers, and law enforcement officers from across the state. The committee helps ensure that agency management actions and policy decisions maintain focus on quail and other small game species. The committee discusses all aspects of small game management but largely focuses on habitat, particularly how to increase and improve early successional habitat management and how/when/where to approach targeted management in Kansas. Early efforts are increasing communication between staff to ensure everyone has the most relevant information. The committee began by hosting a Small Game Workshop for department staff to present information on current research and management projects from across the state. Future priorities include identifying research needs, updating and maintaining valid regulations, and supporting hunter access and R3 efforts within Kansas.



**KENTUCKY |** The Kentucky Department of Fish and Wildlife Resources (KDFWR) launched a new research project with the University of Tennessee’s Center for Native Grassland Management on Bluegrass Army Depot to study the utilization of native grass pastures by northern bobwhite. Pastures will be grazed during the summer months while fescue pastures are left to rest. The aim is to establish a grazing system in the mid-South that re-establishes the connection between cattle and bobwhite that has been



State agency truck wrap featuring prescribed fire and bobwhites. Photo by KDFWR.





severed through use of exotic grasses and overstocking. As a component of this work, a multi-partner team reached out to cattle and hay producers within two miles of the study area. The team established a landowner roundtable and hosted a targeted dinner event for their neighbors. More than 60 people attended, resulting in roughly 200 acres of native grass establishment for this planting season. The team will have a field day this summer and has set a 2,500 acre goal for the 10,000-acre target area.

**LOUISIANA** | With NBCI assistance, the Louisiana Department of Wildlife and Fisheries (LDWF) and the US Forest Service have agreed to develop and monitor a quail focal area in the Kisatchie National Forest (KNF) in western Louisiana. Although this same area, located in the Vernon Unit of KNF, has been a quail emphasis area since 2010, it has been expanded to 5,992 acres and established as an official NBCI Coordinated Implementation Program focal area. Work on the KNF-Vernon Quail Emphasis Area began in 2017 with bird and habitat monitoring. Bird monitoring continued in 2018 and 2019 as well, along with a number of prescribed habitat treatments. Extensive habitat work also continues on Sandy Hollow Wildlife Management Area (WMA), a 4,000-acre WMA in southeast Louisiana. This year, approximately 1,900 acres were burned, and an aggressive prescribed burning regime will continue. Approximately 1,500 acres will be treated with different methods of timber harvest over the next five years. Habitat improvements were completed on approximately 800 acres in 2018-19. With the help of the Atchafalaya Region Chapter of Quail Forever, a fallow field enhancement project has been launched. Collectively, these efforts are expected to improve bobwhite populations on the WMA as measured by annual summer and fall surveys.

**MARYLAND** | Several Maryland landowners have set an outstanding example for quail conservation efforts on private lands. The bobwhite population at Chino Farms (now called the River and Field Campus of Washington College) in Queen Anne's County was reduced to only a handful of birds following the severe winter of 2009-10. But thanks to their dedicated habitat management efforts on approximately 700 acres, the population has rebounded fully. Surveys documented nearly three whistling males per stop in the summer of 2018 and estimated 34 coveys present that fall. Another success story can be found on Chip and Sally Akridge's property in Talbot County. Although several hundred acres of habitat were present,

quail were rarely seen or heard for many years following the same severe winter. Efforts to maintain and restore critical habitat were ramped up, particularly prescribed burning. The population has exploded in the last three years, with many whistling males, broods, and coveys documented.

**MISSISSIPPI** | The Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) continues to emphasize active habitat management on wildlife management areas (WMAs), including timber thinning, prescribed burning, and other quail-friendly habitat enhancements. The MDWFP is also glad to have the expertise of Mark McConnell, a Bryan Endowed Assistant Professor of Upland Bird and Prairie Management at Mississippi State University (MSU). The MDWFP has had a long-standing history of cooperative work with MSU, and the agency expects collaborative opportunities for quail and other upland gamebird conservation and management.

**MISSOURI** | The Missouri Department of Conservation (MDC) recently completed a review of the quail program utilizing information from the State Wildlife Action Planning (SWAP) process, the Biologist's Ranking Information (BRI) process of NBCI 2.0, data from monitoring and research, and staff input. Sixteen Quail Restoration Landscapes (QRLs) were identified, representing the best places for the deployment of agency and partner resources to achieve quail restoration on a landscape scale. This year, staff is identifying population objectives for managed public and private lands within each of the geographies. The MDC is also in the process of developing a Quail Communication Plan to raise awareness



*Cattle grazing on Stony Point Prairie, a 960-acre remnant prairie managed for quail and grassland birds. Photo by MDC.*



for the need of habitat improvement not only for quail populations, but also pollinators, grassland songbirds, and numerous ecological services. Both of Missouri’s NBCI Coordinated Implementation Program (CIP) focal areas documented quail populations at or above 1 bird/2 acres. The 2C CIP focal area recorded quail numbers at 1 bird/acre for the second consecutive year, while the Bee Ridge CIP focal area recorded slightly more than 1 bird/2 acres.



**NEBRASKA** | In 2015, Nebraska—along with Kansas, Iowa, and Missouri—joined the Grassland Bird and Grazing Land Enhancement Initiative, a Regional Conservation Partnership Program (RCPP). Through the Environmental Quality Incentives Program, Nebraska was awarded \$1,125,000 for financial and technical assistance to promote rangeland health and habitat management for the benefit of bobwhites and other grassland birds. Project partners include the Nebraska Game and Parks Commission, Pheasants Forever/Quail Forever, Audubon Nebraska, Nebraska Environmental Trust, and the USDA Natural Resources Conservation Service. Brush management (eastern red cedar removal), prescribed fire, grazing infrastructure, and early successional habitat management have been popular practices implemented through the RCPP initiative. Nebraska also has a Conservation Reserve Program State Acres for Wildlife Enhancement project targeted at providing high quality habitat for bobwhites. The project began in 2008, and 86,060 acres are currently enrolled. Biologists work with landowners to develop specific habitat plans and seeding mixtures that provide all of the essential bobwhite habitat components (e.g. nesting, brood-rearing, winter, and escape cover), taking into consideration the existing habitat elements within the local landscape.



**NEW JERSEY** | Following the formal 2017 New Jersey Bobwhite Recovery Plan, a site ranking criteria was developed with partners to determine a possible translocation site within the state. Data was collected in various metrics, including; NBCI Coordinated Implementation Program (CIP) habitat monitoring, surrogate species, predator abundance, arthropod abundance/diversity, landscape connectivity, site connectivity, funding, public access, small game hunting, habitat management plan, proximity to semi-wild/commercial shooting preserves, and conspecifics. Results are under review.



**NORTH CAROLINA** | A graduate student at North Carolina State University (NCSU) under the advisement of Drs. Chris Moorman and Chris DePerno has completed research into northern bobwhite non-breeding habitat selection. Bobwhite were captured during winters of 2016, 2017, and 2018 at Fort Bragg Military Installation in the Sandhills region and fitted with radio transmitters. They were tracked January-April, and vegetation data were collected at bobwhite telemetry locations and at random locations throughout the study area. Woody understory cover was greater at telemetry locations than at random locations, indicating selection for woody understory that provided critical escape and thermal cover for bobwhite. Similarly, site characteristics that reduce woody understory cover, including high basal area or recent fire, were negatively associated with bobwhite selection, especially in upland areas on the study area. Researchers suggested that habitat management for northern bobwhite target basal areas below 10 m<sup>2</sup>/ha (43 ft<sup>2</sup>/ac), with the caveat that greater basal area is more acceptable in areas with greater soil productivity. Also, researchers recommend that prescribed fire be applied on a three-year return interval, or variations around this mean.



*Northern bobwhite captured and monitored during research on non-breeding habitat selection. Photo by NCSU.*



**OHIO** | The Ohio Department of Natural Resources has designated the Crown City Wildlife Area in Gallia and Lawrence counties as its next quail focus area. Because of its location in southeast Ohio (Appalachian foothills) and lack of nearby quail reference populations, it will not be a NBCI Coordinated Implementation Program (CIP) focal area. However, Ohio plans to follow the CIP monitoring protocols. Spring surveys were underway this May, and habitat assessments are planned for later this summer. The 11,119-acre public wildlife area is composed of



approximately two-thirds hardwood forest and one-third grasslands and shrub land habitats on former surface mines.



**OKLAHOMA** | Annual roadside surveys indicate that Oklahoma's bobwhite population was lower than the 2017-18 season, and below the 10-year average for the state. Weather conditions this winter created a perfect storm of difficult hunting conditions. Production during the summer of 2018 was about average across the state, however, weather conditions such as drought or high rainfall, depending on the region, subsequently caused quail populations to respond negatively. All regions of Oklahoma showed decreased numbers in the roadside surveys. However, a mild winter and wet spring appear to set Oklahoma for a solid year of quail hunting. The Oklahoma Department of Wildlife Conservation continues to monitor the Cross Timbers NBCI Coordinated Implementation Program Focal Area and a reference area. Management during this past year consisted of seasonal grazing and prescribed burning in units that were due to be burned this year based on the fire return interval plan, and efforts seem promising for bobwhite habitat restoration there as well as on adjacent lands.



**PENNSYLVANIA** | This marks the third year of intense habitat management efforts to bring back bobwhite quail to Pennsylvania. Although wild bobwhites were deemed extirpated in 2014, managers within the state are working to first restore habitat and then follow with wild quail translocations. This effort has been a partnership from the beginning with the Pennsylvania Game Commission, Letterkenny Army Depot, Quail Forever, and a host of universities, NGOs, and private individuals. Pennsylvania's first Bobwhite Quail Focus Area (BQFA) is located at Letterkenny Army Depot and is 3,680 acres. Historically, the surrounding area and the depot itself have had some of the highest quail densities recorded. Sadly, through agricultural practices, development and succession, quail habitat was lost statewide. To date, over 1,200 acres of prescribed fire have been implemented as well as 400+ acres of overstory removal within the BQFA since 2017. Additional management such as disking, herbicide application, and shrub planting continues to bring this area closer to quality quail habitat. Managers have begun working with partner states and looking forward to future translocation once habitat restoration has been completed. Through nationwide collaboration, there is

great anticipation to restore this native species, not only to the Keystone state, but to their historic northern range.



*The Cumberland Valley Chapter of Pheasants Forever donated a large offset disc to the BQFA. Photo by Letterkenny Army Depot.*



**SOUTH CAROLINA** | The South Carolina Bobwhite Initiative's four focal areas are nearly three years old, and the program has added a Farm Bill biologist to assist the two existing Farm Bill biologists and Quail Forever (QF) cooperating biologist in the state's bobwhite restoration efforts. The newly hired QF biologist focuses on the Southeastern Working Lands for Wildlife Project. The addition of a cooperating biologist will provide strong support to an area that has tremendous potential for bobwhite restoration. Additionally, NBCI staff, South Carolina Department of Natural Resources (SCDNR), South Carolina Department of Parks Recreation and Tourism, and QF have partnered with the National Park Service to recreate the historical landscape conditions present at the battle of Kings Mountain, which occurred on October 7, 1780. Thomas Jefferson called the battle "The turn of the



*South Carolina sunrise during a fall covey count. Photo by South Carolina Department of Natural Resources.*





tide of success,” and biologists here are hopeful that the habitat work at Kings Mountain National Military Park will be such a benefit that it becomes associated with the “turn of the tide of bobwhite success” in the state. Elsewhere, in the Lowcountry of South Carolina on the Francis Marion National Forest, a nearly 6,000-acre area has been set aside for bobwhite habitat work. The Lowcountry Quail Forever chapter worked with staff from the US Forest Service, SCDNR, NBCI, and Tall Timbers Research Station (Carolina Regional Quail Project) to identify an area to pursue the creation of optimal quail habitat, eventually settling on Prices Landing. Some habitat work has already been implemented.



**TENNESSEE** | It's been a busy year for Tennessee's quail program, despite the strain that Chronic Wasting Disease has put on staff time and resources. The Tennessee Wildlife Resources Agency (TWRA) Bobwhite Restoration Team is nearing completion of a new and improved quail plan and will be conducting a stakeholder meeting on the plan. Field work is continuing on Tennessee's first NBCI Coordinated Implementation Program (CIP) focal area at Wolf River Wildlife Management Area, including habitat improvements and the state's first harvest survey for small game in many years.



*TWRA hosted a field tour on Wolf River WMA for officers of the Music City Chapter of Safari Club International. Photo by NBCI.*

**TEXAS** | At the Matador Wildlife Management Area (WMA), one of Texas Parks and Wildlife's (TPWD) most popular quail hunting destinations, TPWD is partnering with the Playa Lakes Joint Venture to assess the effects of 10 years of mesquite management. Thirty monitoring grids have been selected within the WMA, evaluating quail and grassland bird response to herbicide applications and

*Pre- and post-treatment of encroaching mesquite on Matador WMA. Photo by TPWD.*

prescribed burning. Post-treatment monitoring is a critical need within the conservation community, and time and resources are often not available for long-term monitoring. But with funding for mesquite management coming from annual Pittman-Robertson grants and organizations like Quail Forever, this monitoring helps tie those efforts to tangible benefits for sportsmen and recreational birders alike.

**VIRGINIA** | Virginia's quail hunters, though small in number reporting, had their best year in over a decade. Twenty-six of the state's avid quail hunters reported on 411 hunts. They found 703 coveys of quail, averaging 1.7 coveys per hunt. They averaged finding a covey every 1.9 hours, which, while not great, was substantially better than the trend over the last decade. Also of note, hunters averaged killing only one quail per covey found, indicating a voluntary conservative harvest. Virginia's private lands wildlife biologist team made 4,573 site visits to landowners who collectively own over 509,879 acres over the past nine years. This year, the private lands wildlife



biologist positions are being incorporated as full-time permanent positions within the Virginia Department of Game and Inland Fisheries (VDGIF), while still maintaining the working agreement and partnership with NRCS. In partnership with the National Park Service and Virginia Working Landscapes, the state added its second NBCI Coordinated Implementation Program (CIP) Focal Area at Manassas National Battlefield Park. The area represents an opportunity to conserve quail in a region where they have largely disappeared. Work continues on the state's first CIP Focal Area, the Piney Grove/Big Woods complex, where fall covey counts were higher than in any of the previous five years of monitoring. The Virginia team also received a National Wild Turkey Federation Superfund Grant to do substantial renovation of logging decks within the CIP focal area in order to increase plant diversity and provide bugging/brood-rearing habitat.



*Private Lands and State Biologists examine a successful planting of maximilian sunflowers. Photo by VDGIF.*

**WEST VIRGINIA** | The West Virginia Division of Natural Resources (WVDNR) continues to move forward with their early successional habitat management goals by adding a fourth year to their young forest initiative. Originally planned to end summer 2019, available funds provided the opportunity to continue for an additional year. Although most efforts focus on creating young forest for grouse, turkey, and songbirds, they also include efforts to enhance habitat for bobwhite. The Tomblin Wildlife Management Area (WMA) was administratively selected in 2018 to focus the WVDNR's bobwhite habitat enhancement and restoration efforts. The Tomblin WMA is 25,000 acres in varying stages of surface mining and reclamation and is, coincidentally, the state's elk restoration site. General management plans were developed specifically for bobwhite restoration and should be conducive to elk restoration efforts as well. Site specific plans for Tomblin WMA continue to be developed as each site is objectively evaluated. Breeding bird survey points were established in the spring of 2018, with the first surveys being conducted this spring. This first full-time wildlife manager for the area was hired this spring, and much of the necessary management equipment has been purchased. The WVDNR staff continue to conduct game bird brood surveys statewide, which includes bobwhite observations. Only a couple of bobwhite, if any, are reported annually.



# 2019 NBCI Fire Bird Conservation Awards

Once again, the various ways to support landscape-scale restoration of wild bobwhite quail were on display recently at the 2019 National Bobwhite Conservation Initiative's (NBCI) National Fire Bird Awards ceremony in Carbondale, IL.

The award represents the historic and continuing reliance of bobwhites on fire in much of its range to maintain the landscape in the appropriate plant successional or structural stage—that is, in the native grasses, wildflowers, and broad-leaved plants that provide bobwhites with suitable habitat. Both naturally occurring fires and those intentionally set by Native Americans and landowners to clear farm fields and improve game populations have historically resulted in abundant habitat for bobwhites, as well as other wildlife. The term “fire bird” in relation to bobwhites was first coined by naturalist Herbert Stoddard, who researched bobwhites and worked to restore bobwhite habitat in the early 20th century.

Today, prescribed fire under controlled conditions by trained professionals has become an increasingly important tool for helping create and manage habitat for bobwhites, as well as a suite of songbirds and other wildlife that require early successional habitat to survive.

Award recipients are chosen by the respective NBCI-member state's quail coordinator for their contributions to that state's efforts toward habitat-based restoration of wild bobwhite populations. The awards are announced by the NBCI at the annual meeting of the National Bobwhite Technical Committee, which was in Carbondale, IL, this year. Occasionally, the NBCI director will issue special recognition in the form of the NBCI Director's Fire Bird Award.

“We continue to provide an avenue to recognize and thank those making meaningful contributions to our science-based restoration agenda, and perhaps help encourage others to join our efforts and those of others in the future,” said NBCI Director Don McKenzie. “We continue to need as many individuals, agencies, and organizations as possible actively contributing to this unified 25-state strategy.”

## Arkansas

Since his hiring as the state's first prescribed fire manager in 2014, **Randy Brents** has overseen more than 184,000 acres of prescribed fire statewide, with 9,256 acres within designated quail emphasis areas in the state. While not physically implementing every acre personally, he oversees the agency's prescribed fire planning and implementation procedures statewide, including providing standardized procedures, direction, and guidance for the planning and implementation of prescribed fire on all agency lands, including new guidelines for minimum training, minimum necessary experience, and health standards for those employees participating in the prescribed burn program. His partnerships include being the Arkansas representative for the Southern Fire Exchange, a member of and instructor for the Arkansas Wildland Fire Academy, a member of the Arkansas Game and Fish Commission's Quail Team, and an integral part of the restoration and management teams of the state's seven quail focal areas.

“Randy's been a driving force in the shift from solely dormant season prescribed burns to a burn season that mimics historical fire patterns... and is a great asset to the habitat program, the wildlife management division, the agency, and the wildlife of Arkansas,” said Marcus Asher, state quail coordinator.

## Delaware

Prior to **Brenna Ness'** hiring in 2016, Delaware Wild Lands—a land trust that owns and protects over 21,000 acres of land in the state ([www.dewildlands.org](http://www.dewildlands.org))—had no land steward/conservation programs manager for its properties in New Castle County. Ness is tasked with managing thousands of acres across the county, but focuses on quail management activities on those areas adjacent to Delaware's NBCI Coordinated Implementation Program (CIP) focal area, burning 200-







*Brenna Ness*

250 acres of saltmarsh and upland early successional habitats to control woody and exotic/invasive vegetation and to promote native forbs and warm-season grasses. She converted 16 acres of exotics to native wildflowers on three properties and will convert 30 more acres this fall.

To combat erosion and improve water quality, Ness installed grassed waterways with native grasses and forbs that will provide habitat for quail and other grassland birds. She recently standardized all the organization's agricultural crop leases to require field buffers, especially those adjacent to water resources. She also engaged Delaware Wild Land's hunters and farmers to develop a strategic mowing plan that will promote winter cover for wildlife. In 2017, Ness initiated fall covey counts on her areas and initiated their first spring breeding bird survey following the NBCI CIP protocol for monitoring bobwhites this spring.

"This is important for internally comparing data within the state and for the potential future inclusion of some of Delaware Wild Lands tracts in Delaware's CIP focal area," said Justyn Foth, the state's quail coordinator.

## Kansas

**John Johnson** has had an impact far beyond his management of a single wildlife area. Johnson's work as a contract habitat specialist at Fall River Wildlife Area led to responsibility for the nearby 3,000-acre Woodson Wildlife Area in 2012, which straddles the transition from the Cross Timbers to the Flint Hills. Consequently, the western half is open prairie and the eastern half is dominated by post and black jack oaks, presenting two different habitat types to manage. He found a funding partner and began oak savanna restoration, including thinning, glades creation, and installing permanent firebreaks, which allowed the woods to be burned in smaller, separate plots. Invasive trees have been aggressively removed from the rangelands, and the burning and grazing rotations were redesigned so the timing of fire (spring/summer/fall) and the timing and intensity of grazing pressure is constantly changing to maximize habitat diversity. Johnson established habitat and bird monitoring (including fall covey counts) and utilization exclusion devices within grazing units to monitor pasture utilization rates. Extensive plant surveys track plant diversity changes across the area.



*John Johnson (right)*

Johnson has expanded the footprint of management beyond the wildlife area by hosting multiple field days and presented many programs to not only department personnel but also to private landowners, noxious weed directors, and various professional meetings.

"With his background in range management, he speaks the language of the ranchers and has influenced many local land managers to adopt more quail and wildlife-friendly practices on their own ground," said Jeff Prendergast, the state's quail coordinator. "He has been able to do this by demonstrating how the rest rotations that increased diversity for birds are also improving the producer's bottom line, effecting landscape-level changes."

## Kentucky

In 2008, Kentucky released the voluntary Bobwhite Specialty License Plate to the state's drivers. Ten dollars of the initial and renewal registration becomes a donation for bobwhite projects. The board (**Richard Hines, Dave Howell, Mac McCay Jack Porter, and Ed Shuman**) reviews grants for these projects annually and makes decisions on which to fund up



to \$5,000. To date, the board has funded more than 50 projects totaling nearly \$250,000, including seed programs with landowners, research on Peabody Wildlife Management Area and Bluegrass Army Depot, Livingston National Bobwhite Focus Area, Shaker Village, and most recently, two vehicle wraps for department trucks (photo on Page 8).

“The **Kentucky Bobwhite Specialty License Plate Board** has been pivotal in funding projects that leverage other funds,” said John Morgan, state quail coordinator. “The board is progressive and supports bold ideas, highlighted by funding projects that benefit bobwhites through marketing and public relations efforts of the Kentucky Department of Fish and Wildlife Resources. Each board member spends countless hours sorting through grant applications and awarding funds to deserving efforts on a volunteer basis. No other non-profit in the state has contributed more directed funding to bobwhite projects outlined in the state’s Bobwhite Restoration Plan than the license plate, contributing \$30,000 annually to projects, most which fall directly in line with NBCI principles. Their vision, leadership, and volunteerism embody the spirit of the Fire Bird Award.”

## Missouri

**Rick Rath** is a private lands conservationist with the Missouri Department of Conservation and is responsible for the Sac River District of Cedar, Dade, and Lawrence counties. The geography is dominated by grassland and woodlands. Most of the grassland is in very poor condition, comprised of continuously grazed fescue. His district also encompasses thousands of acres of Missouri’s priority grassland conservation opportunity areas and parts of the 2 Quail Restoration Landscapes, the goal of which is to restore native grasslands and provide early successional grassland habitat, says David Hoover, the state’s quail coordinator.

Rath began knocking on doors, finding key landowners in his district and winning their trust. Rath explains the benefits of using native vegetation and proper grazing systems, then demonstrates them on his own farm where he and his family live. He has mastered the intricacies of Farm Bill programs and how they can help landowners achieve their goals. Rath conducted 235 farm visits over the past year, resulting in 44 LAP (state cost-share program) agreements totaling nearly \$80,000, 28 EQIP and RCPP contracts totaling over \$503,000, two landowners awarded Audubon Prairie Bird Initiative funding of over \$23,000, and three landowners with US Fish and Wildlife Service Partner projects totaling nearly \$19,000.

“These impressive results came from knocking on doors, working odd hours, answering the phone on weekends and evenings, holding multiple workshops, highlighting landowners employing great habitat practices, and being vested in his community,” said Hoover. “Rick’s work with multiple landowners converting fescue to native grasses and forbs, prescribed burning, the development of bird-friendly grazing systems, deferred haying, and exotic species removal has resulted in positive changes at a landscape-scale that are a model for other staff that work with private landowners.”



Dave Hoover (left) and Rick Rath (right)

## Oklahoma (in memoriam)

Although **Alva Gregory** passed on May 1, 2019, at age 55, Tell Judkins, the state’s quail coordinator, said “northwestern Oklahoma lost one of its greatest wildlife warriors and it’s important for all, including his family, to know that the lands impacted by his efforts will live on for years to come.”

Gregory worked for the Oklahoma Department of Wildlife Conservation for 31 years and was previously recognized as Wildlife Technician of the Year in 2017, Habitat Coordinator of the Year in 2013, and received the Oklahoma Chapter of the Wildlife Society’s Oklahoma Award for his contributions to wildlife management in 2018. He worked at Beaver River







*Alva Gregory*

Wildlife Management Area (WMA), Packsaddle WMA, and finally in the Woodward office as the Northwestern Oklahoma Habitat Coordinator, building relationships with landowners that allowed habitat improvement for numerous grassland birds, and working to promote the reconnection of upland bird species to the landscape in agricultural and cattle production.

In 2018 alone, Alva met with more than 37 landowners in 16 counties for an impact on more than 45,400 acres, presented to the Natural Resources Conservation Service, US Fish and Wildlife Service, National Wild Turkey Federation, Dewey County Commission, the Northwest Cattlemen's Association, and he assisted with field days by Oklahoma State University's Extension Office.

"Northwestern Oklahoma is known by many as true quail country, but without the influence of Alva Gregory, I'm not sure that would be the case," said Judkins. "I often tell people if you see a property in northwest Oklahoma that has no cedar trees, you have Alva to thank for it."

## ***Pennsylvania***

The chief of the Wildland Fire Logistics and Training Division for the Pennsylvania Game Commission, **John Wakefield** has been an avid supporter of the state's quail restoration efforts from the beginning. Understanding that prescribed fire would play a crucial role, both during habitat establishment and maintenance over the long term, Wakefield took the lead on fire planning and development for the first bobwhite focus area—Letterkenny Army Depot.

"Trying to convince senior staff of a military installation to put fire over hundreds of thousands of pounds of missiles and bombs to manage habitat is not an easy sell," said Thomas Keller, state quail coordinator. Wakefield answered questions, worked with everyone involved, and coordinated a test fire over an empty underground storage container to demonstrate to the depot manager the safety and control with which fire could be conducted. He helped develop a solid burn plan and began coordinating prescribed burns, keeping everyone involved and engaged, according to Keller.

"From a biologist's point of view, John has been fantastic to work closely with as he is open and interested in how we can tailor fire to assist quail management on a detailed scale, focusing more on quality than quantity," said Keller. While Wakefield oversees a burn program that conducts more than 10,000 acres of prescribed fire annually, he has always made the Letterkenny project a priority, personally acting as "burn boss" for every fire.



*John Wakefield*

## ***South Carolina***

In the early 2000s, a group of concerned agencies discussed the possibility of creating more and better habitat for grassland birds. The Indian Creek project gathered steam, successfully integrating public and private lands. When it came to choosing an NBCI Coordinated Implementation Program (NBCI CIP) focal area, it was a natural fit. In the last year, however, the **Enoree Ranger District of Sumter National Forest** adopted several practices that have proven quite beneficial to bobwhites.

For instance, small burn blocks are often not feasible for an agency that has to manage thousands of acres, however, the



Enoree District was willing to try 50-100-acre burn blocks with the CIP focal area. The experiment was a success, proving not only beneficial to bobwhites with premium habitat creation, but also providing the district more opportunity to burn because they could burn smaller blocks when conditions would not allow larger burns.

The district is also proactive in identifying partners to assist with other management issues. Within the last year, the US Forest Service signed agreements enabling the Enoree Ranger District to work with state agencies to decrease the time it takes to perform timber harvests. Agreements include Good Neighbor Authority agreement with the South Carolina Forestry Commission and the South Carolina Department of Natural Resources, as well as a stewardship agreement with the latter agency.

Finally, the district initiated a solution to one of the traditional issues in quail management, connectivity. Systematic timber harvests are proposed to connect several areas managed for open pineland, grassland birds, and prairie, connecting the Indian Creek Focal area to other large, open land habitat areas and creating a landscape-level change. The required amendment process to their resource management plan is underway.

## Tennessee



*Don Hodges (UT), Roger Applegate, Kyle Brazil, and Pat Keyser (UT)*

University of Tennessee (UT) PhD candidate **Kyle Brazil** designed the state's sole NBCI Coordinated Implementation Program (NBCI CIP) focal area at Wolf River Wildlife Management Area (WMA) over the past year. Brazil supervised the technicians that collected the required data and entered the data into the NBCI system.

"The CIP is an important step toward restoration of quail in Tennessee because it now puts some true focus on the species," said Roger Applegate, state quail coordinator. "We would not have a CIP without Kyle. The CIP has already generated funding interest both inside and outside the agency, and it is now a model for how we should approach WMA management."

## Virginia

One of the biggest proponents of prescribed fire in Virginia, **The Nature Conservancy (TNC)** has promoted and hosted numerous workshops, played key roles in the Department of Forestry's coordinated annual fire academy, mentored new fire practitioners for numerous partners, assisted multiple partners in managing multiple thousands of acres of pine savanna with prescribed fire, and acquired 3,200 acres to establish Piney Grove Preserve, which is Virginia's largest block of pine savanna habitat and home to an expanding red-cockaded woodpecker population in southeastern Virginia. Additionally, they provided financial support for the state purchase of 15,000 acres of land for longleaf pine restoration, they assist with establishing and managing of the largest privately-owned longleaf pine tract in Virginia, and staff serve as leaders in the inter-agency Longleaf Cooperators of Virginia.

TNC has partnered with the Virginia Department of Game and Inland Fisheries (VDGIF) and the Virginia Department of Forestry (VDOT) to manage Virginia's Big Woods/Piney Grove NBCI Coordinated Implementation Program (NBCI CIP) focal area (which consists of TNC's Piney Grove Preserve, VDGIF's Big Woods Wildlife Management Area, and the Department of Forestry's Big Woods State Forest). TNC has embraced the CIP, actively participating in monitoring—which shows the quail population increasing—and expanding the use of prescribed fire and other management techniques on the area each year.





## NBCI Director's Fire Bird Award

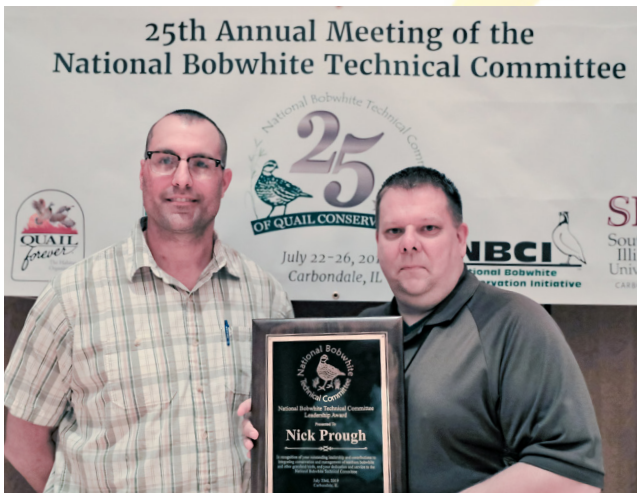
NBCI Director Don McKenzie recognized NBCI staffers **Tom Franklin** (Agriculture Liaison) and **Jef Hodges** (Grasslands Coordinator) for their respective roles in having native vegetation language placed in the Conference Report of the 2018 Farm Bill:

*"The Managers recognize the benefits of native vegetation to improve water and air quality and enhance soil health. By encouraging the adoption of native vegetation seed blends, USDA programs are supporting habitat restoration for the northern bobwhite, lesser prairie-chicken, greater sage-grouse, other upland game birds, songbirds, monarch butterflies, and pollinators. The Managers encourage the use of native vegetation where practicable."*



Jef Hodges (left), Don McKenzie (center), and Tom Franklin (right)

## 2019 NBTC Leadership Award



John Morgan (left) presents the NBTC Leadership Award to Nick Prough (right).

The National Bobwhite Technical Committee (NBTC) presented **Nick Prough**, chief wildlife biologist with the Quail and Upland Wildlife Federation, its Leadership Award at the group's annual meeting in Carbondale, IL.

The award recognizes an NBTC member that exemplifies leadership, productivity, and professionalism in advancing the National Bobwhite Conservation Initiative (NBCI) as demonstrated within the previous three years prior to the nomination.

Prough's work with the group dates to the early 2000s as a young private lands biologist developing land management plans to help Missouri landowners restore bobwhites. His efforts resulted in one of the first counties in the nation to reach the NBCI 1.0 habitat and bird goals. He turned to the non-profit world where he excelled at working with members, landowners, and partners, helping build a new non-profit solely centered on "turning the dirt" under a multi-species brand called the Quail and Upland Wildlife Federation.

"Over the last three years as a member of NBTC, his expertise and leadership were demonstrated on the NBTC Steering Committee and, most importantly, the Grasslands Subcommittee," said John Morgan, chair of the awards committee. "Under his leadership, products and collaboration flourished. He shepherded the balance between rangelands and pasture interests, which has always been a challenge. Relevancy and proactive application of the products were his core tenets. Some of the committee's latest work centered on grazing publications for the east and the west that outline bobwhite-friendly management. What could stand as one of the NBTC's most impactful accomplishments was initiated during his tenure. He was a critical part of the *Natives First* team championing support from partners, garnering political support, initiating grassroots activism, and offering guidance along the way. The NBTC just wouldn't be the same without him."







# *In Tennessee's State Park System, Seven Islands Stands Out for Birders*

*Especially for Bobwhite and Grassland Bird Enthusiasts*

**John Doty** | *NBCI Communications Director*

Collectively, the Tennessee State Parks system has a lot to crow about. It's one of only two in the nation to receive accreditation from the Commission for Accreditation of Park and Recreation Agencies (Arizona being the other), it was one of four finalists for the 2019 National Gold Medal Awards for Excellence in Park and Recreation Management (along with Florida, Maryland, and Washington State), and it's one of only seven systems in the nation with no admission fee.

Tennessee's 56 state parks range from 19-acre Bicentennial Capitol Mall State Park in Nashville to the 34,310-acre Justin P. Wilson Cumberland Trail State Park that stretches across seven counties. But there is only one "birding park." And for birders, especially bobwhite and grassland bird enthusiasts, the 416-acre Seven Islands State Birding Park near Knoxville may top the list. Not only is it the only birding-specific park in the system, it's managed with the bobwhite as the umbrella or indicator species. And it may be one of the easier-to-access locations to create an interface between the species and the seemingly growing number of individuals who have no idea what a bobwhite quail is.

And the bobwhite population appears to be growing, or at least its use of the park is growing. Actually, more than 204 species of birds have been recorded at Seven Islands, including dickcissels, grasshopper sparrows, Henslow's sparrows and loggerhead shrikes. (For a complete list, go to [www.tnstateparks.com/assets/pdf/additional-content/Birds\\_of\\_Seven\\_Islands.pdf](http://www.tnstateparks.com/assets/pdf/additional-content/Birds_of_Seven_Islands.pdf).)

*Wild Yards Garden at the entrance of the park serves to teach visitors about the importance and beauty of using native plants in our home landscapes. Photo by Bailey Smith.*



Located 19 miles east of Knoxville and cradled by the historic French Broad River, the park is just 15 miles from I-40 Exit 402. And that exit is just west of Exit 407, the major feeder route to Pigeon Forge/Gatlinburg and the Great Smoky Mountains National Park, the most visited national park in the country. So visitation potential is significant, given proper marketing strategies. Seven Islands currently attracts over 100,000 visits a year.

According to Park Manager Justine Cucchiara, the lands comprising the Seven Islands State Birding Park were acquired in 2002 as a wildlife refuge through a cooperative effort of the Seven Islands Foundation, Legacy Parks Foundation, and the Knox County Parks and Recreation Department. The vision, goals, and objectives of the Seven Islands Foundation included its preservation of this property as a wildlife sanctuary and refuge. The conservation easement is held by Legacy Parks Foundation and the Foothills Land Conservancy.

"The first manager at Seven Islands Wildlife Refuge was Wayne Schacher. He was instrumental in converting the cattle farm to native warm-season grass (NWSG)

habitat and worked with Craig Harper at the University of Tennessee when they were first establishing the NWSG fields," Cucchiara said. (For an early video of Schacher explaining management efforts, visit [www.bringbackbobwhites.org/2015/07/31/habitat-enhancement-efforts-at-seven-islands-wildlife-refuge](http://www.bringbackbobwhites.org/2015/07/31/habitat-enhancement-efforts-at-seven-islands-wildlife-refuge).)

The fields were originally planted for native grass forage research using huge amounts of seed. "We still have overstocked fields and we're trying to figure out how to manage them. We've deep-disked and inter-seeded," said Cucchiara, who is a University of Tennessee wildlife and fisheries science graduate. "Now we're going to smaller management plots. In the long run, they will be healthier and easier to manage using herbicides and/or disking. We basically have too much native grass and we need more forbs for diversity."

Still, bobwhites are there and appear to be expanding their range in the park. Average fall covey count estimates have gone from 5.3 in 2016 to 6.75 in 2017 to 9.75 in 2018 (see Page 23), offering evidence their range in the park has grown.



Bird banding volunteer Patty Ford with a bobwhite that was caught in a mist net. Photo by Justine Cucchiara.



Former Ranger Tyler Farrar and Seasonal Interpreter Stephanie Mueller get some help from Jr. Ranger Serena Mueller building steps in a steep section of the new Hickory Ridge Trail. Photo by Justine Cucchiara.





The park works with nearby University of Tennessee's Department of Forestry, Wildlife and Fisheries, especially the "applied management" classes, to help accomplish some of the management on the park, including transforming some "tree lines" into brushy hedgerows, conducting fall covey counts, cutting an upland walking/hiking trail, and understory removal in wooded areas to create a woodland savanna visible from the trail.

"The response by quail and woodpeckers was immediate. And the trail allows the public to compare managed woodlands versus unmanaged woodlands," Cucchiara said.

Current park efforts also include upgrading various visitor facilities, constructing an ADA-accessible trail/pedestrian bridge across a section of the French Broad River to a nearby island, constructing an observation platform on an upland pond, nesting boxes for ducks and songbirds, a native plants demonstration garden, and interpretive signage for visitors. Some of the funding for projects comes from the Friends of Seven Islands support group.

"We want to provide exceptional experiences for all birders," said Cucchiara. The park can also provide a glimpse of an iconic bird that may be rapidly fading from society's memory. For more information about Seven Islands, visit [www.tnstateparks.com/parks/info/seven-islands](http://www.tnstateparks.com/parks/info/seven-islands). If you are interested in supporting efforts at Seven Islands, consider joining Friends of Seven Islands: [www.friendsofsevenislands.com](http://www.friendsofsevenislands.com).

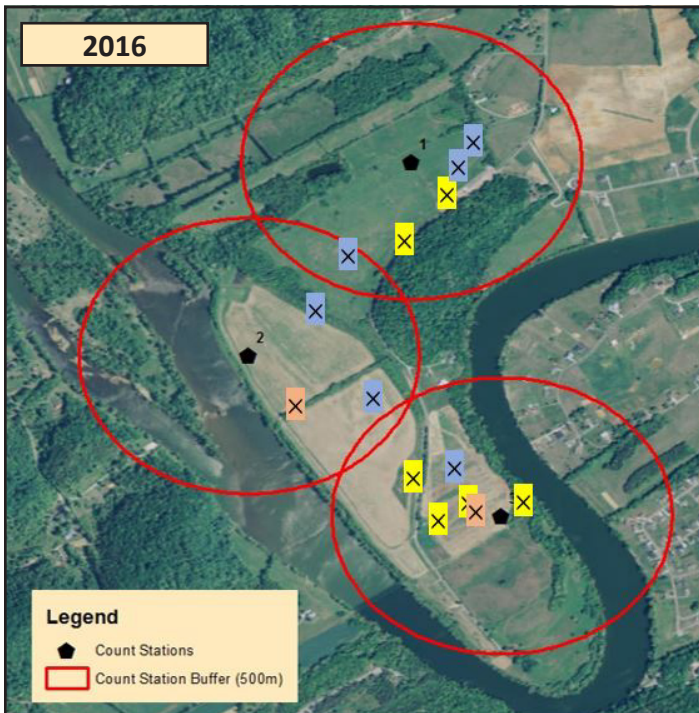


Post prescribed burn inspection, spring 2019. Photo by Jesse Germeraad.

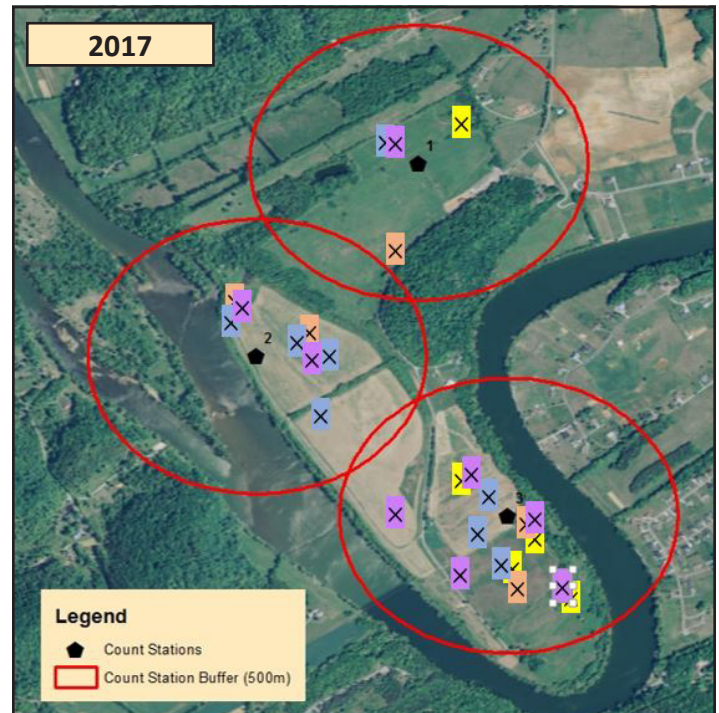


Tennessee State Parks staff Tim Pharis, Jesse Germeraad, Stephanie Mueller, Bailey Smith, and Nathaniel Housley (left to right) pause after a successful burn. Photo by Justine Cucchiara.

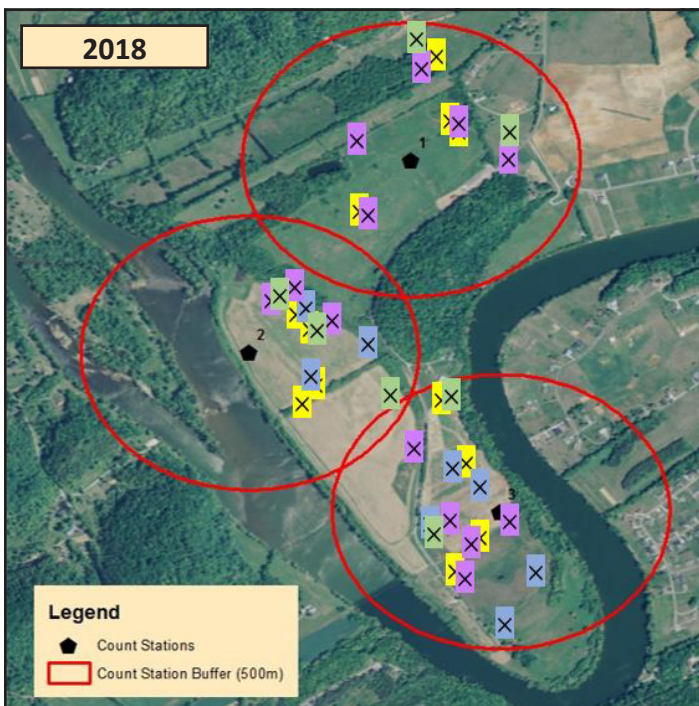




Date	# Coveys @ 1	# Coveys @ 2	# Coveys @ 3	TOTAL
10/28	2	0	4	6
11/4	0	2	2	4
11/6	3	2	1	6
Average # of coveys heard per survey				5.3



Date	# Coveys @ 1	# Coveys @ 2	# Coveys @ 3	TOTAL
9/26	1	0	4	6
10/3	1	2	3	6
10/17	1	5	3	9
10/25	1	2	4	7
Average # of coveys heard per survey				6.75



Date	# Coveys @ 1	# Coveys @ 2	# Coveys @ 3	TOTAL
10/4	4	4	4	12
10/18	0	3	5	7
10/25	5	3	5	13
10/30	2	3	2	7
Average # of coveys heard per survey				9.75

Fall covey counts were held the last several years from three listening points. The data from 2016-18 suggests that there are significantly more coveys in 2018 than 2017. While this doesn't necessarily mean there are more birds than previous years (there could simply be more coveys comprised of fewer birds), it does show that the birds' range of use in the park is expanding, which reflects positively on the habitat management being done in the park.





# Missouri's CIPs Maintain 'Hunttable' Bobwhite Population Goals

## One Sets Modern Record for State

John Doty | NBCI Communications Director

Missouri's Bee Ridge and 2C quail focal areas, both wholly comprised of private lands, are the first NBCI Coordinated Implementation Program (CIP) focal areas to achieve and maintain their objectives for bobwhite density—hunttable populations—for multiple years.

While the minimum density objective for participation in the NBCI program is 0.2 birds/acre required for sustaining a population over time, the program's minimum density objective for hunting is 0.5 per acre (one bird per two acres). The 5,574-acre Bee Ridge focal area achieved that, and the 5,242-acre 2C area has recorded almost a bird per acre (.91/acre) the last two years, according to results of NBCI-prescribed monitoring protocols. The latter figure is a 40-year record for population density in the "Show Me" state.

"Bottom line, both areas are doing better than almost anywhere in the state, whether public or private," said Dave Hoover, Missouri Department of Conservation (MDC). The areas are also performing better than the reference or control areas (Figure 1), with biologists noting quicker population recovery in the focal areas after severe weather.

Hoover said there are several factors contributing to the

areas' success. "We have landowners in those particular geographies specifically that value the presence of quail on their property and were willing to manage for them." Hoover said landowners did begin to ask questions about how they would know if their efforts were really successful.

"That's where the NBCI Coordinated Implementation Program, or CIP, came in for them," said Hoover. "It provides a standard protocol for monitoring used across the range that would give landowners, the public, and our own commission a measure of how populations have responded to management, what sort of results their efforts are producing, and how they compared to other efforts. Landowners liked that they could compare results of their efforts with efforts elsewhere and began selling the concept to each other. And their buy-in and commitment was, of course, critical since both areas are entirely privately owned."

Hoover said the private lands biologists attached to these areas also played a key role. "They integrated themselves in their communities and have shown local landowners they are truly dedicated to meeting their goals with no strings attached."



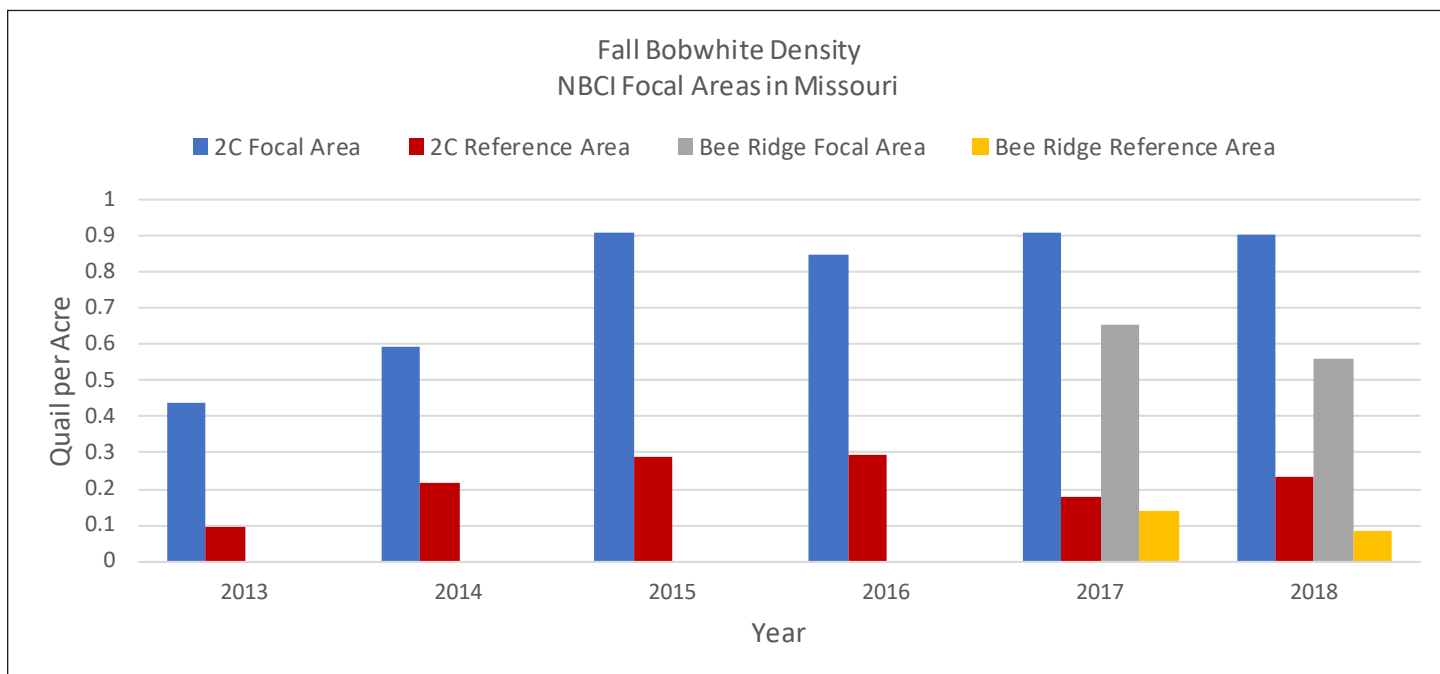
Example of establishing early successional shrubby transition zone. Photo by MDC.



Male bobwhite whistling from old edge feathering, a common elevated whistling site with predator protection. Photo by MDC.







Both areas also have dedicated Quail Forever chapters, “which has been very important in both focal areas with aggressive efforts to get habitat on the ground.”

Lastly, the Conservation Reserve Program, or CRP, was an integral component to the habitat development, and in some instances, may have been the most critically important component, according to Hoover. Available brood cover was the single most limiting factor, and CRP, when implemented and managed correctly, resolved that challenge.

“In 2C, whole field enrollment in practices such as State Acres for Wildlife (SAFE) and management was a key to success, and at Bee Ridge, the CP33 Conservation

Buffers were key elements. Combining abundant brood-rearing and nesting cover provided by these CRP practices with woody cover enhancement practices such as edge feathering and removal of large trees tipped the scale in favor of quail,” Hoover said.

Populations of monitored songbirds also increased on the CIP focal areas compared to the reference areas (see Page 40), as well as pollinators (which are not monitored). Hoover says the establishment and management of diverse native herbaceous habitat “has obvious benefits for bobwhites and is a game-changer for shrubland and grassland birds and pollinators.”

For an update on NBCI’s CIP, see story on Page 35.



CRP – CP-42 Pollinator planting Photo by Lee Metcalf, MDC.



Awards banquet presenting the 2016 Fire Bird Award to Lee Metcalf and the 2C Quail Forever Chapter Committee. Photo by the 2C Quail Forever Chapter Committee.



# Nebraska's 'Upland Slam' Attracting Others' Interest

## Showcases Upland Birds, Hunting Opportunities

John Doty | NBCI Communications Director

Jim Douglas isn't a lot different than any other wildlife management agency director when it comes to the proverbial R3 challenges—that is, Recruitment, Retention, and Reactivation—involved in stemming the declining numbers of hunters (and anglers) that affect an agency's budget and subsequent ability to do its job. But Nebraska Game and Parks (NGP) found a winner last year that even has other agencies inquiring. NGP's "Upland Slam" challenged hunters everywhere to bag all four of the Cornhusker State's primary species of upland game birds—northern bobwhites, ring-necked pheasants, sharp-tailed grouse, and greater prairie-chickens—in a single season. The first-year event attracted 267 hunters from 10 states who made 801 submissions. One hundred and forty hunters successfully completed the Slam with all four species.

A partnership with Pheasants Forever/Quail Forever provided successful Slam participants an official certificate and pin and an entry into a prize drawing. (The grand prize winner drew a Browning 12-gauge semiautomatic shotgun, another won a Pheasants Forever print, and a third won a 65-gallon Yeti cooler.)

Douglas said the harvest was about evenly distributed between public and private land, so the Slam helped highlight the state's good public access program as well as the variety of upland game birds the state offers. He also noted the program attracted a larger range of ages than most R3 programs, with participants ranging from 11 to 73 years old.

The program will enter its second year this season, and John Laux, NGP upland habitat and access program manager, said some adjustments will be made in this year's program that he believes will increase participation and submissions. For more information, official rules, and entry details, visit [www.outdoornebraska.gov/UplandSlam](http://www.outdoornebraska.gov/UplandSlam).

Nebraska thinks it's onto something, so watch for an announcement of the new Waterfowl Slam. "The biggest challenge has been choosing which species to include, given Nebraska's diverse waterfowl hunting opportunities," Douglas said.



CONSERVATION





# Working Lands for Wildlife 2.0

## Bobwhites in Pine Savanna Project Underway

Steve Chapman | NBCI Forestry Coordinator

In 2016, the Georgia Department of Natural Resources Wildlife Resources Division (GADNR WRD), Natural Resources Conservation Service (NRCS) staff, and the National Bobwhite Technical Committee Forestry Subcommittee proposed a state-driven Working Lands for Wildlife (WLFW) 2.0 partnership to the NRCS, focused on pine savanna restoration. The proposal was based on successful pilot projects in the Southeast and attracted strong support throughout the bobwhite range. Approved in late 2016, the program is now known as the WLFW Bobwhites in Pine Savanna project.

The program seeks to stem habitat loss and fragmentation—two of the biggest threats to bobwhites—by offering technical assistance to landowners interested in restoring pine savanna habitat on their property. If eligible, landowners can also get help navigating available cost-share programs. In addition to bobwhites, restoring this habitat type benefits many upland species, including rabbits, wild turkey, deer, and numerous songbirds. In fact, the management practices used to create and maintain the pine savanna habitat (i.e., prescribed burning, pine thinning, and planting native grasses) establish habitat for several at-risk species, as well. In the Eastern US, these include: pollinators, gopher tortoise, Henslow's sparrow, Bachman's sparrow, prairie warbler, pine snake, speckled kingsnake, pocket gopher, eastern indigo snake, red-cockaded woodpecker, and eastern diamondback rattlesnake. Aside from the benefits to wildlife, these types of land management practices improve water quality, reduce soil erosion, and can enhance local economies by stimulating quail hunting and wildlife viewing.

The priority landscape for the WLFW Bobwhites in Pine Savanna project currently covers over 64,000 acres across seven states—Alabama, Florida, Georgia, New Jersey, North Carolina, Virginia, and South Carolina. In addition to providing landowners with technical assistance, the project has provided the opportunity to train natural resource professionals in bobwhite habitat management. In the summer of 2018, NBCI, GADNR WRD, and the University of Georgia's Warnell School of Forestry and Natural Resources (UGA WSFNR) partnered together with funding from NRCS



*The first WLFW Bobwhites in Pine Savanna project training workshop was held in March 2019, in Orangeburg, SC. Photo by Jessica McGuire, Quail Forever.*

through Quail Forever (QF) to develop technical training workshops for natural resources staff from NRCS, state wildlife agencies, state forestry agencies, extension, and non-governmental organizations.

The first training workshop was held early this spring in Orangeburg, SC, and had approximately 60 participants, including staff from NRCS, Clemson Extension, South Carolina Department of Natural Resources, QF, GADNR WRD, UGA WSFNR, the Longleaf Alliance, and private landowners. This workshop consisted of a half-day of classroom-style instruction on bobwhite habitat management and the NRCS programs available to landowners, and a half-day field visit to a private forest landowner's property to see some on-the-ground pine savanna habitat management.

NBCI continues to work with NRCS, state partners, QF, and the UGA WSFNR in planning and sponsoring these workshops, and will hold one in each state in the project area. For more information about the WLFW Bobwhites in Pine Savanna project or its counterpart, WLFW Bobwhites in Grasslands, visit: [www.tiny.utk.edu/wlfw-bobwhites](http://www.tiny.utk.edu/wlfw-bobwhites).





# Prescribed Fire

## Extinguishing the Myths

Richard Hines



Photo by Jef Hodges, NBCI.

When people hear the word “fire,” many visualize destructive and uncontrolled wildfires like those recently occurring in California or the fire that broke out in 2016 in Great Smoky Mountains National Park. Although many people fear fire, negative attitudes about and opposition to *prescribed fire* may be decreasing. The [2018 National Prescribed Fire Use Survey Report](#) stated that 11.3 million acres were treated with prescribed fire in 2017, with the southeast leading the nation with 7.6 million acres burned. Additionally, prescribed fire councils grew by 40% since 2011 to a total of 35 councils in 31 states.

While precise reasons for the use of prescribed fire vary among regions, natural resource application of fire should mimic the historical fires that occurred across most ecosystems in the US (Figure 1). First and foremost, prescribed fire benefits numerous species of wildlife by maintaining their required habitat conditions. Additionally, professional land managers have used prescribed fire for decades to prepare planting sites, eliminate competition from non-desirable species, enhance regeneration, and maintain balance in unique ecosystems.

Though the use of prescribed fire continues to increase, myths remain which continue to restrict the benefits of fire management in some areas.

### **MYTH: PRESCRIBED FIRES ARE DESTRUCTIVE TO PLANTS AND WILDLIFE**

Opponents of prescribed fire may believe it destroys ground nesting birds, small mammals, and reptiles; however, many species are well adapted to periodic fires, which occurred naturally for thousands of years. Prescribed burns are designed to enhance habitat conditions and regeneration in ecosystems that require fire. In these systems, both plants and animals respond favorably to low intensity fires, which generally move slowly enough for animals to avoid the flames. In fact, a well-planned prescribed burn will leave certain areas unburned, providing refuge to wildlife in the area.

Many rare plants and plant communities are dependent on periodic fire, such as grassland prairies, pine and oak savannas, and canebrakes. When fire-adapted plant communities are left unburned, they become unusable by wildlife over time. Without fire, many species will simply disappear from the landscape—and in all cases, lack of routine fire will result in diminished population numbers.



### **MYTH: PRESCRIBED FIRES ARE AS DESTRUCTIVE AS WILDFIRES**

Prescribed fires are conducted under a prescribed set of circumstances to minimize undesired damages to plants, animals, or property. On the other end of the spectrum, wildfires occur when all conditions are considered extreme—high wind, high temperatures, low relative humidity, and low fuel moisture—creating a dangerous situation for both the public and professional firefighters. Prescribed fires are not ignited under such conditions.

Each year, destructive wildfires are covered by the media, while prescribed fire is applied to millions of acres of land across dozens of states without incident. The relative risk of an escaped fire or damage from a prescribed fire is very low. John Weir of Oklahoma State University compiled data from Prescribed Burn Associations in seven states. Using post-burn reports from 177 individual burns totaling 61,644 acres, 80% of the burns occurred without incident. Only 16% reported spotfires (fires that burned or started outside the fire line), and 75% of these were less than one acre. Only 3% reported an escaped fire, and not one of these led to any personal injury or property damage.

### **MYTH: PRESCRIBED FIRE CONTRIBUTES TO CLIMATE CHANGE**

The amount of smoke produced by a fire largely depends on the physical conditions present when the fire is ignited (i.e., weather conditions, fuel moisture, wind speed and direction, etc.). Prescribed fires are carefully planned by trained professionals who take into account the potential amount of smoke produced by a fire. The fire is ignited only if winds are favorable for transporting smoke off-site and away from major roads and populated

areas, as public health is a paramount concern.

Most smoke contains a mixture of dangerous chemicals, but these vary according to fire intensity and fuel makeup. As an example, nitrogen oxide is produced when fire exceeds 1,000-degrees, which is common in wildfires. Prescribed fires rarely reach temperatures capable of transporting nitrogen oxide into the atmosphere, because they are ignited when they can burn at a low intensity. Carbon is also released into the atmosphere during a fire. Due to the uncontrolled nature of a wildfire, more material is consumed at a higher rate, resulting in higher loads of particulate matter transported into the atmosphere. Implementing routine prescribed fires will produce less carbon over time, as compared to a single massive wildfire.

### **MYTH: WORKING WITH PRESCRIBED FIRE IS DANGEROUS**

The risk of injury or fatality to fire personnel working on prescribed fires is much lower than with other land management activities, and well below fighting wildfire. According to the National Wildfire Coordination Group Report on Firefighter Fatalities in the United States: 2007-2016, the leading cause of fatalities in wildfire fighting involves aircraft and vehicle accidents. Nationwide, thousands of low intensity prescribed fires are conducted each year without incident because of proper planning and the use of trained personnel.

### **MYTH: FIRE WILL DESTROY FENCES**

Some landowners have opposed use of prescribed fire because of the perception that heat from the fire would break down the galvanized fence coating, thus shortening the life of their fences. Wire fences that had been in use on rangeland for up

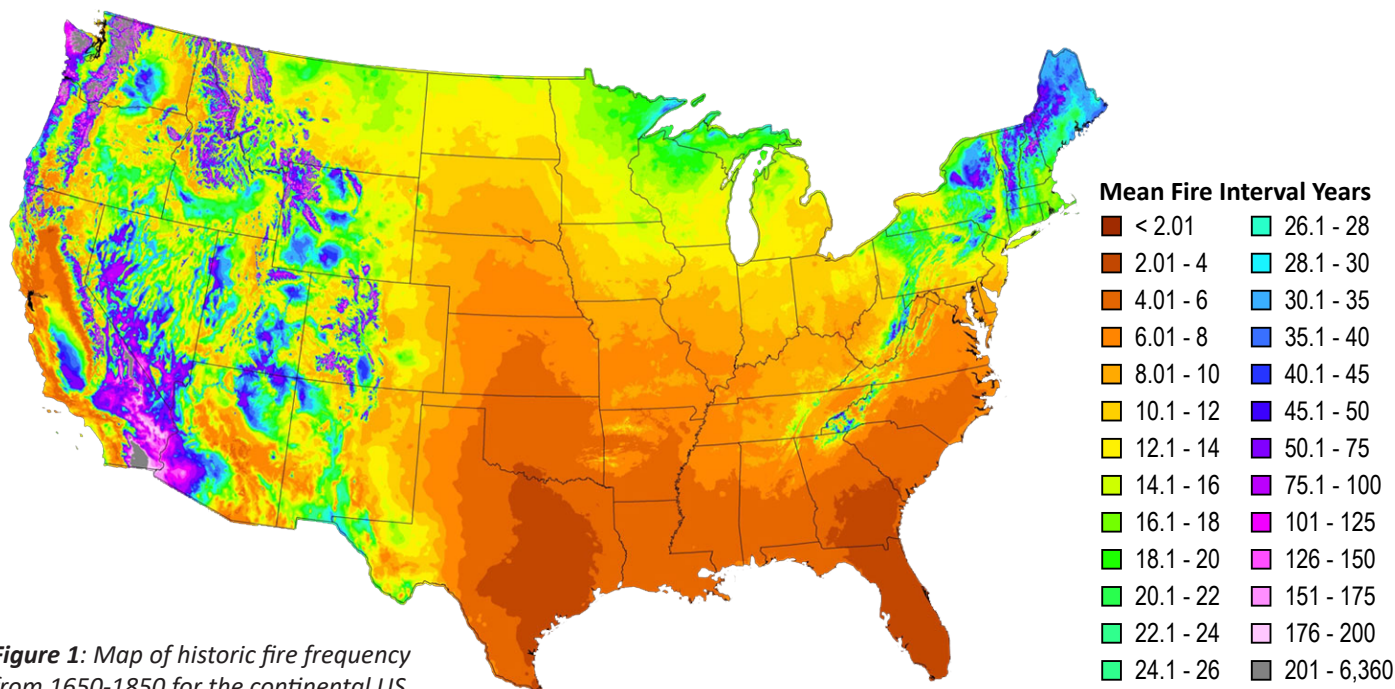
## *How do you plan a successful prescribed fire?*

Prescribed burns require a lot of planning. A burn plan (Figure 2) is crafted, fire breaks are installed, and the fire is only ignited under ideal conditions that will lead to a successful burn and will ensure the safety of the fire crew and the public. Factors considered when planning a prescribed burn include:

- Topography
- Fuel moisture
- Humidity
- Wind speed and direction
- Predicted weather conditions
- Ignition methods

The burn plan even takes into account the amount of smoke the fire will produce, where it will be transferred, and how it will affect the atmosphere and residents. All factors are considered prior to ignition, and if something doesn't align with the plan (i.e., weather conditions are not ideal), the fire is not ignited.





**Figure 1:** Map of historic fire frequency from 1650-1850 for the continental US, Guyette et al.

to 30 years were burned and later tested for strength. Regardless of the age of the wire fencing, the durability of the wire did not differ in breaking strength following the fires. Even fences that consisted of rusty wire did not break. A similar study investigating results of fire on metal T-posts found that posts were not affected by numerous prescribed fires over a period of several years.

#### **MYTH: FIRE DEGRADES TIMBER VALUE**

There is a long history of using prescribed fire as a management tool in pine forests, but fire has not been used as extensively in hardwoods due to the potential reduction of wood quality from fires that burn too intensely or are not properly timed, as with wildfire. Research has shown that prescribed fire promotes oak regeneration on sites with heavy competition from faster growing species. It also maintains sufficient sunlight to the forest floor, helping increase oak seedling survival at a time when oaks are disappearing from our forests.

#### **MYTH: ANYONE CAN CONDUCT A PRESCRIBED FIRE**

A wide variation in burning laws in each state creates obstacles to increasing the use of prescribed fire. Florida, for example, has a long history of using prescribed fire for natural resource management, allowing landowners to burn year-round (depending on weather conditions). On the other hand, some states may not explicitly ban prescribed fire, but they have more obstacles in place to limit when or how much a landowner is allowed to burn. West Virginia requires landowners get permits from the Division of Forestry for open burns held during certain times of the year, and only officially authorizes "prescribed fire" on public land. Liability laws also vary by state, spanning the gamut from "simple liability" to a requirement of "gross negligence."



USFS and Georgia Dept. of Natural Resources staff gather for a briefing before a prescribed burn on the Chattahoochee-Oconee National Forest. Photo by USFS.



Prescribed Burning Unit Plan			
Site Information			
1. Landowner Name			
1a. Person Responsible Name:			
2. County:		3. Acres to be Burned:	
4. Address/Location of Burn			
5. Latitude and Longitude of Burn Site: Degree/Min./Sec.		N	W
6. Reason/Objective for Burning			
7. Date or Year Last Burned			
8. Attach a detailed Map to include:		firelines; (if installed) natural or man-made barriers; roads; open areas; power lines; adjoining property and improvements, firing locations; wind direction indicator; true north; timber types	
9. Instructions for firebreaks/Firing Operations			
Weather Values/Conditions			
	Enter Forecasted/Actual		Enter Desired Value for this Burn Site
10. GFC Class Day			
11. Wind Direction			
Weather Condition/ Description	Enter Forecasted/Actual (use single number-not range)	Common Range of Values for all Prescribed Burns	Enter Desired Values for this Burn Site
12. Surface Wind (Open)		8 to 14 mph	
13. Canopy Wind		5 to 8 mph	
14. Mixing Height (feet)		1650 or above	
15. Transport Wind Speed		9 to 20 mph	
16. Daytime Dispersion Index		40 through 90	
17. Nighttime Dispersion Index		Above 6	
18. Relative Humidity (%)		Above 30%	
19. Temperature *F		Less than 85*	
20. LVORI ( day of burn and next two (2) 12 hour forecast periods)		1 through 6	
21. KBDI		Below 550 (below 450 for understory burns)	
22. Turner & Atmosphere Tendency (Scale = 1-7)		3, 4, or 5	
23. 1 hour fuel moisture %		8% or above	
24. 10 hour fuel moisture %		8% or above	
Values highlighted in orange indicate possible watch out situations for prescribed burning which may indicate the need to further evaluate prescribed burning operations under current or forecasted weather conditions depending on objectives and desired weather conditions for burn site.			
25. Red Flag Weather Factors and Before Rx Burning			
<ul style="list-style-type: none"> <li>KBDI 450 or above</li> <li>RH lower than 30%</li> <li>Surface winds greater than 15 mph</li> <li>Smoke Dispersion Index below 40 (day) and below 6 (night)</li> <li>LVORI 7 or above tonight or tomorrow night</li> <li>Mixing Height (ft.) less than 1,650 or greater than 6,500</li> <li>Wind shift is forecasted</li> </ul>			
26. "Watch Out" Situations and Site Specific Conditions to Consider			
<ul style="list-style-type: none"> <li>The adjoining property contains wildland fuels that will burn rapidly</li> <li>Standing dead snags along the fireline</li> <li>More than 3 years since the property was burned</li> <li>Openings such as roads, power lines, timber stand height changes, fields, etc...that will cause winds to increase or change directions (eddy effect)</li> <li>Smoke Sensitive Area (SSA) downwind or down drainage</li> <li>Hazardous fuels or dry organic soils surrounding burn site</li> <li>Moderate or high fog potential the night following burn</li> <li>Piles, windrows, or heavy fuels</li> <li>Heavy amount of dead/down fuels within the area to be burned</li> <li>Continuous amount of draped/ladder fuels</li> <li>Utility poles and other structures on site</li> </ul>			
27. Smoke Sensitive Areas and Precautions to be taken including adjoining structures/improvements:			
28. On the day of the burn, a permit must be received from the local unit of the Georgia Forestry Commission.			
Local GFC Office/Unit:	Phone #:	Burning Permit Number:	
29. Other Regulations			
30. Prepared by Printed/Typed Name:		Prescribed Burn Manager Certification #	
Prepared by Signature:			
Date of Prescribed Burn:			

For more information that defines interpretations for the GFC Weather Conditions and provides recommendations please visit <http://weather.gfc.state.ga.us/Info/NFDRSexp2011.aspx> or <http://weather.gfc.state.ga.us/Info/WXexp.aspx>. The "Introduction to Prescribed Fire in the Southern Ecosystems" can be viewed and a copy of obtained at <http://www.srs.fs.usda.gov/pubs/41316>. This guide can provide more details that can help prescribed burn practitioners plan for and use prescribed fire to meet burning objectives.

Figure 2: Sample burn plan used by the Georgia Forestry Commission.





*A prescribed fire manager ignites a backing fire along a prepared fire line while additional crew members monitor the fire line and backing fire. Photo by Ben Robinson, Kentucky Department of Fish and Wildlife Resources.*



*Prescribed fire on the Chattahoochee-Oconee National Forest being lit by hand. Photo by Steve Chapman, NBCI.*

Wildlife species such as northern bobwhite and red-cockaded woodpecker experience reductions in population numbers without fire. Numerous ecosystems, including oak and pine savannas as well as native grasslands, counting their many forms, are lost due to the suppression of fire. Although many land managers and scientists agree on the need for fire, the capacity to conduct prescribed burning and societal issues place many fire dependent ecosystems in peril.

“The National Bobwhite Conservation Initiative and its parent entity, the National Bobwhite Technical Committee, support the routine use of prescribed fire to mimic natural conditions and maintain historic ecosystems to benefit not only bobwhites but also the many other species whose very existence depends on it,” said NBCI Director Don McKenzie.

#### **ADDITIONAL RESOURCES**

- 2018 National Prescribed Fire Use Survey Report: [www.appalachianfire.org/s/2018-Prescribed-Fire-Use-Survey-Report.pdf](http://www.appalachianfire.org/s/2018-Prescribed-Fire-Use-Survey-Report.pdf)
- Coalition of Prescribed Fire Councils: [www.prescribedfire.net](http://www.prescribedfire.net)
- Prescribed Fire Liability Factsheet: [www.wildfiretoday.com/documents/RxLiability.pdf](http://www.wildfiretoday.com/documents/RxLiability.pdf)
- Using Prescribed Fire to Enhance Forest and Grassland Health, Reduce Wildfire Risk, and Improve Wildlife Habitat Factsheet: [www.bringbackbobwhites.org/download/prescribed-fire-fact-sheet](http://www.bringbackbobwhites.org/download/prescribed-fire-fact-sheet)

*Richard Hines is a freelance writer, a certified wildlife biologist, and former manager of Cross Creeks National Wildlife Refuge.*





# Translocation of Wild Bobwhites

## Striving to Improve an Important Restoration Tool

Don McKenzie | NBCI Director

Bobwhite conservation took a historic step forward this year, raising the bar to help improve inter-state movements of wild bobwhites for restoration purposes. In 2018, scientists and managers of the National Bobwhite Technical Committee (NBTC) and the NBCI developed a “Position Statement and Guidelines for Inter-state Translocation of Wild Northern Bobwhites,” as described in the 2018 NBCI State of the Bobwhite report. Administrators comprising the NBCI Management Board approved the first-ever such guidelines in March 2019.

Recognizing the long, checkered history of moving wild bobwhites from state to state, and acknowledging the need for improvement, a collection of researchers synthesized the state of the science in a peer-reviewed paper at the Quail 8 National Quail Symposium in 2017. The best management practices recommended in the new guidelines build on that scientific foundation, recognizing that inter-state translocations have potential to be an important restoration tool, if done correctly.

The stakes get higher every year. The occupied portion of the bird’s historic range continues contracting and fragmenting. Conversely, the potential restoration sites that no longer have a viable population of wild birds to build upon increases in direct proportion. The nation’s bobwhite conservationists need inter-state translocation to become a more effective tool to address increasingly urgent bobwhite declines.

The guidelines are for voluntary use by states and other conservationists requesting or donating wild bobwhites across state lines, and provide an array of technical and procedural standards intended to:

1. Increase the odds for successful restorations;
2. Improve the management and ensure wise use of the public’s wildlife resources; and
3. Promote long-term scientific learning.

Successful translocations begin with a minimum quantity and quality of habitat at the release site. The guidelines lean heavily on the habitat standards and assessment procedure of the NBCI focal area program (Coordinated

Implementation Program, or CIP): >1,500 acres of year-round suitable habitat that also comprises at least 25% of the total acreage designated as the release site. Further, the guidelines seek a long-term commitment by requesting documentation of a 10-year habitat maintenance plan.

What is a “successful” translocation? An ecologically viable population, or a robust huntable one? The new guidelines suggest realistic, worthy, and measurable population restoration goals be stated up front. In addition, the pre-release baseline population should be documented at the release site, along with post-release population monitoring for 10 years.

Donors and recipients both have key responsibilities. The burden of proof rests largely on the recipient state to demonstrate sufficient habitat conditions and maintenance plans, to follow state-of-the-science procedures for the transport of birds, and to commit to monitoring and reporting for the life of the project. Donor states should exercise due scrutiny of applications to ensure accountability and wise use of public birds.

Continued scientific learning can only be accomplished with thorough documentation of successes and failures. The nation’s first national archive of translocation requests, data, and reports will be established on the NBCI’s QuailCount website for use by researchers in future evaluations.

The Pennsylvania Game Commission (PGC) is the first prospective recipient to officially utilize the new guidelines in applications to western states. Bobwhites are extirpated from Pennsylvania, thus translocations are necessary if the species is ever to be restored there. Initial reactions by the potential donor states to the formal application by PGC were positive and appreciative of all the groundwork and documentation.

Wild bobwhites are a publicly owned natural resource. These new inter-state translocation guidelines are designed to protect the public interest in both donor and recipient states from political pressures or poorly





*Texas Parks and Wildlife Department (TPWD) staff capturing south Texas wild bobwhites for translocation to a Wildlife Management Area in the Post Oak Savannah region. The ongoing Texas A&M project aims to move hundreds of birds over 2-3 years into restored habitat. Photo by TPWD.*



*TPWD biologist Jay Whiteside working with Rolling Plains Research Ranch staff near Roby, Texas to capture and transport wild bobwhite to a pilot study site in Navarro County, Texas. Photo by TPWD.*

conceived plans. In addition, the need for eventual tangible public benefits is spelled out to include public hunting and/or viewing, expansion of the restored population beyond initial project boundaries, and availability of the restored population as a source for future translocations at other sites.

Bobwhite researchers and managers expect the new guidelines to raise the odds for successful translocations and thus create a new, potent tool in the conservationists' toolbox for tackling the problem of declining, fragmented populations.



# NBCI Coordinated Implementation Program Update

## Missouri and Iowa Bolster Hope for Quail Restoration

Tom Dailey and Molly Foley | NBCI Science Coordinator and Data Analyst

Range-wide demand for evidence-based bobwhite population restoration led to a national standard in 2014, the NBCI Coordinated Implementation Program (CIP). CIP aims to demonstrate success—a target density of bobwhites—relatively quickly, with annual breeding bird and fall bobwhite covey monitoring, and habitat monitoring in years 1, 5, and 10. The 5th and 10th year of each project includes analysis and results, all aiming for the target fall bobwhite density. CIP details can be found in the CIP plan (Morgan et al. 2016) and on the CIP web page, [www.quailcount.org/monitoring/overview.html](http://www.quailcount.org/monitoring/overview.html).

CIP is a relatively new program, launched in 2013 with pilot testing in Georgia, Iowa, Kentucky, Missouri, Texas, and Virginia. As part of the first 5-year iteration of collecting data and evaluating CIP effectiveness, the program has been aided by partnerships with natural resource agencies and universities. This year, we report for the first time the single most important measurement in quail conservation, population size. We also include summary data for select songbirds measured in the breeding season. We provide simplified data summaries and an update on CIP's Adaptive Management. The comprehensive comparisons with statistical probabilities are available to CIP coordinators and are being submitted as a manuscript for publication in a peer-reviewed journal in 2020.

### CIP PARTICIPATION

In 2019, there were 19 states with 24 CIP projects (Figure 1). Pennsylvania's CIP status of "in development" is based on the agency's plan to translocate bobwhites in the near future; upon completion of translocation, the CIP becomes official. CIP focal areas range in size from Delaware's 1,694 (Cedar Swamp Focal Area) to Texas' 27,238 (Austin County Focal Area) acres and average 6,367 acres.

### ANALYSIS BACKGROUND

Analysis in 2019 is made possible by a grant from the US Department of Agriculture (USDA) Farm Services Agency (FSA). The USDA desired to determine the contributions

of the Conservation Reserve Program (CRP) to quail and grassland bird restoration. CIPs with CRP are located in Iowa, Indiana, Kentucky (Livingston), Missouri, Nebraska, and Ohio. Non-FSA CIPs, however, are also included in the analysis process, and select data are reported here. NBCI is providing similar analysis beginning in 2020 for CIPs in the Longleaf Pine region, including Alabama, Georgia, Louisiana, and Virginia (Big Woods/Piney Grove), via a grant from the National Fish and Wildlife Foundation (see [www.nfwf.org/longleaf/Pages/2019rfp.aspx](http://www.nfwf.org/longleaf/Pages/2019rfp.aspx)).

CIP analysis is at the forefront of population estimation, via a partnership with Drs. James Martin and John Yeiser, University of Georgia (UGA). UGA is submitting their analytical models used for CIP to a peer-reviewed journal in 2019. The models used include components or concepts from hierarchical modeling (e.g., Amundson, C. L., J. A. Royle, and C. M. Handel. 2014. A hierarchical model combining distance sampling and time removal to estimate detection probability during avian point counts. *The Auk* 131:476–494). Key measurements are distance to calling birds, the exact time those observations occurred, the number of quail per covey, and how these measures change over multiple sampling visits.

CIP recommends but does not require flushing coveys at the completion of daily fall covey call counts. These measurements provide vital information for estimating individual quail population density and feedback in the field on accuracy of locations of calling quail. Most CIPs collecting these data use bird dogs to find quail in calling locations.

### CIP ADAPTIVE MANAGEMENT: QUAIL POPULATION OBJECTIVES

CIP is following adaptive management concepts, including measurable objectives, collecting data on quail density, habitat and hunting, with reference area measurements to provide a baseline. We expect the analysis in years 5–10 to lead to improved management, where needed. The foundation of CIP is to create and effectively manage



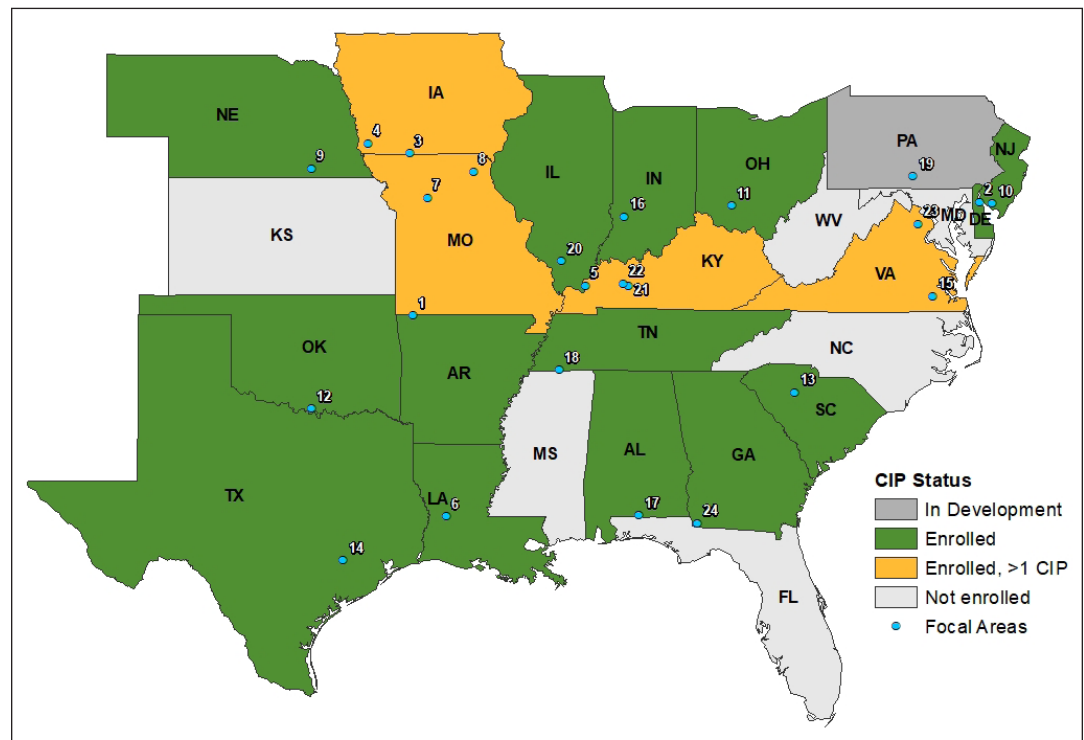
habitat that yields target levels of bobwhite abundance. CIP began with fall quail population objectives defined in NBCI 2.0 for extremely large landscapes (e.g., county-sized areas). CIP areas are smaller (typically a few thousand to 25,000 acres), and focused on being demonstration areas. Updated CIP population targets were set by some CIPs at meetings in Iowa and Illinois, and others will be defined by 2020.

Population objectives for CIP focal areas fall into three categories:

- 1) To meet minimum biological needs of a local bobwhite population;
- 2) To donate bobwhites for translocation for intra- and inter-state restoration programs; and
- 3) To achieve a population density that can provide sustainable and satisfying hunting for the relevant stakeholders.

The minimum biological objective is to achieve a population of bobwhites with sufficient abundance to have a probability of persistence  $\geq 0.95$  for  $\geq 25$  years. To meet this objective, the recommended target will be to achieve a fall population of not less than 800 birds with a minimum average density across the landscape of 1 bird per 5 acres, or 0.2 quail per acre. CIP focal areas with minimum target include DE Cedar Swamp, IN Goose Pond, OH Fallsville, NJ Dix Wildlife Management Area, and VA Manassas (see Figure 2). We expect that this minimum target can be refined as regional estimates for demographic parameters become available and models improve.

While the minimum biological objective is the only



**Figure 1.** Focal area map of the 24 CIP projects locations in 2019. For details on individual CIPs, particularly partnerships, go to [www.quailcount.org/monitoring/overview.html](http://www.quailcount.org/monitoring/overview.html).

- |   |  |
|---|--|
| 1) AR - Pea Ridge Focal Area                          | 14) TX - Austin County Focal Area                      |
| 2) DE - Cedar Swamp Focal Area                        | 15) VA - Big Woods/Piney Grove Preserve Focal Area     |
| 3) IA - Ringgold Focal Area                           | 16) IN - Goose Pond Focal Area                         |
| 4) IA - Shawtee Focal Area                            | 17) AL - Boggy Hollow Focal Area                       |
| 5) KY - Livingston Focal Area                         | 18) TN - Wolf River Focal Area                         |
| 6) LA - Kisatchie National Forest - Vernon Focal Area | 19) PA - Letterkenny Focal Area                        |
| 7) MO - 2C Focal Area                                 | 20) IL - Burning Star Focal Area                       |
| 8) MO - Bee Ridge Focal Area                          | 21) KY - Peabody Focal Area                            |
| 9) NE - Meridian Focal Area                           | 22) KY - Wendell Ford Training Center Focal Area       |
| 10) NJ - Dix WMA Focal Area                           | 23) VA - Manassas National Battlefield Park Focal Area |
| 11) OH - Fallsville Focal Area                        | 24) GA - Silver Lake West Focal Area                   |
| 12) OK - Cross Timbers Focal Area                     |  |
| 13) SC - Indian Creek Focal Area                      |  |

one required for participation in CIP, more aggressive population levels for translocation and to meet the social objective of sustained quail hunting are most desirable. Per the mission of NBTC, huntable populations are the gold standard. These CIP targets include 0.3 quail per acre (AR Pea Ridge, IA Shawtee, SC Indian Creek, and VA Big Woods), 0.4 quail/acre (NE Meridian), 0.5 quail/acre (IA Ringgold, IL Burning Star, KY Livingston/Peabody/Wendell Ford, MO 2C/Bee Ridge, and OK Cross Timbers), and 1.0 quail/acre (TN Wolf River) (see Figure 2). CIP targets  $>0.2$  quail/acre represent areas that are generally better places to hunt.



Even though CIP populations are challenged by short-term phenomena that may temporarily diminish population density (e.g., weather and disease), we expect at a minimum that a CIP achieve its target density during >1 year during the 10-year measurement period. Furthermore, we expect CIP focal areas to experience quicker population recovery after such events compared to reference areas. In the case of unforeseen catastrophic events, the 10-year CIP duration could be extended to adequately test CIP's habitat-population hypotheses.

## RESULTS

Data collected and submitted through July 2019 include 1,353 monitoring points, 28,630 observations of birds across 8,251 breeding bird counts, 4,316 covey calls counted across 2,137 fall counts, and habitat monitoring and management data for the five FSA project CIPs and one non-FSA project CIP (Illinois). Other CIPs have collected habitat data that have not been submitted. In this report, CIP habitat data and reference area quail fall population data are not presented.

CIP provides measurement and analysis of the relationship between habitats managed for bobwhites and 69 other bird species during the breeding season. CIP protocol requires measurement of bobwhites and other species of interest, and originally limited the total to 7 species to reduce dilution of the focus on bobwhites (i.e., increased error in observations of bobwhites). This limit was removed in 2016, and subsequently, some states are reporting on >6 species, including: Arkansas (8 species), Delaware (7 species), Georgia (7 species), Iowa (7 species), Kentucky (10 species), Missouri (7 species), Nebraska (12 species), Oklahoma (52 species), South Carolina (8 species), Tennessee (8 species), Texas (8 species), and Virginia (10 species). Species summarized in Figure 3 are those common across multiple states (e.g., northern bobwhite, eastern meadowlark, field sparrow, indigo bunting, prairie warbler, dickcissel, and Bachman's sparrow.)

## COVEY FLUSHES

Nine states flushed 226 coveys to count individuals, averaging 11 quail per covey (Figure 4) with a range of 1 to 26 quail. Of the 226 flushes, 113 coveys had >11 quail. CIP protocol includes counts of >1 individual for both statistical estimation and because we do not know how many quail in a covey called. Eleven coveys flushed had <3 quail. For estimation of quail per acre, measured covey sizes were used, except that states without these data were assigned the average of 11 quail/covey.

## FALL DENSITY

Fall density summaries are displayed in Figure 2. Missouri's focal areas (2C and Bee Ridge) had more bobwhites than other focal areas. Densities at Bee Ridge were 0.5 quail/acre, and density at 2C has been near 0.9 quail/acre for four years. High densities—between 0.4 and 0.7 quail/acre—were observed at Iowa's Ringgold and Shawtee, Kentucky's Livingston, Missouri's Bee Ridge, and Oklahoma's Cross Timbers focal areas. On the best-performing areas and across 14-32 listening stations per focal area, an average of >3 bobwhites have been measured calling, and often >9 are heard at the best listening stations. These areas have the potential for excellent quail hunting.

Both of Missouri's CIP focal areas documented quail populations at or above their population target of 0.5 quail per acre (1 bird/2 acres; Figure 2). Further, the 2C CIP focal area is consistently setting new records for measured quail density in Missouri extending back to 1985, with NBCI's estimated 0.91 quail per acre for 2015, 2017, and 2018. However, the CIPs in the western Midwest (Iowa, Missouri, and Nebraska) experienced apparently high quail mortality during the recent winter, so the next few years of CIP will more fully inform our understanding of the relationship between CIP habitat and bird population response.

Several CIP focal areas have very low quail abundance, and thus the opportunity for marked improvement during their remaining CIP years. The six pilot states (IA, GA, KY, MO, TX, and VA) are in the 7th year of the prescribed minimum 10-year commitment (they will reach 10 years in 2022-23, depending on the exact timing of their habitat measurements), and some states have only just begun. Thus, based on the high reproductive capacity of bobwhites (populations can increase threefold in a few years), there is still time for suitable habitat to be developed for the desired quail population response, even in CIPs with very low abundance.

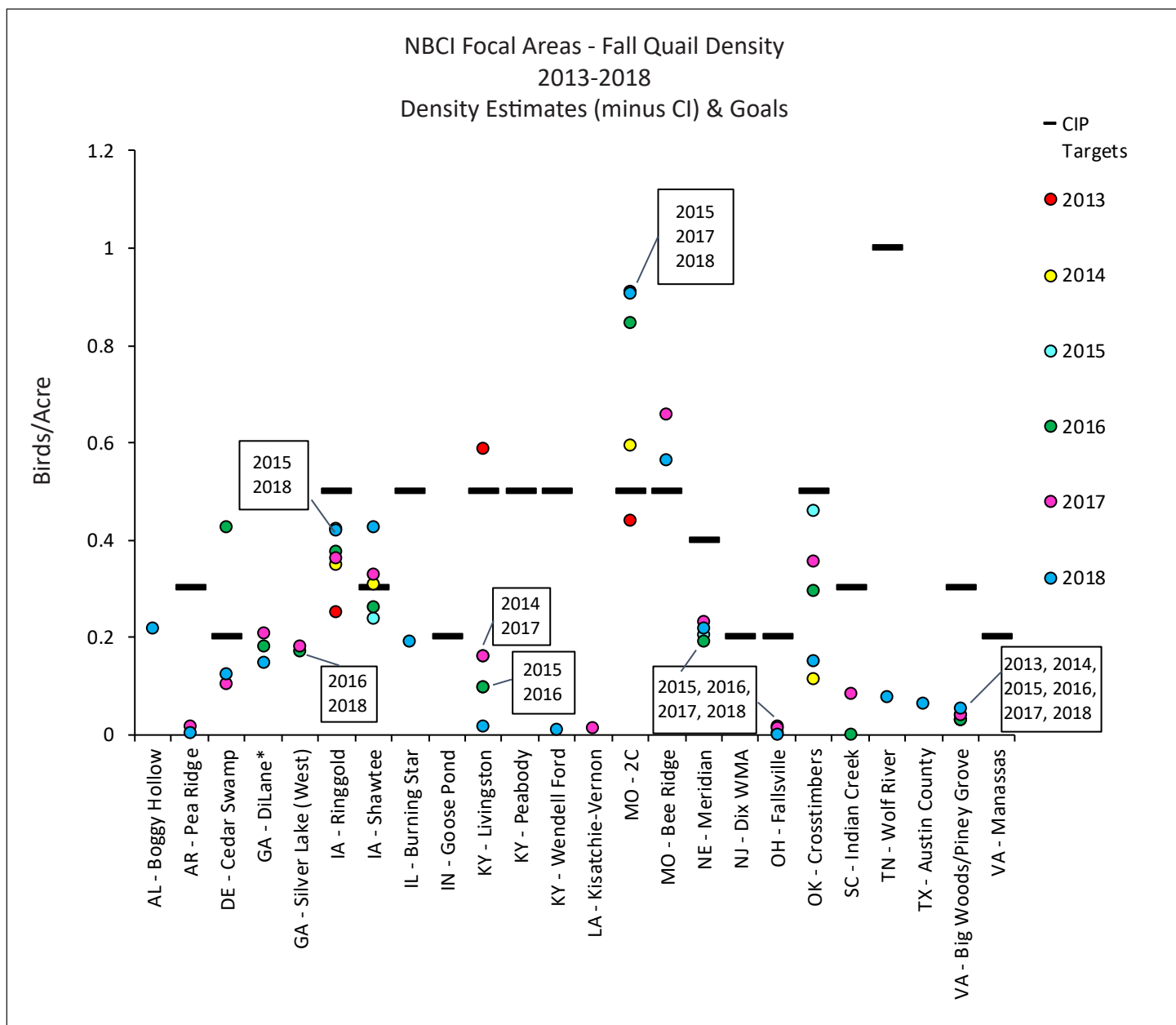
Some CIPs, however, have increased uncertainty about their capacity for restoration. For example, Kentucky's Livingston County focal area has suffered a major decline in CRP-based habitat, making it unlikely to reach the 0.5 quail per acre measured in 2013. Kentucky has adjusted to this potential loss by adding new CIP focal areas on public land—Peabody Wildlife Management Area and Wendell Ford Training Center. Other CIPs are composed of non-state agency partners, increasing the challenge of bobwhite-centric habitat management.



## WHAT'S NEXT?

The high variability in bobwhite abundance across CIPs points to a need to think and act differently about quail conservation. The CIP aims to do this through strategic monitoring, targeted workshops and learning opportunities, advanced statistical modeling, and adaptive habitat management. The most important action

might simply be funding because management of plant succession and achieving prescribed vegetation structure is expensive and time consuming. Fortunately, the higher-achieving CIPs, even if only for one year, provide an example for other CIPs to follow. The role of NBCI is to foster learning and continue to provide technical service for evidence-based conservation.



**Figure 2.** Preliminary estimated individual mean quail densities in CIP focal areas during fall 2013-18, relative to 10-year targets. Estimates are simple, lacking estimation of variability, i.e., credible intervals, and reference area data. Estimates of individuals are based on covey flushes per CIP protocol, see Figure 4 and text. "Plus practices" for Georgia include spreading feed and predator control during spring.







**Figure 3.** Eighteen graphs showing the total counts of select bird species reported for CIP focal areas during 2013-18. For states with >1 focal area (IA-2, KY-3, MO-2, VA-2), counts are summed across areas. (Continued on following two pages.)

*Species acronyms:*

BASP - Bachman's Sparrow

DICK - Dickcissel

EAME - Eastern Meadowlark

FISP - Field Sparrow

INBU - Indigo Bunting

NOBO - Northern Bobwhite

PRAW - Prairie Warbler



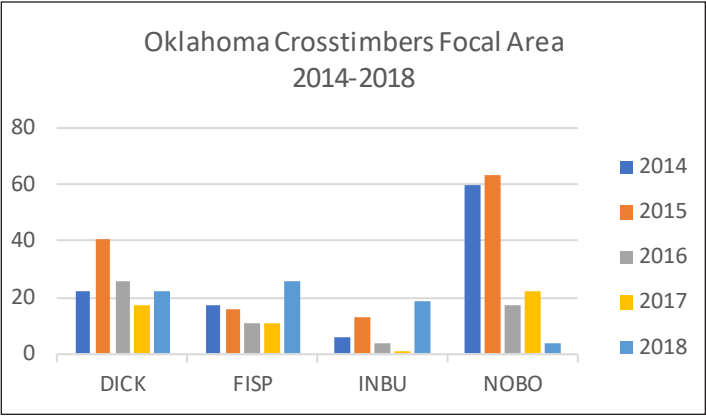
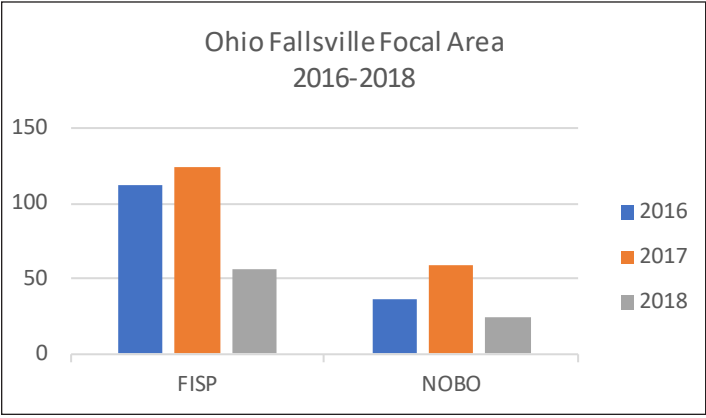
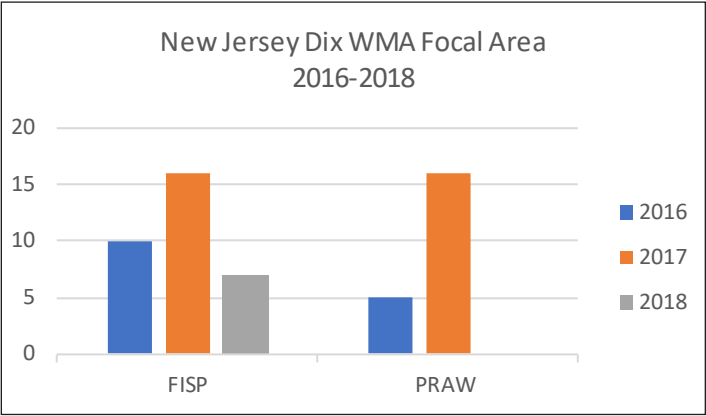
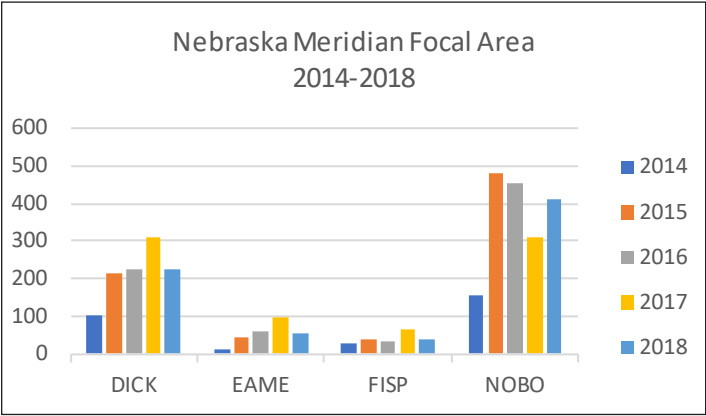
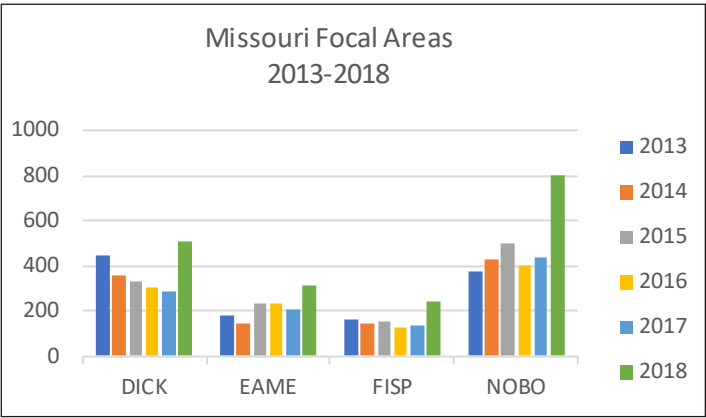
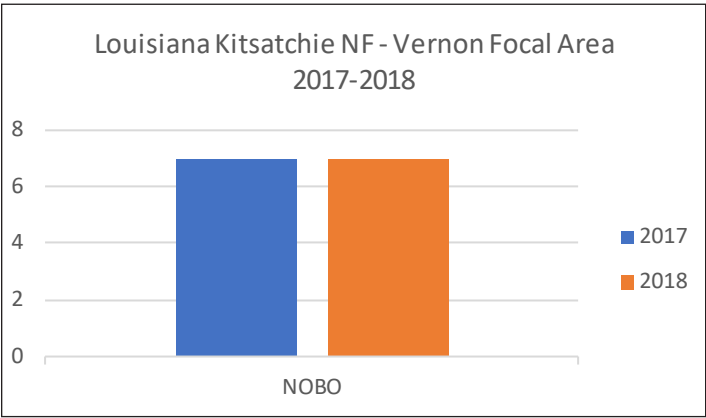
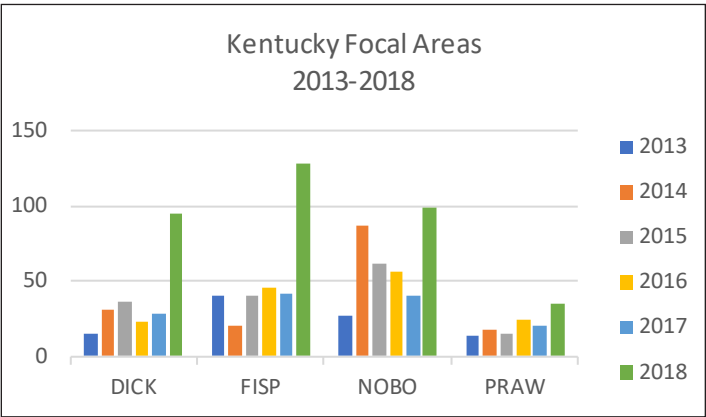
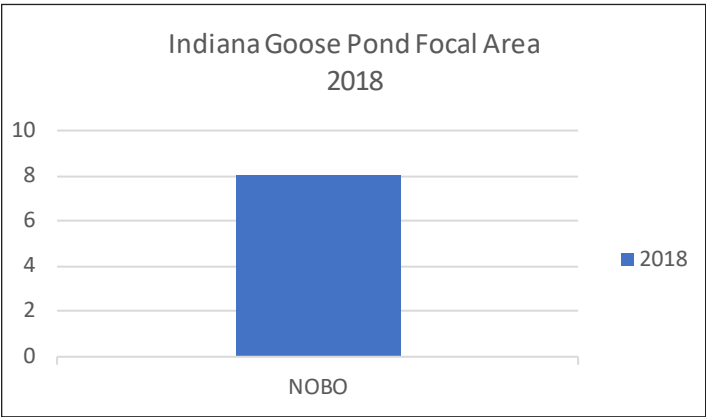


Figure 3 Continued.





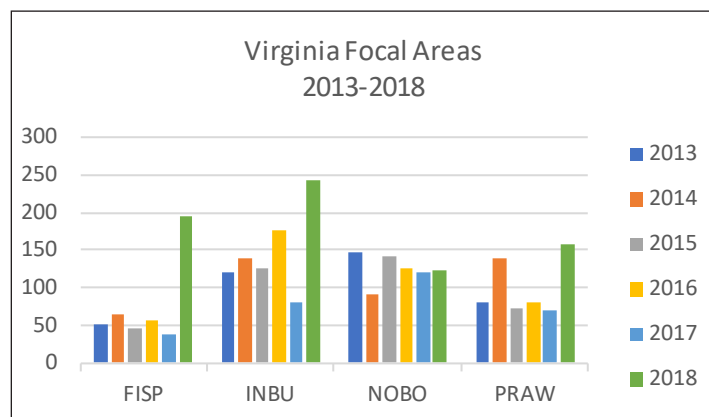
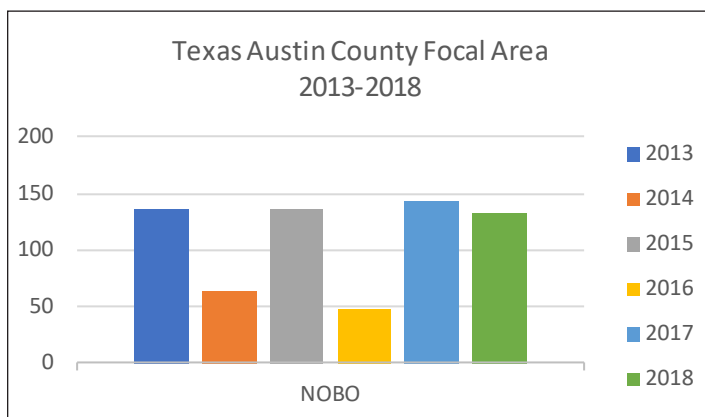
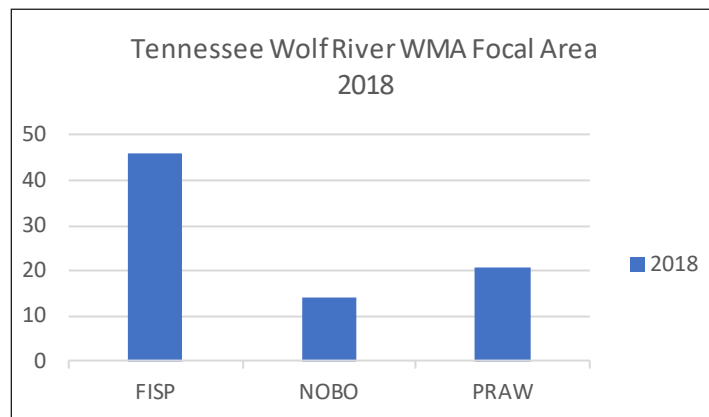
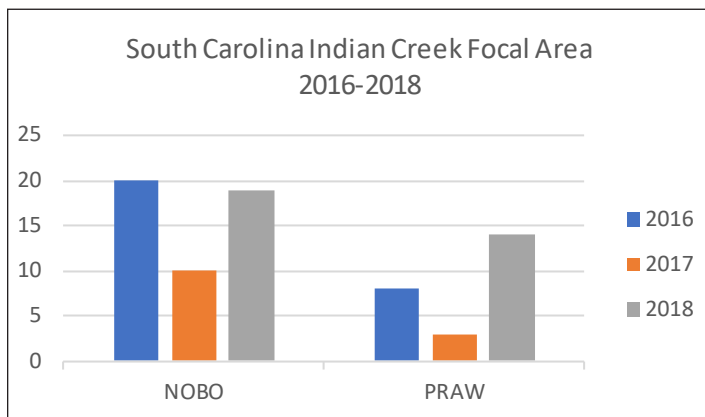


Figure 3 Continued.

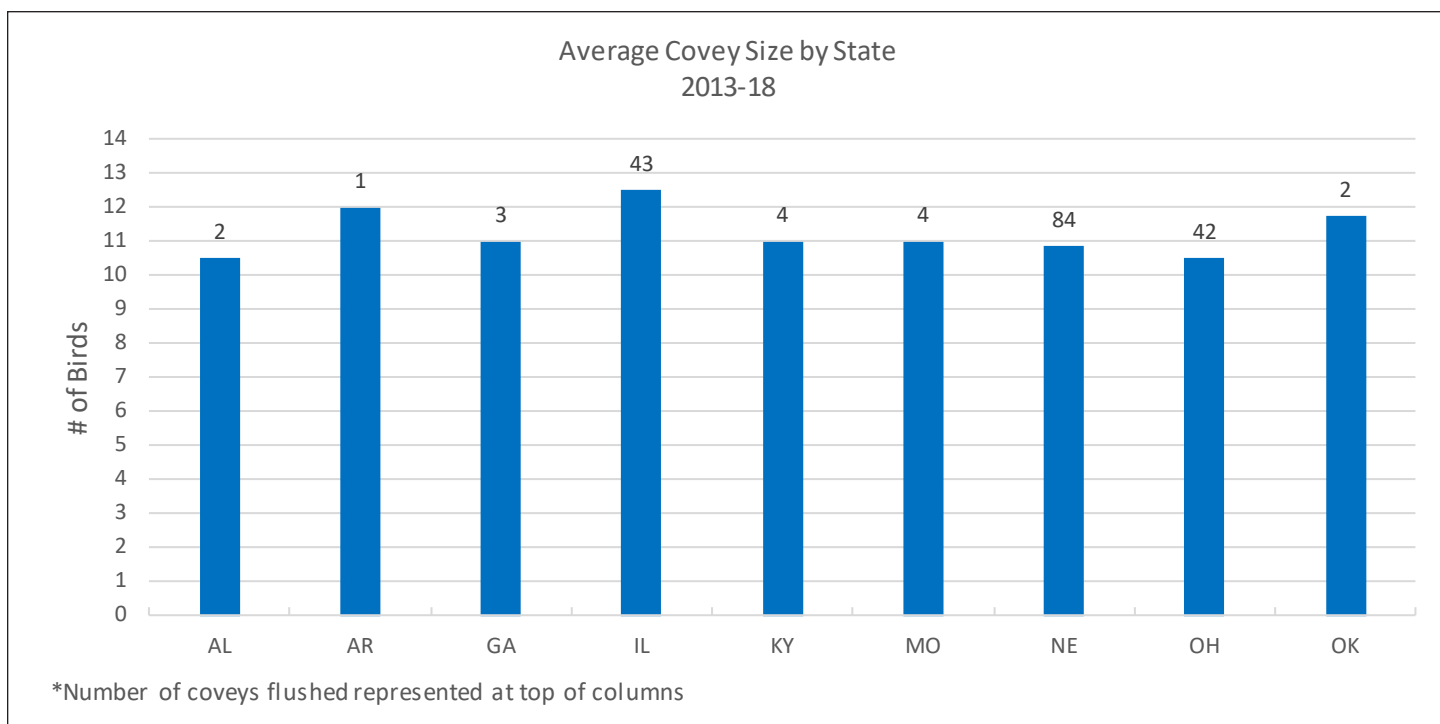


Figure 4. Covey flush counts by nine CIP states during 2013-18, total of 226 coveys. The average number of individual quail per covey was 11. For estimation of quail per acre in Figure 2, measured covey sizes were used, except that states without these data were assigned the average of 11.

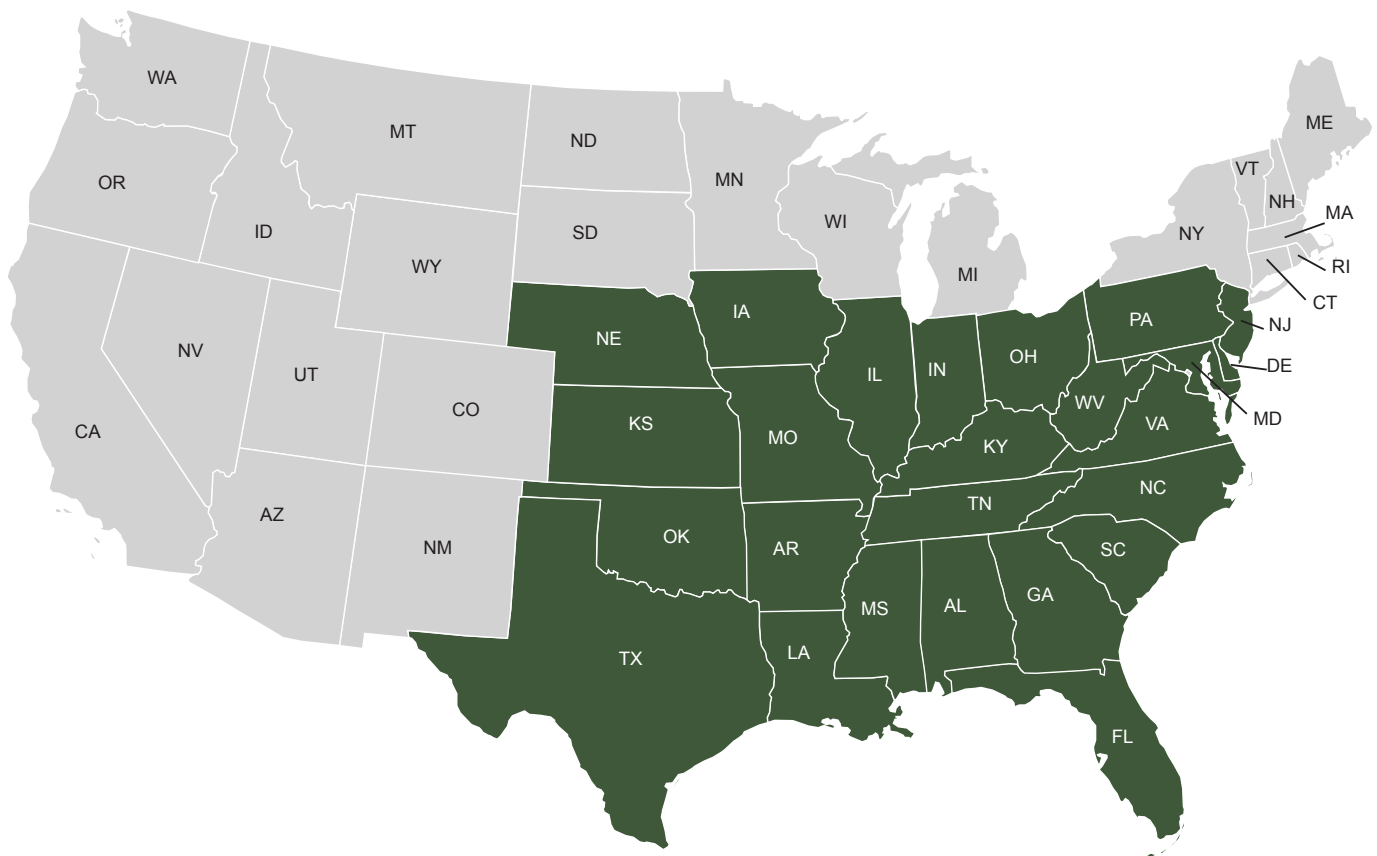


# State Conservation Reports

This section contains highlights of bobwhite conservation during 2018 and early 2019, as reported by each state's NBCI quail coordinator. The most up-to-date information on 2019 bobwhite population and hunting information is available on state agency websites, which are embedded in the electronic version of this report on [www.bringbackbobwhites.org](http://www.bringbackbobwhites.org). State quail coordinator contact information can be found at the end of each report.

Bobwhite conservationists continued aggressive and innovative restoration, including millions of acres of habitat management, education programs, monitoring, and research. Most state conservation reports now include charts of habitat management reported for their state for the NBCI Habitat Inventory, Page 65. While bobwhite abundance in the Midwest reached all-time highs this year, a drop is expected in the following year due to a harsh winter.

State agencies continued to expand quail restoration in spite of challenging budgets, forging partnerships with public and private land agencies, hunting organizations, research institutes, and non-government organizations. All are needed to bring about the landscape-scale change that is needed to restore sustainable bobwhite populations.



*NBCI member states that make up the core historic bobwhite range*



## **Alabama — Alabama Department of Conservation and Natural Resources (ADCNR)**

**Population:** Alabama's quail numbers remain near all-time lows and have decreased by more than 80% since 1960. On private lands, healthy, huntable populations exist only on properties intensively managed for quail. Quail populations have responded positively to habitat manipulation on some Wildlife Management Areas (WMAs), particularly in longleaf and shortleaf reforestation projects. Quail calling surveys show that the best concentrations are on Barbour WMA in the southeast portion of the state, Freedom Hills WMA in the northwest, Choccolocco WMA in the east, and Geneva State Forest WMA near the Florida state line. Efforts continue to increase populations on other WMAs through field management and timber thinning.

**Hunting:** The ADCNR Division of Wildlife and Freshwater Fisheries (AWFF) 2017-18 hunter surveys indicated approximately 8,821 quail hunters harvested about 347,308 quail. Only 24% of the harvest were wild birds.

**Management:** AWFF partners with various agencies, organizations, and private landowners to improve and restore quail habitat on public and private lands. Management includes:

- Quail population monitoring in spring and fall conducted on 17 WMAs across the state and two Special Opportunity Areas in Dallas County;
- Managing nearly 4,000 acres of Alabama WMAs in large agricultural fields by engaging contract farmers. Management practices include fallowing field edges and biannual rotation of the edge buffers to maintain early successional habitat adjacent to the woodlands through fall disking. This is primarily accomplished by including defined requirements in the farmer's contract. An additional requirement defined in farm contracts includes leaving a percentage of cropland unharvested adjacent to field buffers.
- Restoration of longleaf and shortleaf pine on Alabama WMAs where feasible, along with prescribed burning programs to restore grassland communities.
- Continued efforts between AWFF and US Forest Service to establish quail management units on four national forests in Alabama. Boggy Hollow WMA in Conecuh National Forest (CNF) was established in 2017 by an MOU between AWFF and the US Forest Service (USFS) on a portion of CNF as a small game and quail focal area. This 7,000-acre area is a cooperative effort between AWFF, USFS, Quail Forever (QF), the Conecuh Chapter of QF, and National Wild Turkey Federation. Management efforts are primarily focused on timber thinning, frequent prescribed fire, and reduction in the size of the burned units. NBCI Coordinated Implementation Program (NBCI CIP) population monitoring was implemented on Boggy Hollow WMA in 2018, with additional habitat monitoring scheduled to begin in 2019. AWFF, USFS, and QF are also partnering to restore a past quail focal area on 3,000 acres of the Choccolocco WMA in the Talladega National Forest. Damage from a recent tornado and the subsequent timber salvage operation has allowed favorable quail management techniques to be implemented in the recovery plan. Plans include low density longleaf pine restocking, reestablishing small burn units, creating field openings, and population monitoring.
- AWFF continues to partner with the USDA Natural Resources Conservation NRCS to provide technical assistance for cost share opportunities to private landowners through the Working Lands for Wildlife: Bobwhite in Pine Savannas project.
- Reported 51,000.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Steven Mitchell, Wildlife Biologist, [steven.mitchell@dcnr.alabama.gov](mailto:steven.mitchell@dcnr.alabama.gov)

## **Arkansas — Arkansas Game and Fish Commission (AGFC)**

**Population:** AGFC 2018 call count route data showed a 43% decrease from the 12-year average. 2018 brood survey data found that chicks/observer was 46% less than the 10-year average, while numbers of adult quail observed during brood surveys was up. Focal area monitoring showed mixed results with Stone Prairie, Pea Ridge, and Robert L. Hankins Mud Creek experiencing declines in the number of birds heard, while staff monitoring on Harold Alexander and Little Bayou heard their first quail since management began on these areas.

**Hunting:** No formal surveys are taken, but overall the quail hunting season was fair-to-good, especially in the western portions of the state.

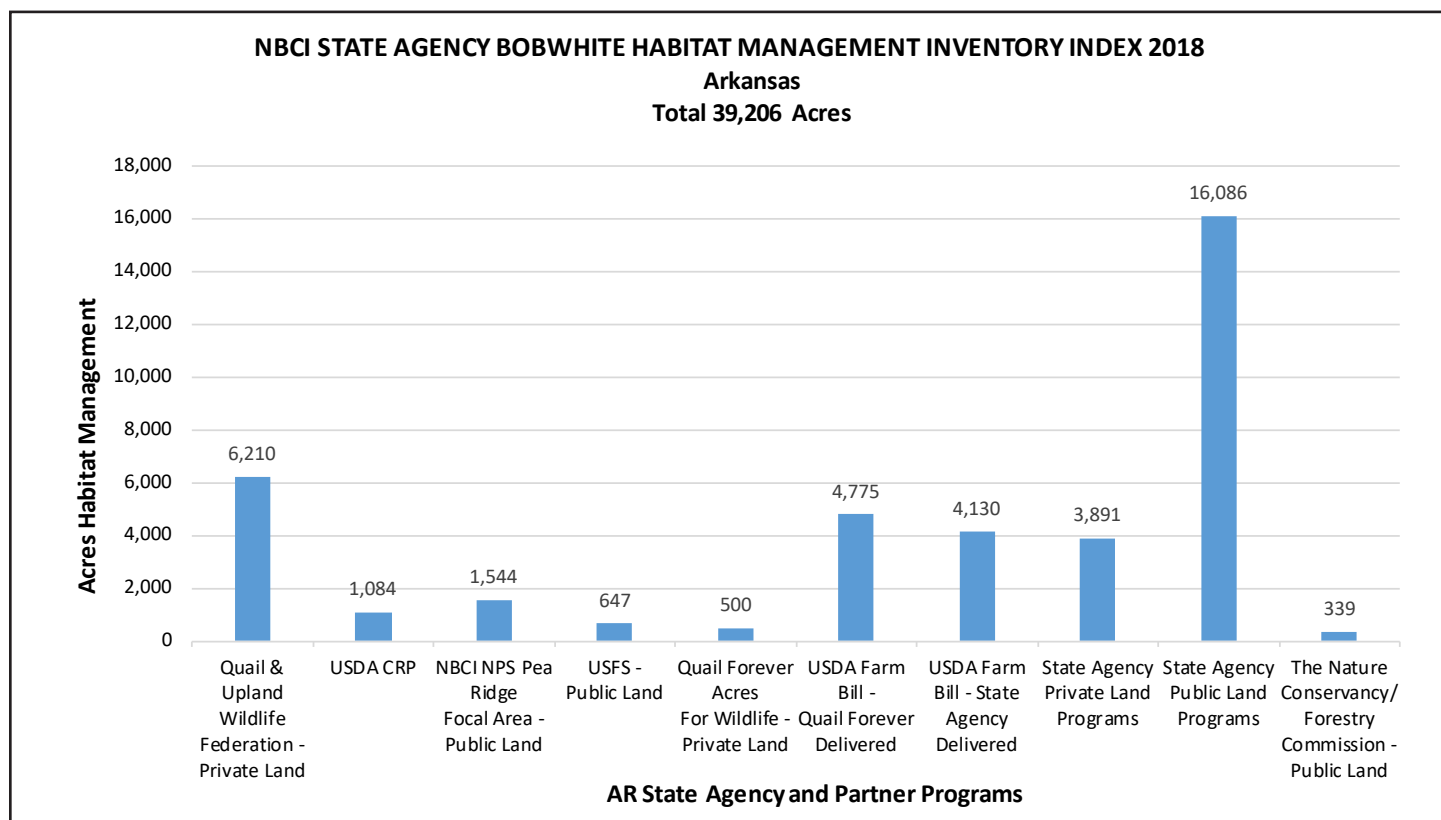
**Management:** Quail management highlights include:

- A total of 5,053 acres of habitat was improved on five focal areas during FY18.
- Habitat restoration on non-focal areas was conducted on 11,033 acres.



- Nearly 1,000 acres of habitat work was conducted on the Ozark National Forest and Poison Springs State Forest.
- Landowners enrolled 1,084 acres of land into USDA Conservation Reserve Program.
- Newly-hired Quail Forever Farm Bill Biologists (8) contracted 5,275 acres of quail habitat restoration through the use of AGFC's Acres for Wildlife program and federal Farm Bill programs on private lands, while AGFC private lands staff contracted 8,021 acres through these same cost-share opportunities.
- Plans for next fiscal year include hiring a five-person habitat specialist crew through Pheasants Forever that will aid in conducting prescribed burns on public and private lands and implementing at least 10 native grazing demonstration areas on private lands to promote this form of disturbance for creating quail habitat with producers.
- Reported 39,206.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Marcus Asher, Quail Program Coordinator, [marcus.asher@agfc.ar.gov](mailto:marcus.asher@agfc.ar.gov)



### Delaware — Delaware Division of Fish and Wildlife (DFW)

**Population:** Spring breeding bird surveys were initiated on June 6, 2018, and were repeated twice monthly through July 31, 2018 (n = 5 rounds). We surveyed 140 points (i.e., 2 sites \* 14 points per sites \* 4 rounds) over the two month survey period. Mean calling birds ranged from 0.2 (Standard Error [SE] = 0.114) to 1.64 (SE = 0.414) across rounds at Cedar Swamp Focus Area. No birds were observed calling at Ted Harvey Conservation Area. Fall covey counts were initiated on October 1, 2018, and were repeated every two weeks for a total of three rounds. Thirty points were surveyed over the six-week survey period (i.e., 2 sites \* 5 points per sites \* 3 rounds). Mean calling coveys ranged from 0.2 (SE = 0.2) to 1.6 (SE = 0.6) across rounds at Cedar Swamp Focus Area, and 0.0 across rounds at Ted Harvey Conservation Area.

**Management:** DFW continues to partner with NBCI. Through this partnership, DFW biologists and habitat managers are identifying Wildlife Management Areas within Delaware that would benefit from future habitat management and support a natural or reintroduced bobwhite population.

To date in Delaware, accomplishments include:

- Cedar Swamp Wildlife Area, in New Castle County, was designated as the state's first NBCI Coordinated Implementation Program (NBCI CIP) bobwhite focal area. Approximately 27.27% (1,500 acres) of the area was identified as habitat that could support bobwhite quail.





- Division biologists completed breeding season (whistle call) surveys from June 6 – July 31, 2018. At both the focal and reference areas, 14 plots were surveyed for presence and distribution of bobwhite.
- From October 1 – November 1, 2018, DFW biologists conducted fall covey counts on five plots at each location.
- Habitat management activities on the focal area have been focused on the gradual removal of agricultural leases and the establishment of hedgerows, field buffers, and native warm season grass/forbs. Additional habitat management activities include chemical and mechanical removal of invasive species. Within large open fields, area managers are incorporating hedgerows and expanding field buffers to reduce large open areas and provide additional protective escape cover. These habitat management activities are expected to continue during the next several years.
- In 2018, DFW enhanced and restored upland habitat on state wildlife areas, which will likely benefit bobwhites. These management activities included: planting annual food plots, planting native grass and wild flowers, mechanical and chemical management of vegetation, burning, and timber management.
- Reported 3,475.5 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Justyn R. Foth, Ph.D., Waterfowl, Turkey, and Upland Gamebird Biologist, [justyn.foth@delaware.gov](mailto:justyn.foth@delaware.gov)

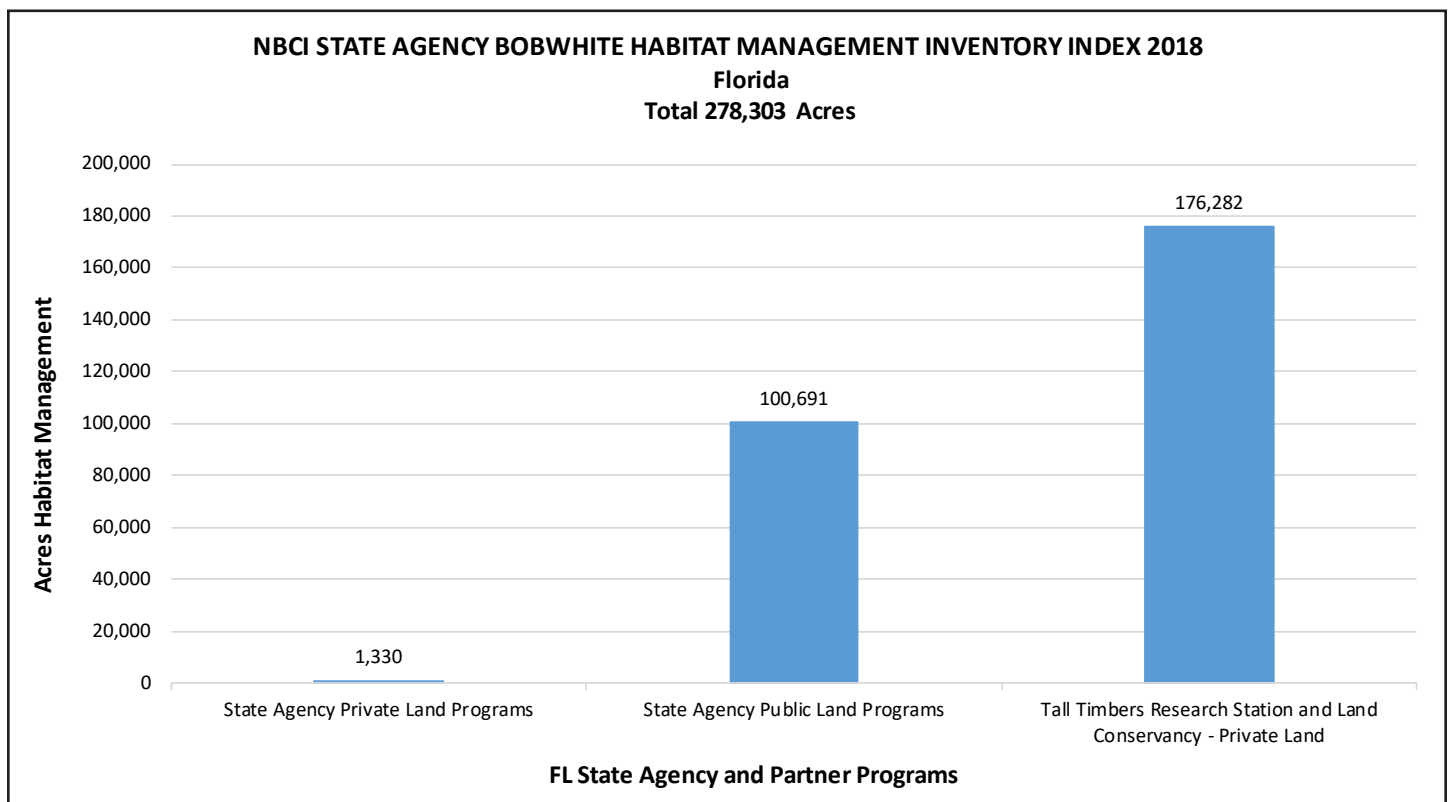
### Florida – Florida Fish and Wildlife Conservation Commission (FWC)

**Population:** Florida’s bobwhite population has declined by approximately 82% since 1966.

**Hunting:** Hunter and harvest estimates are based on results from a 2015-16 telephone survey which indicate 7,428 hunters harvested roughly 134,266 bobwhites. For comparison, annual bobwhite harvest was 2.7 million birds in 1970.

**Management:** Florida’s restoration and management of bobwhites continues to operate under a State Strategic Plan for Northern Bobwhite Restoration that is integrated with NBCI. Bobwhite management highlights include:

- To advance Florida’s strategy, the Upland Ecosystem Restoration Project (UERP) was developed in 2006 as a cooperative effort between the state’s four primary land management agencies (FWC, Florida Forest Service, Florida Department of Environmental Protection, and US Forest Service) and Tall Timbers Research Station and Land Conservancy (TTRS). UERP’s primary objective is to prioritize, design, and implement on-the-ground management to improve populations of northern bobwhite and other grassland species on public lands throughout Florida.



- Collectively, under UERP and other efforts, Florida has over 216,000 acres of total area of quail habitat on public land under favorable management for bobwhites and other grassland species. These public land areas are collectively managed by the four primary land management agencies noted above. In addition, TTRS oversees management and research on 227,461 acres of total area of quail habitat on private land throughout Florida.
- Completed over 270 fall covey call counts on public land bobwhite focal landscapes. In addition, completed species and habitat monitoring for other fire-dependent grassland species on UERP focal landscapes.
- FWC private lands biologists worked with numerous landowners and producers to provide technical assistance and cost share opportunities to create or enhance bobwhite habitat throughout the state.
- Initiated a cooperative research project between FWC, TTRS, and University of Georgia within the UERP focal area on the Apalachicola National Forest. Primary objective is to evaluate movement, habitat use, and site fidelity in relation to food availability and cover.
- Reported 278,303.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Greg Hagan, Northern Bobwhite Program Coordinator, [greg.hagan@myfwc.com](mailto:greg.hagan@myfwc.com)

### **Georgia — Georgia Department of Natural Resources, Wildlife Resources Division (GADNR)**

Population: GADNR statewide bobwhite population index has declined by more than 85% since 1966.

Hunting: From 2015-18, estimated bobwhite hunter numbers declined by 15% (15,060 hunters for 2015 season;  $\pm 910$ , 12,742 hunters for 2018 season;  $\pm 791$ ), and estimated bobwhite harvest decreased by 44% (504,683 harvest for 2015 season;  $\pm 12,203$ , 279,291 for 2018 season;  $\pm 4,965$ ). Only 14.7% of quail hunters harvested only wild quail and 19.6% harvested a combination of pen-reared and wild quail. Average hunting effort was 3.65 days in the 2018 season for all quail hunters.

Management: GADNR Wildlife Resources Division (WRD) bobwhite restoration efforts continue to follow the NBCI 2.0 step-down plan via Georgia's Bobwhite Quail Initiative (BQI): 2013-23 (released November 2014). Other quail management highlights include:

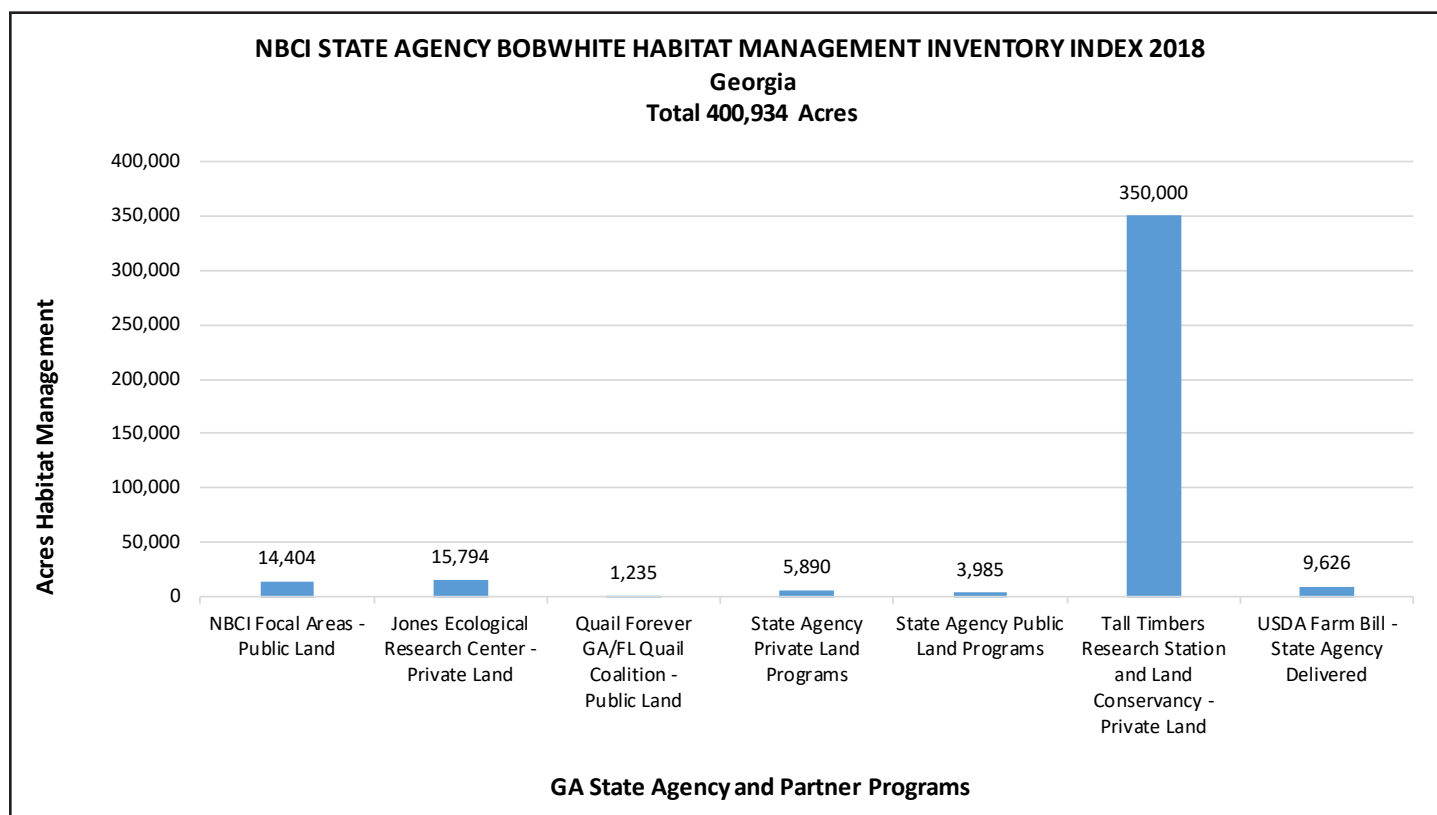
- BQI continued to partner with USDA Natural Resources Conservation Service to deliver the Working Lands for Wildlife: Northern Bobwhite in Pine Savannas and Gopher tortoise programs to enroll 9,626 new acres on working farms and forests in Georgia's Upper Coastal Plain. Practices such as thinning timber, prescribed burning, brush management, and disking are being implemented to increase quality quail habitat across the landscape. The competitive ranking process for the project is based on the NBCI Coordinated Implementation Program (NBCI CIP) Focal Tier designation. Biologists also monitored compliance on contracts, totaling about 3,000 acres from the previous year.
- BQI biologists provided technical assistance to landowners throughout Georgia's Upper Coastal Plain that impacted more than 15,000 acres of habitat.
- Georgia continues to focus intensive quail management efforts on five Wildlife Management Areas (WMAs), totaling about 24,500 acres that serve as core habitats in the BQI. 2018 saw over 14,000 acres of these areas managed intensively for huntable densities of quail, with most of these public areas reaching densities of greater than one bird per three acres. In October of 2018, several of these areas were severely impacted by Hurricane Michael, with Silverlake WMA receiving a direct hit from Category 3 winds just after the western portion was designated an NBCI CIP focal area. On Silverlake WMA, 5,570 acres experienced catastrophic storm damage with only about 500 acres able to be salvaged. Chickasawhatchee WMA had 3,400 acres of major damage, and about 1,500 acres were salvaged. The storm damage prevented monitoring efforts on Silverlake and impeded hunting due to access issues. Monitoring was conducted on Chickasawhatchee and population numbers were steady. Monitoring will continue to follow the impacts of our populations following the hurricane.
- Monitoring efforts include fall covey counts on seven WMAs, two private focal areas, and Oconee National Forest, covering over 20,000 acres. Spring monitoring for several pine savanna species was conducted on five WMAs and two private land properties (over 16,000 acres).
- The Florida/Georgia Quail Coalition (a partnership WRD, Quail Forever, Florida Fish and Wildlife Commission, and Tall Timbers Research Station and Land Conservancy directed at supporting bobwhite management on public lands) has contributed over \$50,000 to create 1,235 acres of habitat on Georgia WMA BQI Focal Areas. The funds are donated





- by Quail Forever chapters in Georgia that have an interest in wild quail hunting opportunities on public lands.
- Georgia hosted the 24th National Bobwhite Technical Committee meeting in Albany in 2018.
- Reported 400,934.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Dallas Ingram, State Quail Biologist, [dallas.ingram@dnr.ga.gov](mailto:dallas.ingram@dnr.ga.gov)



### Illinois — Illinois Department of Natural Resources (IDNR)

**Population:** The IDNR roadside counts for bobwhite are very similar to the USGS North American Breeding Bird Survey protocol. In 2018, as reported in the [2018 Quail Annual Status Report](#), observers across Illinois recorded an average of 0.53 quail per stop (a 3.6% decrease from 2017), and quail were recorded at 27.7% of the stops (a 0.7% increase).

**Hunting:** Harvest estimates are based on results from the 2017-18 Illinois Hunter Harvest Survey. An estimated 8,597 hunters (a 16.9% increase from the 2016-17 season) harvested 29,385 wild quail (a 18.2% decrease from the 2016-17 season). Despite a higher hunter effort, quail hunters averaged 0.68 quail per trip (a 35.8 % decrease).

**Management:** IDNR continues to operate under a statewide [Wildlife Action Plan](#) (where quail are considered a species in greatest conservation need) and as a partner of NBCI. Bobwhite management highlights include:

- The USDA Conservation Reserve Program (CRP) is by far the greatest source of potential wildlife habitat in Illinois. In September 2018, Illinois had 626,242 acres of CRP (a decrease of 961 acres since April 2018), including:
  - [USDA CP-33 Habitat Buffers for Upland Birds](#) – 62,583 acres enrolled, a 187-acre decrease from April 2018.
  - [USDA CP-38 State Acres for Wildlife Enhancement \(SAFE\)](#) – 27,536 acres enrolled, a slight 41-acre decrease from April 2018.
  - [USDA CP-42 Pollinator Habitat Initiative](#) – 103,989 acres enrolled, a 330-acre decrease from April 2018.
- Dr. Mike Eichholz and Dr. Eric Schaubert (Southern Illinois University) finished their first year on a research project to assess habitat and population dynamics and their effect on bobwhite populations in Illinois. This Pittman-Robertson funded project is intended to help facilitate the monitoring and vegetation surveys for an Illinois bobwhite focus area.
- Dr. Mike Ward and colleagues (University of Illinois) continued research investigating grassland wildlife response to the SAFE program, cover crops, and other agricultural practices.



- Illinois designated their first NBCI Coordinated Implementation Program focal area at the state-owned Burning Star Mines outside of DeSoto, IL.
- Reported 12,695.2 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Vacant

### **Indiana — Indiana Division of Fish and Wildlife (IDFW)**

**Population:** Results of the IDFW 2018 statewide bobwhite whistle count index showed no significant change since last year. Observers in 2018 heard approximately 0.34 males/route, compared to 0.31 males/route in 2017, suggesting little change in statewide relative abundance.

**Hunting:** Bobwhite hunting season dates in Indiana are divided by Interstate 74. North Region dates are November 1 – December 15 (daily bag limit: four on private land, two on IDFW Fish and Wildlife Areas); South Region dates are November 1, 2017 – January 10 (daily bag limit: eight on private land, four on IDFW Fish and Wildlife Areas). Quail harvest on Indiana public lands increased 28% between 2017 (262 harvested) and 2018 (366 harvested).

**Management:** The Private Lands, Public Lands, and Wildlife Science programs are working to improve quail habitat and management. Highlights for Indiana quail include:

- Total state cost share programs benefiting quail = 2,301 acres.
- The Private Lands Unit continued providing technical assistance to landowners to create habitat in county priority areas, creating 4,605 acres that benefit bobwhites (including all programs).
- The Public Lands Unit improved approximately 11,315 acres.
- Beginning in 2020, the Public Lands Unit will implement grazing on select IDFW properties to manage warm-season grasses.
- IDFW staff have developed, and subsequently received NBCI approval for, the state's first NBCI Coordinated Implementation Program (NBCI CIP), incorporating both public and private lands. Population, harvest, and habitat monitoring have begun this year.
- The Wildlife Science Program is collaborating with the University of Georgia on a study of effects of hunter harvest rates and effort on bobwhite survival, movement, and reproduction at Goose Pond Fish and Wildlife Area.
- Reported 15,920.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Matthew Broadway, Small Game Biologist, [mbroadway@dnr.in.gov](mailto:mbroadway@dnr.in.gov)

### **Iowa — Iowa Department of Natural Resources (IDNR)**

**Population:** The IDNR 2018 statewide bobwhite August roadside index of 1.36 quail per 30-mile route represents a significant increase (+25%) in the quail index over 2017 counts. The index remains well above the 10-year average of 0.8 quail per route and right at the long-term average of 1.36 quail per route. Quail numbers the last 4 years are the highest Iowa has seen in the last 23 years. Based on survey and landowner reports, quail numbers are at modern era highs within today's agricultural landscapes. Unfortunately, Iowa experienced a relatively severe winter during 2018-19, which likely impacted hen survival, and populations are predicted to decline at least 20% in 2019.

**Hunting:** Approximately 8,568 quail hunters harvested 26,955 quail during the 2017-18 quail season. Hunter numbers decreased 14% while harvest increased 11% compared to 2016 estimates. Quail hunters averaged 5.6 days afield and harvested three birds for the season. The 2017-18 quail harvest was 67% above the 10-year average. Hunting and harvest numbers for the most recent hunting season (2018-19) were not available at press time, but are expected to be similar to or higher than 2017-18 numbers.

**Management:** IDNR manages bobwhite by partnering with multiple agencies, non-government organizations, and private citizens, as well as the NBCI. Quail management highlights include:

- Iowa continues participation in the NBCI Coordinated Implementation Program (NBCI CIP), with two officially identified focal areas, plus many other public lands receiving quail management focus.
- Iowa established a new Conservation Reserve Program (CRP) State Acres for Wildlife Enhancement (SAFE) practice for bobwhite titled Early Successional Quail Habitat. All acres were signed into contracts in 2017, and seeding and establishment were mostly completed by the spring of 2018. This special CRP practice requires landowners to

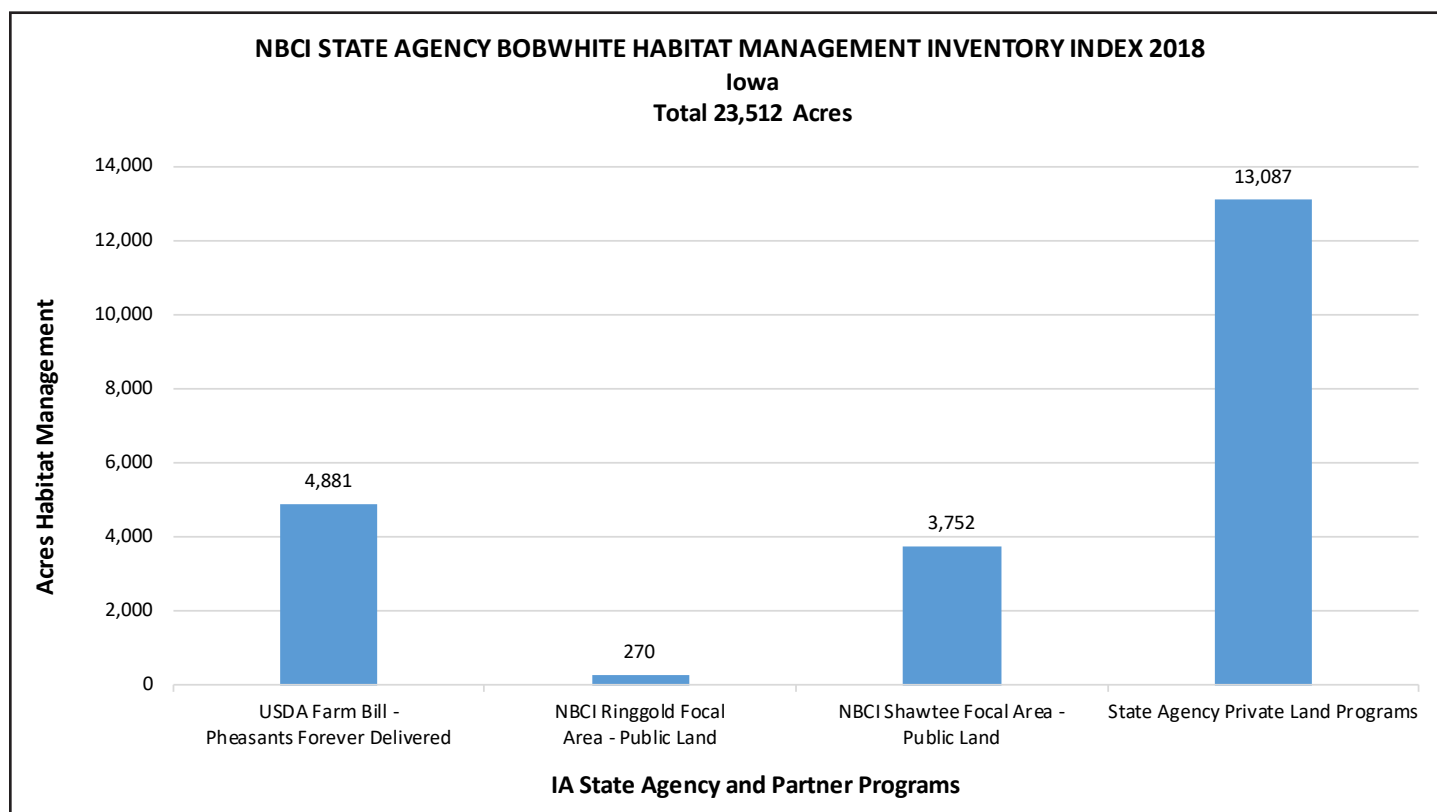




manage 25% of the CRP contract in early successional habitat specifically for bobwhites. State quail populations should begin to benefit from this 40,000-acre program this summer and fall, and hopefully for the next 10 years.

- Iowa has a 46,500-acre allocation of USDA CP-33 Habitat Buffers for Upland Birds, of which 24,237 acres are enrolled.
- Iowa received a \$3 million USDA Voluntary Public Access grant to expand the Iowa Habitat and Access Program. This program is creating quail habitat on private CRP acres across southern Iowa that will be open for public hunting. Over 24,000 acres have been enrolled in the program since early 2016. Each area has a habitat management plan and is open to public hunting.
- Reported 23,512.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Todd Bogenschutz, Upland Wildlife Research Biologist, [todd.bogenschutz@dnr.iowa.gov](mailto:todd.bogenschutz@dnr.iowa.gov)



### Kansas – Kansas Department of Wildlife, Parks and Tourism (KDWPT)

Population: 2018 statewide bobwhite breeding abundance index was 12% below 2017 index and 5% and 23% above previous 5- and 10-year averages, respectively.

Hunting: According to the 2017-18 hunting season statistics, 65,246 quail hunters harvested 518,163 bobwhites.

Management: KDWPT continues to manage bobwhite throughout the state by partnering with multiple agencies, NGOs, and private citizens, as well as NBCI. Quail management highlights include:

- Bobwhites are a species of conservation importance for both State Wildlife Grant and USDA program funding ranking processes.
- KDWPT is currently working with USFS and other partners on a management plan for Tamarisk on the Cimarron National Grasslands to minimize impact or restoration goals on bobwhite densities
- In 2018, KDWPT added three habitat specialists through a partnership agreement with Habitat Forever for performing habitat work on private lands in areas of the state that consistently lack available contractors. All habitat work for these positions is prioritized for walk-in hunting properties.
- In 2018, KDWPT established an internal Small Game Committee to further small game goals and objectives throughout the agency. In August, the committee hosted a small game workshop for all field staff to provide information on relevant research and management projects, and to discuss the future of the program.



- Reported 353,716.0 acres of bobwhite management for the NBCI Habitat Management Inventory.
- NBCI State Quail Coordinator: Jeff Prendergast, Small Game Specialist, [jeff.prendergast@ks.gov](mailto:jeff.prendergast@ks.gov)

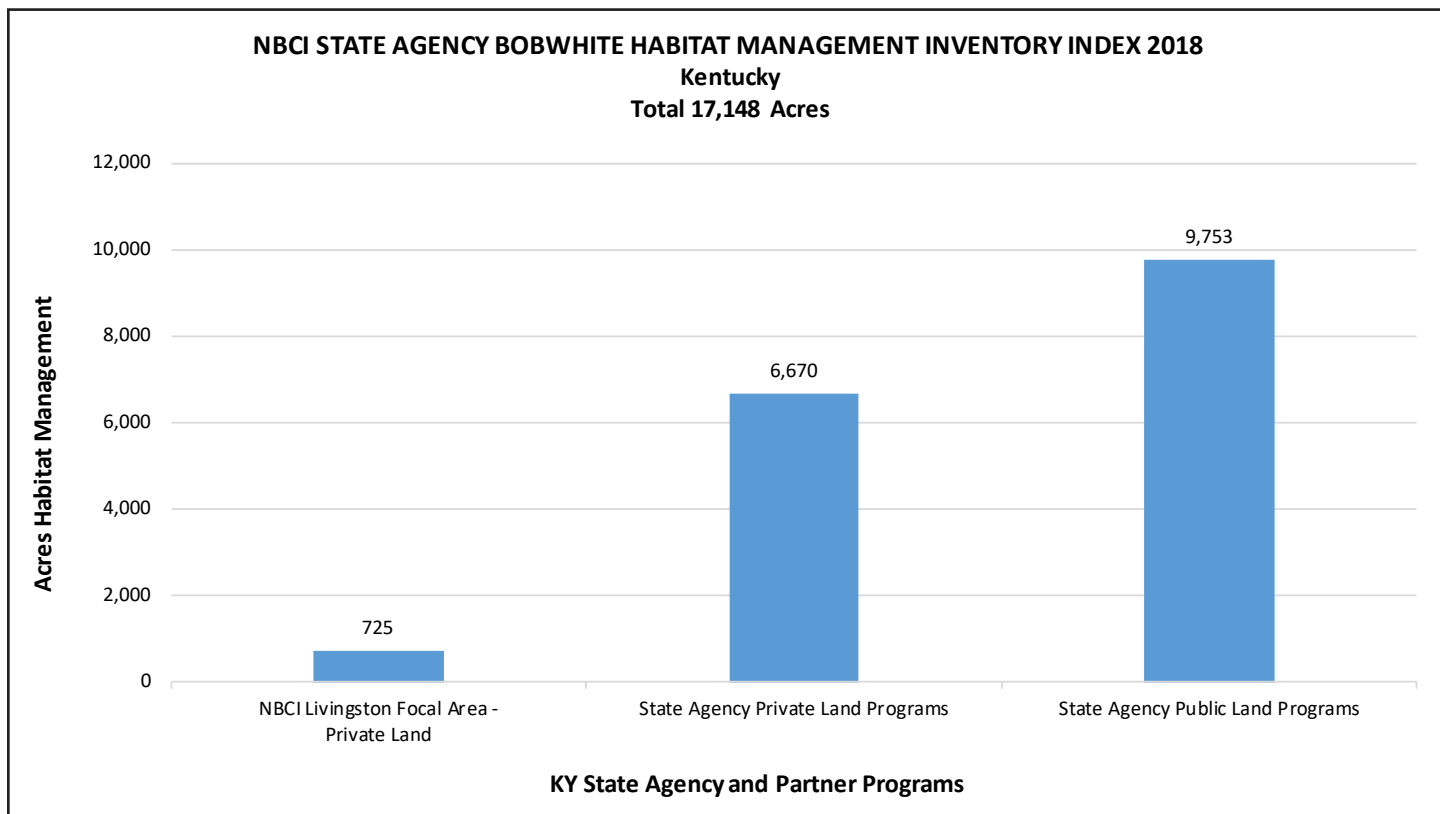
### **Kentucky — Kentucky Department of Fish and Wildlife Resources (KDFWR)**

**Population:** According to the KDFWR statewide mail carrier survey, the bobwhite population has declined by more than 74% since 1960. The 2018 index is 73.5% below our 1981 restoration target and marks the lowest measure in the state's 58-year history. Statewide, there was a 15% decline from 2017 to 2018, however the eastern portion of the state experienced no change.

**Hunting:** On average, hunters bagged 0.35 birds/hour in 2017-18 hunting season and observed 0.29 coveys per hour. The harvest rate is 5% below the 5-year average, and covey detections were 6% below the 5-year average.

**Management:** The agency continues to operate under a statewide Quail Plan and as a partner with NBCI. Bobwhite management highlights include:

- In an effort to build on the University of Tennessee Center for Native Grasslands Management's native grassland research on Bluegrass Army Depot, conservation partners reached out to neighboring landowners to establish native grasses for production and wildlife. Over 200 acres will be planted this year in a 10,000 acre focus area.
- KDFWR is establishing a working farm partnership with Eastern Kentucky University (EKU). It will become the pilot and model farm for a farm certification program tentatively titled "Farm Wild." It will blend wildlife habitat and agricultural production using EKU students to monitor and implement management practices.
- KDFWR coordinated a multi-partner conservation team aimed at conserving the legacy of Kentucky's highly successful Green River Conservation Reserve Enhancement Program initiative, which is sunsetting. The partners are working towards a conservation-friendly transition back to working lands that will maintain some benefits for grassland birds.
- On a somber note, the Livingston County National Focus Area has suffered major habitat setbacks through the loss of Conservation Reserve Program contract expirations. The majority of existing habitat has been lost, but we will continue to monitor the bird responses.
- KDFWR coordinated a special issue of the Wildlife Society Bulletin entitled "A Critical Review of Private Lands





Conservation in the US” aimed at starting a national conversation regarding improved management.

- Membership of the Kentucky Bobwhite Battalion Facebook page ([www.facebook.com/KentuckyQuail](https://www.facebook.com/KentuckyQuail)) increased to nearly 3,800 members.
- Reported 17,148.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinators: John Morgan, Small Game Program Coordinator, [john.morgan@ky.gov](mailto:john.morgan@ky.gov) and Cody Rhoden, Small Game Biologist, [cody.rhoden@ky.gov](mailto:cody.rhoden@ky.gov)

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### **Louisiana – Louisiana Department of Wildlife and Fisheries (LDWF)**

**Population:** The LDWF annual 2018 Bobwhite Whistle Survey combined results were not significantly different from 2017. Quail whistles heard were lower and continue to be near the lowest numbers across Louisiana since the survey began in 1983.

**Hunting:** The Big and Small Game Harvest Survey for 2017-18 estimated that 860 hunters harvested 2,800 wild quail.

**Management:** LDWF continues to work with private, corporate, and government landowners and partners to improve quail habitat.

- LDWF East and West Gulf Coastal Plain Prescribed Burn Initiatives, National Fish and Wildlife Foundation grant, and LDWF Natural Heritage Program in 2017-18: 2,543 acres were burned.
- USDA Natural Resource Conservation Service (NRCS) programs in 2018: 1,728 acres of longleaf pine were planted and 4,400 acres burned.
- An additional 9,180 acres were burned by private and NGO funding on private lands in 2017-18.
- The Longleaf Stewardship Fund planted 427 acres of longleaf pine and burned 2,021 acres.
- Worked with the NRCS, National Wild Turkey Federation, and other agencies to hold longleaf pine workshops for private landowners and land managers.
- Began bird and habitat monitoring on the Kisatchie National Forest/Vernon Quail Emphasis Area (5,992 acres) and accompanying Reference Area on Peason Ridge Wildlife Management Area (WMA) (7,806 acres).
- Continued quail habitat improvements at Sandy Hollow WMA with approximately 400 acres of timber harvests/habitat improvements, approximately 2,100 acres of prescribed burning in 2017-18, and approximately 770 acres of herbicide treatments to control hardwood brush.
- Additional prescribed burning was contracted on Sandy Hollow, Clear Creek, and Bodcau WMAs: 2,850 acres.
- Reported 40,217.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Cody Cedotal, Resident Small Game/Wild Turkey Program Manager, [ccedotal@wlf.la.gov](mailto:ccedotal@wlf.la.gov)

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### **Maryland — Maryland Department of Natural Resources (MDNR)**

**Population:** Maryland’s statewide bobwhite population has declined by more than 90% over the past 50 years. Some isolated pockets of wild quail may still exist in the southern region, but the highest densities occur in the eastern part of the state.

**Hunting:** The MDNR 2017-18 Annual Hunter Mail Survey estimated 240 bobwhite hunters harvested 760 wild birds. The survey only requests data on wild quail hunts, but hunting of pen-raised quail remains popular.

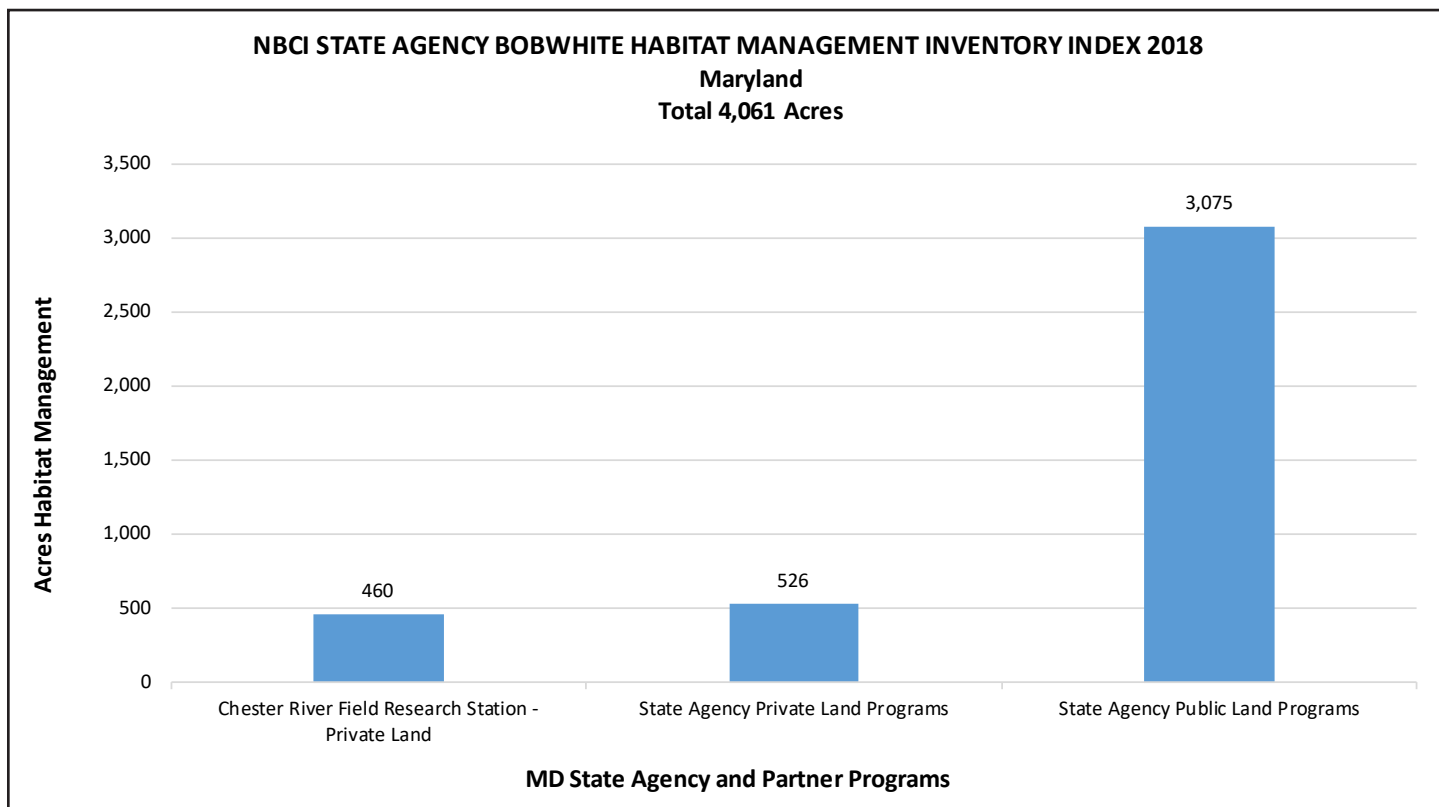
**Management:** MDNR continues to partner with various agencies and organizations, focusing bobwhite restoration efforts on suitable public and private lands within the current range.

- Four MDNR Wildlife Management Areas (WMAs) encompassing about 11,000 acres continue to be managed with a focus on bobwhite and other early-successional species. Monitoring via summer and/or fall surveys indicates stable or increasing populations on most areas. A recent addition to the WMA system has the potential to add a significant amount of bobwhite habitat in the coming years.
- Additional emphasis on active forest management and prescribed burning within the current quail range has led to many acres of new or planned projects.
- NRCS and MDNR have partnered to hire a farm bill biologist to provide technical assistance within the Working Lands For Wildlife bobwhite focus area.
- Approximately 20,000 acres are enrolled in quail-friendly practices under the USDA Conservation Reserve Program.



- MDNR staff continues to provide technical assistance, outreach, and monitoring efforts on public and private lands in regions of the state where significant potential for population restoration exists.
- Washington College, with funding from MDNR and other partners, continued a regional habitat initiative to restore bobwhite habitat and protect water quality in the upper Chesapeake Bay watershed.
- Reported 4,061.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Bob Long, Upland Game Bird Project Manager, [bob.long@maryland.gov](mailto:bob.long@maryland.gov)



### Missouri — Missouri Department of Conservation (MDC)

**Population:** The MDC 2018 state bobwhite abundance index of 1.70 quail per 30-mile route was essentially unchanged from the 2017 index of 1.71, and was 13.5% below the 10-year average (2008-17 average = 1.97).

**Hunting:** Missouri's Small Game Post-Season Harvest Survey is conducted every other year; the most current data is from the 2016-17 season. The total number of hunters pursuing quail in 2016 was 14,945, a 21% increase from the 2014-15 season. Averages for daily and season bags were down slightly from 2014 at 1.72 and 6.74 respectively. Total harvest was 100,748, down 8% from the 2014-15 season. Based on field reports, quail hunting during the 2018-19 season was best in northern Missouri, where suitable habitat exists on a larger scale.

**Management:** Quail management highlights in 2017 include:

- MDC's quail program recently underwent a thorough review resulting in the identification of Quail Restoration Landscapes. The review process utilized information from the State Wildlife Action Plan (SWAP), the Biologist's Ranking Information process of NBCI 2.0, data from monitoring and research, and staff input. The development of QRLs represents a shift in Missouri's quail program to focus on larger landscapes in hopes of achieving quail restoration at a landscape scale.
- MDC continues participation in the NBCI Coordinated Implementation Program (NBCI CIP), with two focal area projects—the 2C quail focal area in Carroll County and the newly added Bee Ridge quail focal area in Knox County. In 2018, the Bee Ridge focal area achieved an estimated fall quail density of 1 bird/2 acres, while the 2C focal area reached an estimated density of 1 bird/acre.
- Outreach efforts continued via the Small Game Prospects resource, Covey Headquarters Newsletter, periodic MOre

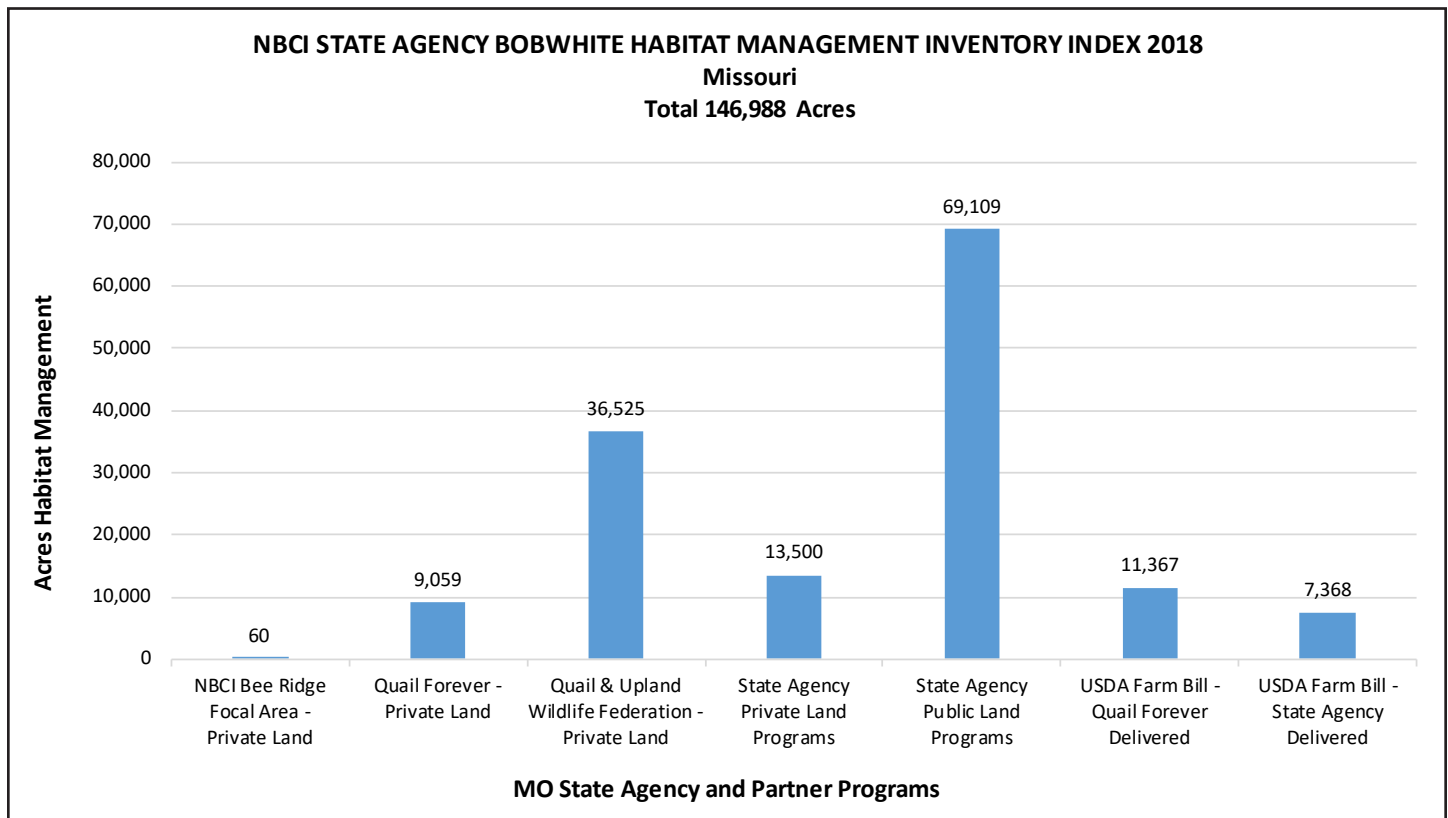




Quail blog, news releases, and public events.

- Three new cooperative Farm Bill Biologists have been hired, bringing the total cooperative positions in Missouri to 13. MDC continues to leverage conservation dollars through cooperative partnerships with the National Wild Turkey Federation, Quail Forever (QF), and the Quail and Upland Wildlife Federation. In addition to the QF/USDA cooperative Farm Bill biologist positions, these partnerships have been used to increase private land cost-share funding pools and promote youth hunting opportunities.
- MDC staff and University of Missouri researchers have completed a five-year project studying quail reproductive success, brood survival, and winter habitat use on traditionally managed areas (crops, linear shrub rows, discrete patches of nesting cover) vs. grassland managed areas (native grasslands managed with fire and grazing).
- Reported 146,988.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: David Hoover, Small Game Coordinator, [dave.hoover@mdc.mo.gov](mailto:dave.hoover@mdc.mo.gov)



### **Mississippi — Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP)**

Population: The MDWFP 2018 Wildlife Management Area (WMA) bobwhite abundance index was 1% below 2017 index.

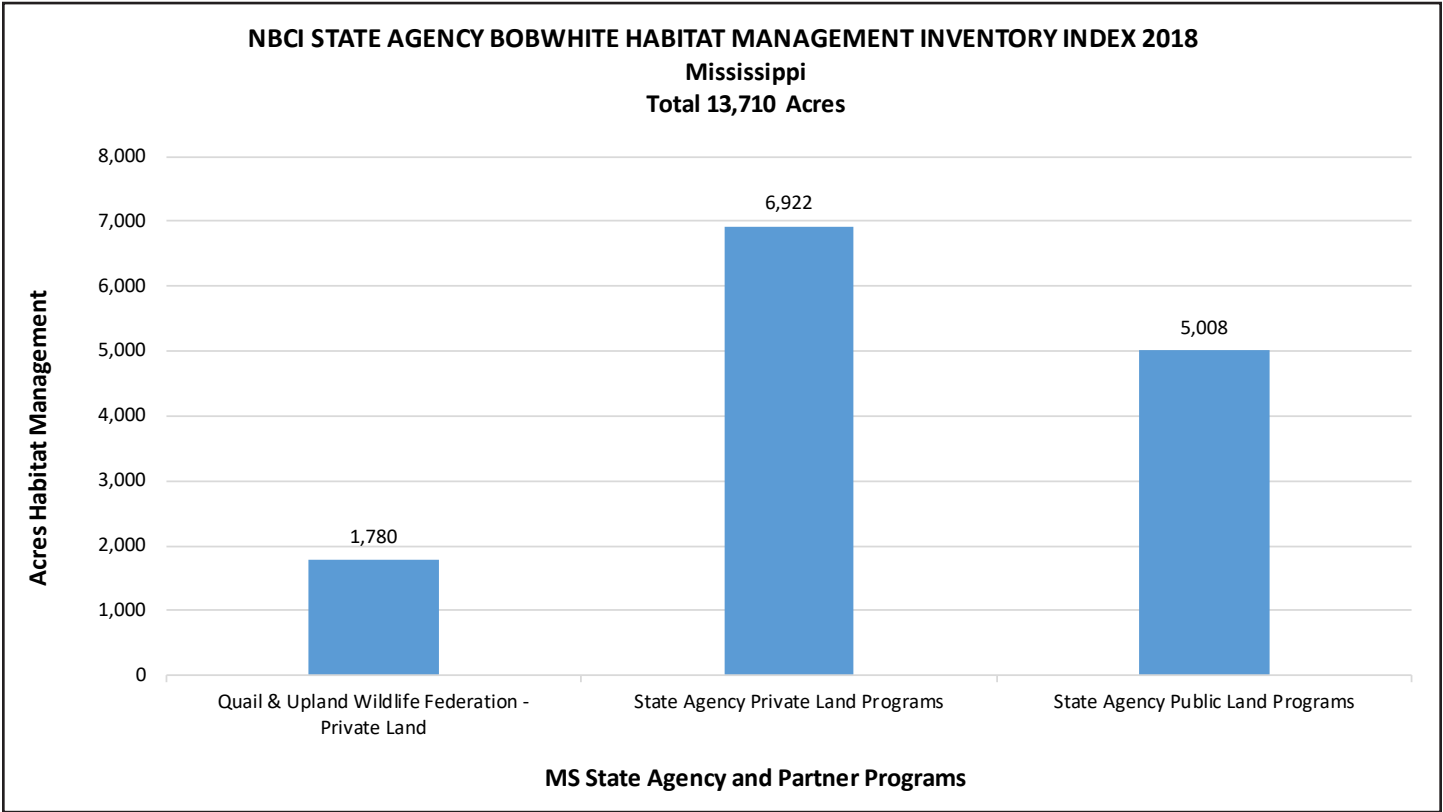
Hunting: 2017-18 hunting season statistics were below the previous year, below the previous 5-year average, and above the previous 10-year average.

Management: Quail management highlights include:

- Cooperated with conservation partners to implement quail-friendly habitat management via Mississippi Partners for Fish and Wildlife Program, State Wildlife Grants, and Fire on the Forty Initiative.
- Provided early successional habitat management technical guidance to private landowners statewide.
- Continued education and outreach via public contacts, website, and Mississippi Outdoors Radio.
- Conducted quail-friendly forest and field management (prescribed burning, disking, selective herbicide, and other practices) on eight WMAs.
- Reported 11,930 acres of management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Rick Hamrick, Habitat/Small Game Program Leader, [rick.hamrick@wfp.ms.gov](mailto:rick.hamrick@wfp.ms.gov)





**Nebraska — Nebraska Game and Parks Commission (NGPC)**

**Population:** The NGPC statewide abundance index from the 2018 Bobwhite Whistle Count Survey was similar to 2017 and 10% above the 10-year average. Regional indices of relative abundance ranged from a 36% decrease in the East Central region to a 33% increase in the Republican region. Data from the 2018 July Rural Mail Carrier survey indicated statewide indices were 28% lower than in 2017, but remained 15% above the 10-year mean. Changes in indices ranged from a 45% decrease in the West Platte region to a 30% increase in the Northeast region.

**Hunting:** During the 2018-19 bobwhite hunting season (27 October 2018 - 31 January 2019), 17,065 hunters harvested 82,278 bobwhites during 108,996 days afield. Compared to the previous season, hunter numbers and days afield were similar (+1.9% and +0.2%, respectively), and harvest was slightly down (-5.4%).

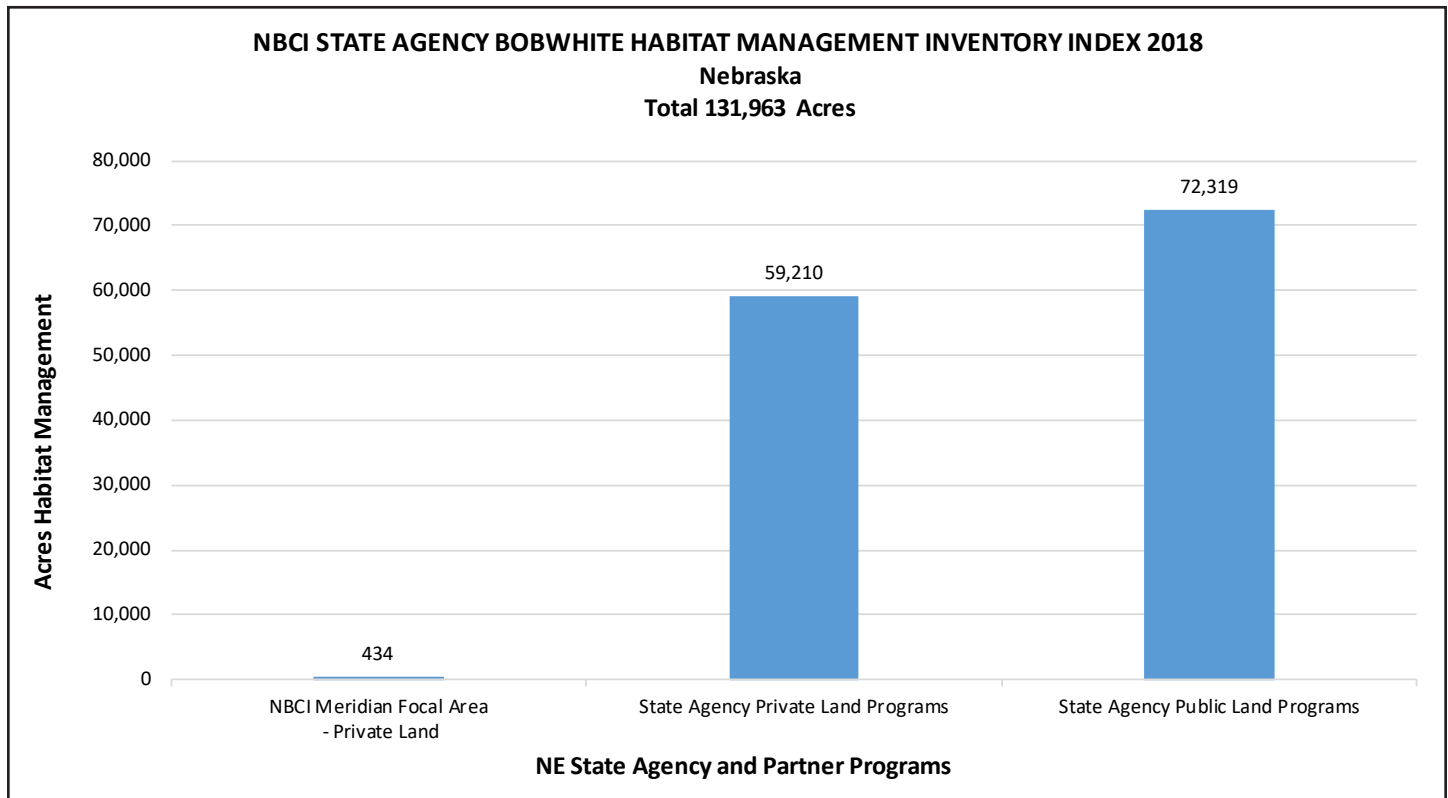
**Management:** NGPC continues to partner with NBCI to implement early successional habitat management on public lands for the benefit of bobwhites and other upland game species. Nebraska continued to implement the NBCI Coordinated Implementation Program (NBCI CIP) on the Meridian Quail Initiative Focus Area in Jefferson and Thayer counties. Spring whistle and fall covey count surveys were completed in the focus area and the reference area again in 2018. Edge feathering, prescribed fire, and other habitat management activities were conducted on private and public lands within the focus area using funds from a grant awarded by the Nebraska Environmental Trust and Federal Aid in Wildlife Restoration grant W118HM. The initial NBCI CIP habitat assessment was conducted in the summer of 2016, and the second assessment is scheduled for 2019. A summary of 2018 habitat improvements and research includes:

- As part of the Early Successional Habitat Initiative, 72,319 acres of state-owned lands were managed for the benefit of quail, pheasants, and other upland game.
- NGPC Partners Section staff continue to work cooperatively with landowners and partner agencies/ organizations to enhance wildlife habitat on privately-owned lands. This year, private lands programs positively impacted 59,210 acres of upland habitat within the state’s quail range.
- University of Nebraska doctoral student Mandy Lipinski continued with her Federal Aid in Wildlife Restoration project investigating micro-climatic impacts on bobwhite habitat use and population dynamics in south-central Nebraska. Mandy is currently analyzing data and working on her dissertation.





- Reported 131,962.9 acres of bobwhite management for the NBCI Habitat Management Inventory.
- NBCI State Quail Coordinator: John Laux, Upland Habitat and Access Program Manager, [john.laux@nebraska.gov](mailto:john.laux@nebraska.gov)



#### **New Jersey — New Jersey Department of Environmental Protection, Division of Fish and Wildlife (NJDEP, NJDFW)**

**Population:** Bobwhite populations remain very low, according to USGS North American Breeding Bird Survey data: 0.00/ route in 2018; 0.00/ route in 2017; 0.00/route in 2016; 0.00/route in 2015; 0.01/route during 2012-18.

**Hunting:** Wild quail hunting season has been closed since September 2011. Hunting pen-raised birds is permitted at two NJDEP Wildlife Management Areas (WMAs) and on licensed shooting preserves.

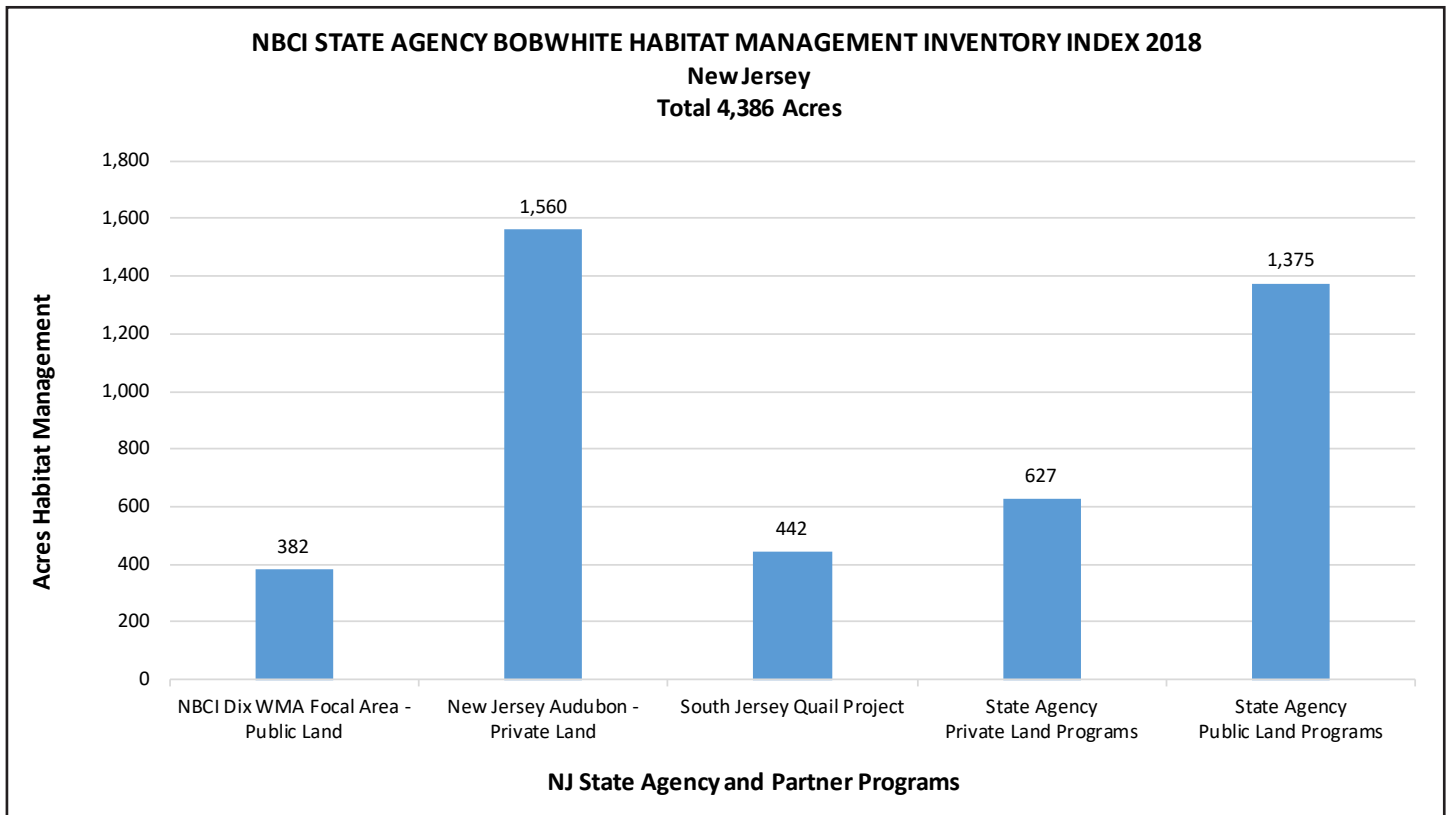
**Management:** The NJDEP NJDFW continues to operate under the New Jersey Northern Bobwhite Action Plan (revised 2011) and partner with multiple agencies, non-government organizations (NGOs), and private citizens. A formal Recovery Plan was completed in 2018 with a focus on wild bobwhite translocation. Quail management highlights include:

- Development of a site ranking criteria for possible translocation. The site ranking criteria is a weighted collaboration of studies and data to ensure proper selection of possible translocation sites. Studies include: NBCI Coordinated Implementation Program (NBCI CIP) habitat monitoring, surrogate species monitoring, mammalian predator index, arthropod diversity/abundance. Other indexes include: landscape connectivity, site connectivity, eligibility for funding, small game hunting, accessibility, state approved management plan, conspecifics, and proximity to pen-reared bird release sites.
- NJDFW staff visited six interested landowners (1,987 acres owned) within NBCI CIP focal areas and provided management plans. About 445 acres of management occurred via ongoing cooperation between sportsmen, NGOs, and NJDFW on quail habitat projects at a local sewage authority.
- The National Fish and Wildlife Foundation (NFWF), USDA Natural Resources Conservation Service (NRCS), NJDFW, and Quail Forever recently hired a Farm Bill Biologist to coordinate and implement wildlife habitat-related conservation programs, with a primary focus on the Environmental Quality Incentive Program (EQIP) Working Lands for Wildlife (WLFW) Bobwhite Quail Pine Savanna Project.
- Game Code changed to prohibit the release of pen-reared bobwhites on WMAs in the NBCI CIP focal areas; these include Buckshutem, Dix, Egg Island, Fortescue, Millville, Nantuxent, New Sweden, and Stafford Forge WMAs.



- Reported 4,386.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Jimmy Sloan, Upland Habitat and Wildlife Biologist, [james.sloan@dep.nj.gov](mailto:james.sloan@dep.nj.gov)



### **North Carolina — North Carolina Wildlife Resources Commission (NCWRC)**

**Population:** Bobwhite populations across the state have declined for many years and remain near all-time lows, with quail particularly scarce in the piedmont and mountains. The USGS North American Breeding Bird Survey serves as the state's primary quail monitoring reference for regional and statewide trends. Populations are stable or increasing in a few sites where landowners are committed to intensive habitat restoration and management. Quail populations in southeastern North Carolina were unfortunately impacted by Hurricane Florence in September of 2018, with fall covey counts on the Cooperative Upland habitat Restoration and Enhancement (CURE) area in that region down by approximately 50%. Quail on private lands in the region were likely similarly affected.

**Hunting:** Each year, the NCWRC uses a post-season survey to estimate the number of hunters, hunting effort, and harvest of all game species in the state. During the 2017-18 season, approximately 5,600 hunters spent 30,000 days hunting bobwhites and harvested 25,000. These estimates are considerably lower than in recent years; however, this likely results from more precise survey techniques in 2017-18 rather than substantial decreases in quail hunting in the short term. The bulk of quail hunting and harvest occurs in the coastal plain of eastern North Carolina, with very little quail hunting taking place in the piedmont, and almost none in the mountains. The agency's Avid Hunter Survey captures additional important information about quail hunting in the state and points to higher success rates on private lands as compared to game lands.

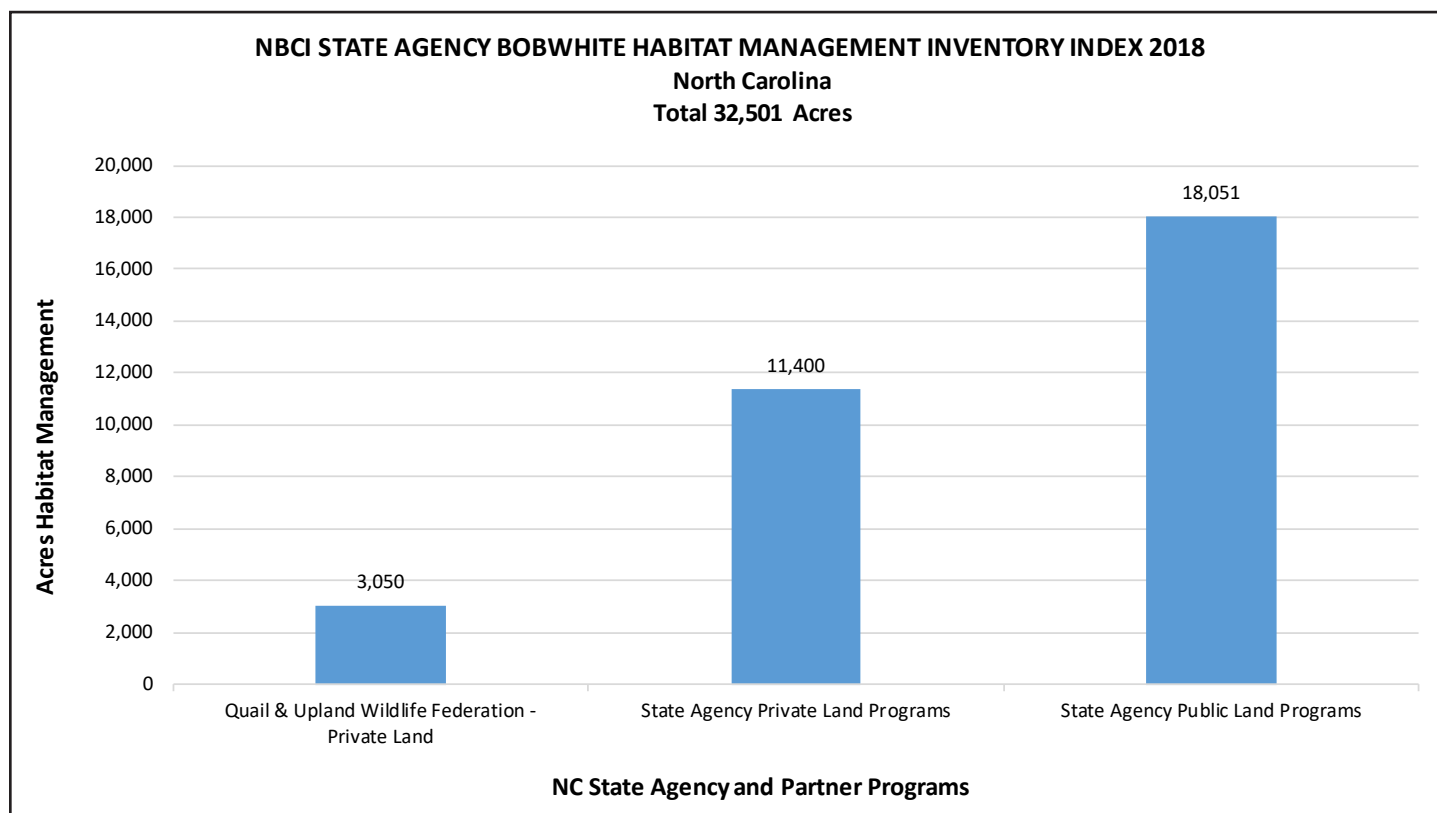
**Management:**

- The NCWRC continues to look for ways to encourage quail habitat and management on private lands. In April of 2019, the NCWRC's Small Game and Wild Turkey Committee discussed program options for private landowners to use translocation, supplemental feeding, or nest predator trapping to bolster wild bobwhites on private lands.
- NCWRC biologists continue to use acoustic sound recorders to survey for bobwhites. In October of 2018, a total of 39 recorders were deployed on 7seven sites across the state, with coveys heard at many locations. This technology offers a cost-effective way to collect basic information about bobwhites on these sites.



- Public outreach continues via The Upland Gazette, covering early-successional species and habitats. The Upland Gazette is included each year in spring and fall guides of Wildlife in North Carolina, the agency's magazine, which has more than 55,000 subscribers.
- Reported 32,501.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinators: Christopher D. Kreh, Upland Game Bird Biologist, [chris.kreh@ncwildlife.org](mailto:chris.kreh@ncwildlife.org) and Mark D. Jones, Wildlife Research Program Supervisor, Private Lands Program, [mark.jones@ncwildlife.org](mailto:mark.jones@ncwildlife.org)



### Ohio — Ohio Department of Natural Resources, Division of Wildlife (ODNR)

**Population:** Ohio's bobwhite population estimate, based on 2014-18 roadside surveys, is 10,000 to 15,000 quail. Rates of change among population indices since 1984 indicate a population half-life of about seven years (i.e., population will decline 50% in seven years) unless rates of decline change in future years.

**Hunting:** Results of the ODNR Division of Wildlife hunter harvest surveys over the last two years show that quail hunting participation has declined significantly in Ohio. In 2011-12, approximately 3,000 hunters pursued wild quail in Ohio. In the most recent surveys (2014-15 season), 0.5% of licensed hunters reported pursuing quail, which translates to approximately 1,800 hunters of wild quail. Average hunting effort remains at about 1 day out of Ohio's 24-day season, with a daily bag of 1-2 birds. Ohio offers a 4-bird daily bag limit.

**Management:**

- ODNR Division of Wildlife partnered with Pheasants Forever/Quail Forever and Highland County landowners to develop Ohio's first NBCI Coordinated Implementation Program (NBCI CIP) quail focal area in 2015, the Fallsville Quail Heritage Area. This area is approximately 10,000 acres in size with about 25% of the area consisting of public wildlife areas. Habitat assessments, fall covey counts, and spring bird surveys have been completed through 2018.

NBCI State Quail Coordinator: Nathan Stricker, Wildlife Biology Supervisor, [nathan.stricker@dnr.state.oh.us](mailto:nathan.stricker@dnr.state.oh.us)

### Oklahoma — Oklahoma Department of Wildlife Conservation (ODWC)

**Population:** The statewide number of quail observed in 2018 per 20-mile route was down from previous years—2.98



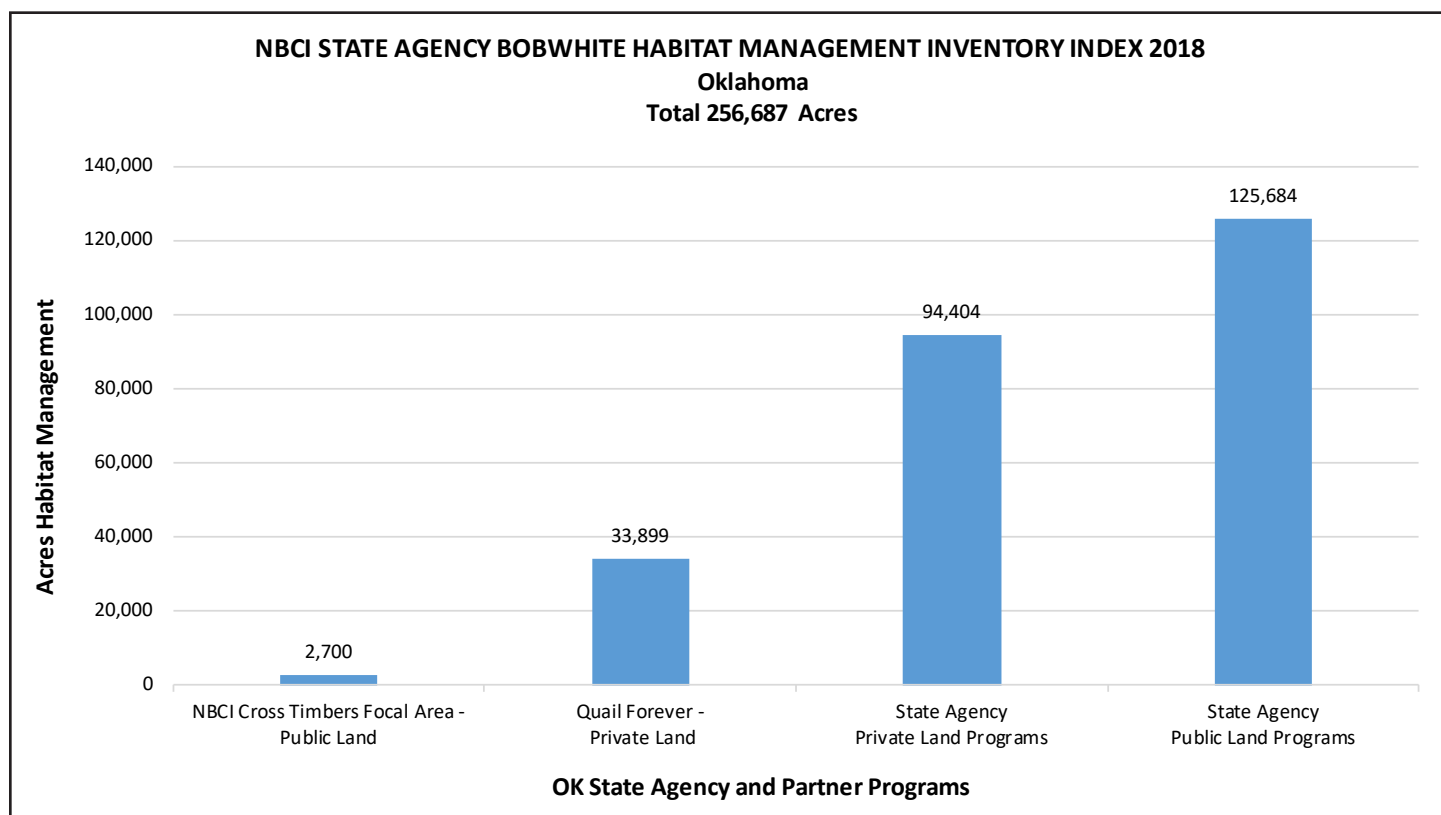


quail/route (q/r) to 1.31 q/r. This was below the 10-year average of 2.96 q/r. All regions of Oklahoma displayed decreases in bobwhite populations. These decreases are due to lowered chick production and survival into the fall population, likely associated with weather variables like rainfall timing. The northwest region had the lowest decrease in population at only a 3% drop from 4.22 q/r to 4.1 q/r, which is still below the 10-year average of 5.89 q/r and well below the 29-year average of 8.41 q/r. The largest decrease occurred in the southwest region, dropping from 7.33 q/r in 2017 to 0.8 q/r in 2018, a decline of 83%. A large decrease was also seen from 2016 to 2017 in this region. The north central region was similar, with a drop from 2.97 q/r in 2017 to 0.83 q/r in 2018, a decline of 72%. Statewide quail abundance was down 56% below the 10-year average. The northwest region was 30% below and southwest region was 89% below the 10-year average. The south central region was 34% below, while the north central region was 48% below the 10-year average. The northeast region was 44% below and the southeast region was 7.2% below the 10-year average respectively.

**Hunting:** From 1986-2017, quail hunter numbers have declined by 72.38% (111,000 in 1986 to 30,655 in 2017). Estimated quail hunter numbers increased 33.86% from 2015 (20,276). The long term estimated number of quail harvested has decreased by 81.8% (2,700,000 in 1986 to 439,291 in 2017), and has decreased 1.89% from 2016 (491,495 in 2016 to 439,291 in 2017). The long term fluctuation in hunter participation and harvest has been due to lower quail numbers and lower habitat quality. Large annual fluctuations are primarily due to the localized weather conditions.

**Management:** The ODWC provided technical assistance on 94,404 acres during 2018 to assist private landowners with quail conservation. Highlights include:

- The ODWC continued its partnership with Oklahoma State University (OSU) to conduct research on four ODWC Wildlife Management Areas (WMAs). The current research project began April 1, 2018 and is currently utilizing GPS units attached to northern bobwhites to monitor habitat usage and movement.
- ODWC also continued the NBCI Coordinated Implementation Program (NBCI CIP) monitoring in south-central to north-central Oklahoma. The ODWC, Oaks and Prairies Joint Venture, and OSU have teamed up to monitor eight counties in Oklahoma: Love, Jefferson, Pontotoc, Johnston, Pawnee, Osage, Nowata, and Craig counties. To date, three spring and fall monitoring seasons have been surveyed within the NBCI CIP focal area, and two seasons in two reference areas. In addition, NBCI CIP habitat surveys have been completed within all 39 monitoring points.
- ODWC has begun working with the University of Georgia's Southeastern Cooperative Wildlife Disease Study (SCWDS) to complete a health assessment of bobwhite quail which will include 10 WMAs. Ten quail will be taken from each



site in August and October and sent to SCWDS to be tested for a wide array of diseases and conditions.

- Reported 256,687.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Tell Judkins, Upland Game Biologist, [tell.judkins@odwc.ok.gov](mailto:tell.judkins@odwc.ok.gov)

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### **Pennsylvania – Pennsylvania Game Commission (PGC)**

**Population:** Between 1966 and 2012, bobwhite populations declined by 9.1% annually. Between 2001 and 2012, the decline continued at 9.5% annually. The relative abundance index in 2002-12 was 0.27, compared to 20.7 for the eastern US (USGS North American Breeding Bird Survey [BBS] data 1966-2012). PGC and partners completed a detailed Breeding Bird Atlas in 2012. Northern bobwhites were determined to be breeding in only 18 of over 4,000 survey blocks. In 2014, a detailed analysis of all existing population data (e-bird, Breeding Bird Atlas, BBS, Christmas Bird Count, and survey of land managers throughout the state) was conducted by the Department of Ecosystem Science and Management at The Pennsylvania State University (PSU). No locations in the state showed persistence of bobwhites in every decade since 1960. The PGC conducted intensive surveys in the last known locations of bobwhites using a playback caller in June-July 2014. No northern bobwhite were detected. As a result of these studies, researchers at PSU and the PGC have concluded that wild northern bobwhite have been extirpated in Pennsylvania.

**Hunting:** The PGC does not raise and release bobwhites, but many sportsman clubs and shooting preserves do for the purposes of training and hunting. Based on a survey of game bird propagators, we estimate that over 60,000 pen-reared bobwhites were released in 2013, primarily for dog training. Bobwhites harvested in Pennsylvania are from pen-reared and released birds. The state is now open to put-and-take quail hunting, with a split season running from mid-October through the end of February allowing an 8-bird daily limit with 24 in possession.

**Management:** PGC completed the Northern Bobwhite Quail Management Plan in 2011 and is a partner with NBCI. The management plan calls for establishing Bobwhite Quail Focus Areas (BQFA) with the intent to reintroduce bobwhites:

- In 2017, Letterkenny Army Depot (LEAD) in Chambersburg was selected as the state's first BQFA, and an MOU was signed partnering PGC, LEAD, and Quail Forever (QF). Other crucial partnerships within the project include Shippensburg University, Harrisburg University, Renfrew Institute, Big Covey Chapter of QF, Cumberland Valley Chapter of Pheasants Forever, and NBCI.
- A comprehensive BQFA management plan was completed, and monitoring and habitat management operations began in 2017. Monitoring for the project has included spring whistle counts, fall covey counts, BBS point counts, a BBS route, NBCI Coordinated Implementation Program (NBCI CIP) habitat monitoring, and pollinator surveys, primarily for baseline data prior to habitat restoration efforts. Habitat management to date has included approximately 1,231 acres of prescribed fire treatment, 424 acres of overstory removal, 52 acres of herbicide treatment, 31 acres of disking, and planting over 2,000 shrubs.
- A detailed project translocation plan has been completed, and Pennsylvania has begun the process of soliciting assistance from partner states. Reintroduction will require the partnership of other states in providing wild northern bobwhites for Pennsylvania. It is thanks to NBCI and so many of its member states' continued support that Pennsylvania has made such great strides in its effort to bring back bobwhites.
- Reported 637.1 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Tom Keller, Wildlife Biologist, [thkeller@pa.gov](mailto:thkeller@pa.gov)

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### **South Carolina — South Carolina Department of Natural Resources (SCDNR)**

**Population:** The SCDNR 2018 statewide bobwhite whistling cock census was 0.32% below the 2017 index and 62% below the long-term average. The 2018 summer bobwhite quail brood survey indicated that the average brood size and age ratio increased from 2017. The total number of adults decreased and total number of chicks observed increased substantially. The 2018 survey indicated higher nesting success over the prior year, and it should be noted that the statewide reproduction was slightly higher than the 10-year average.

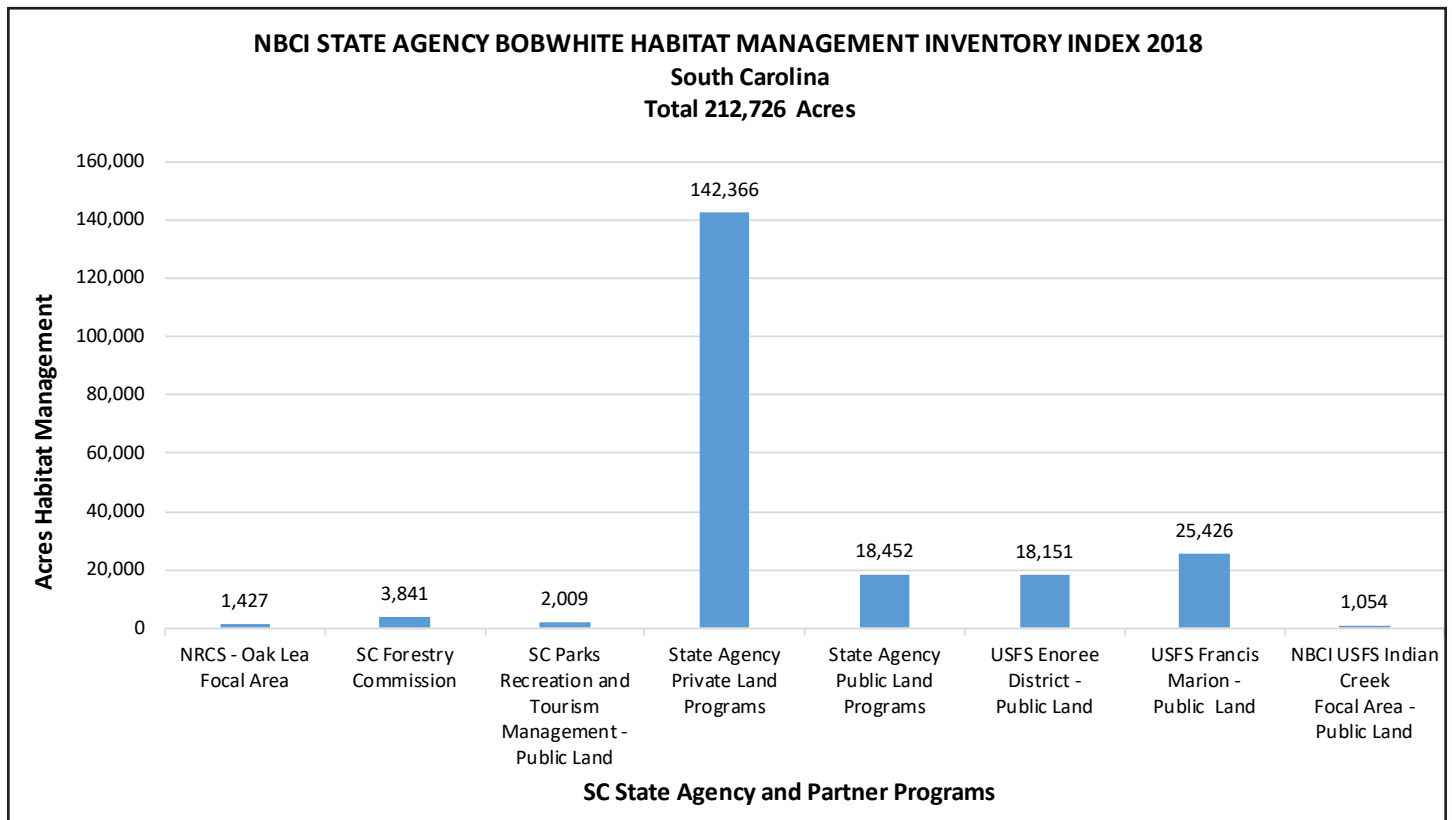
**Hunting:** The most recent information on statewide quail hunting (2014) indicated that about 7,079 hunters harvested 75,653 wild quail during 35,224 days afield. Average hunter success in the annual Quail Hunter Survey, most recently published for 2017-18 hunting season, was 0.22 coveys per hour of hunting.



Management: Quail management highlights for 2018 include:

- The South Carolina Bobwhite Initiative (SCBI) in partnership with the Clemson Extension Service facilitated four landowner workshops across the state. There was one held in each of the four focal areas. Plans were made to continue the partnership and hold four more workshops across the state in 2019.
- Monitoring and habitat manipulation continued in 2018 with many projects being completed and habitat being reformed on all four focal areas in the state. Spring bird counts, fall covey counts, and habitat surveys were also completed on all four focal areas.
- The inaugural South Carolina Bobwhite Funding Partnership fundraising event was held in March 2018. There were over 200 attendees, and the Partnership raised over \$30,000 for the SCBI and the Tall Timbers Carolina Regional Quail Project.
- One NRCS and SCDNR Farm Bill Biologist position vacancy was filled. Mr. Dan Peebles is working in Calhoun, Clarendon, and Orangeburg counties assisting landowners with federal assistance programs, as well as monitoring the quail focal area in his territory.
- The Bobwhite Quail Whistling Cock Census was conducted for the 40th year, the Annual Summer Bobwhite Quail Brood Survey was conducted for the 25th year, and the Annual Fall Covey Count Survey was conducted for the 18th year.
- Maintained the [quail page](#) on the SCDNR web site. Visitors can also find out more about the South Carolina Bobwhite Initiative on our [SCBI webpage](#), on Instagram ([@scbobwhites](#)), or at [www.facebook.com/scbobwhites](#).
- Reported 212,726.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Michael Hook, Small Game Program Leader, [hookm@dnr.sc.gov](mailto:hookm@dnr.sc.gov)



### Tennessee — Tennessee Wildlife Resources Agency (TWRA)

Population: Tennessee's quail population continues to decline or remains locally stable. TWRA has collected spring counts on anchor Wildlife Management Areas (WMAs) for 2014-18 and enters data into the Eastern Avian Knowledge Network database. Spring counts will be continued in 2019.



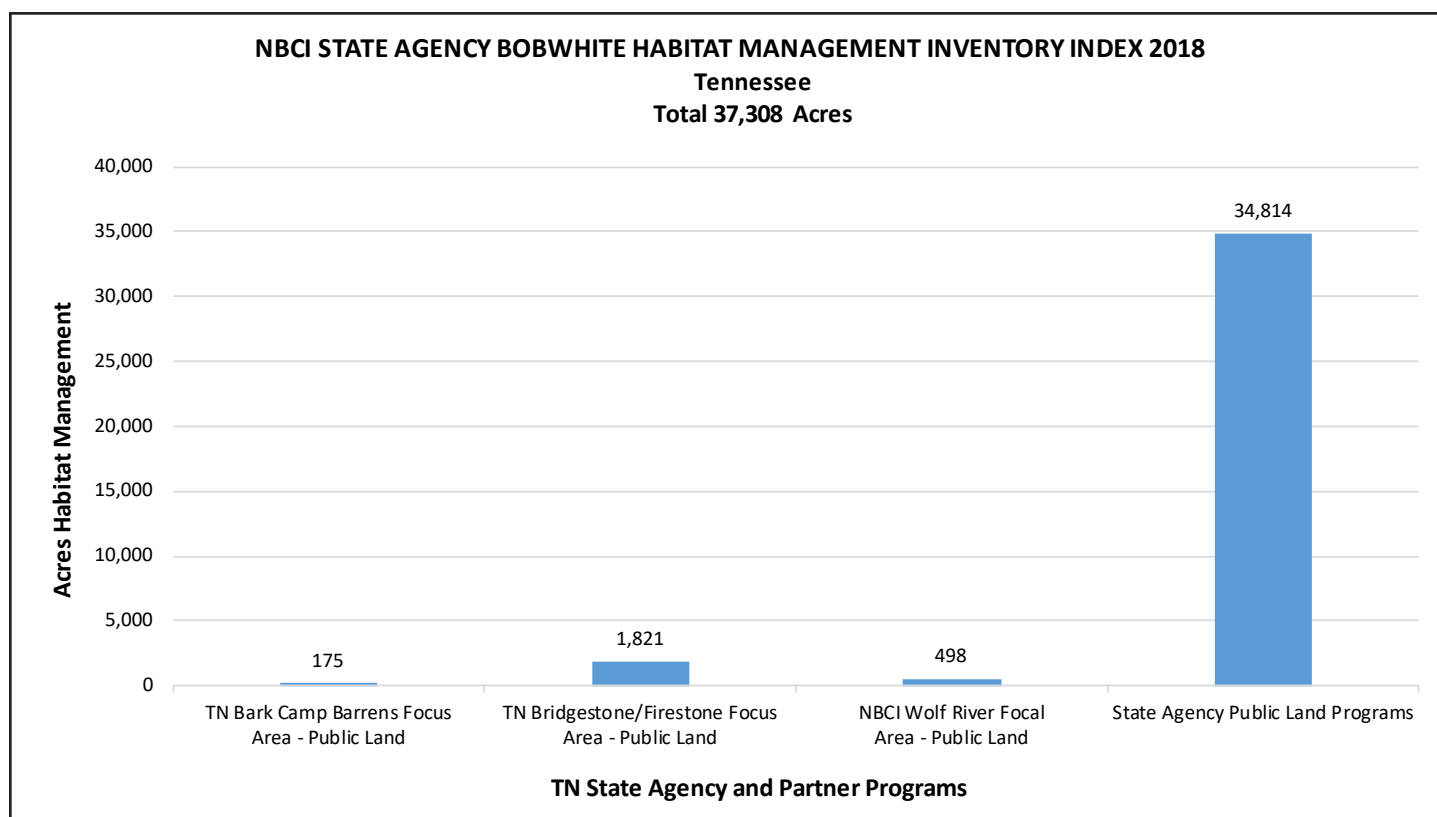


Hunting: TWRA has no harvest estimate but is developing a statewide small game and furbearer harvest and effort survey that will begin for the 2019 hunting season.

Management:

- Tennessee has four anchor WMAs and implemented four focus areas in 2015, and these areas continue to be managed. In 2018, Wolf River WMA became Tennessee's first NBCI Coordinated Implementation Program (NBCI CIP). NBCI CIP habitat inventory and both spring and fall covey counts were completed, and management continues on this area.
- Reported 37,308.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Roger Applegate, Wildlife Population Biologist, [roger.applegate@tn.gov](mailto:roger.applegate@tn.gov)



### **Texas — Texas Parks and Wildlife Department (TPWD)**

Population: According to TPWD surveys, bobwhite populations in key hunting regions decreased prior to the 2017-18 hunting season, primarily due to a very dry winter followed by a dry spring. The South Texas ecoregion appeared to have fared better than the Rolling Plains ecoregion. Bobwhite overwinter survival appears adequate, and late winter/early spring rains have triggered reproductive efforts going into the 2019 breeding season.

Hunting: The TPWD bobwhite hunter numbers for 2017-18 decreased from 83,384 in the previous year to 45,481; estimated bobwhite quail harvest decreased 65% from previous year (523,271). The small game hunter survey questionnaire has excluded pen-reared birds in the harvest estimate since 2013.

Management: Quail conservation efforts include continued development of quail focal areas as outlined by the NBCI Coordinated Implementation Program (NBCI CIP) in three ecological regions. Only one focal area has been reporting both spring and fall counts. TPWD quail conservation highlights include:

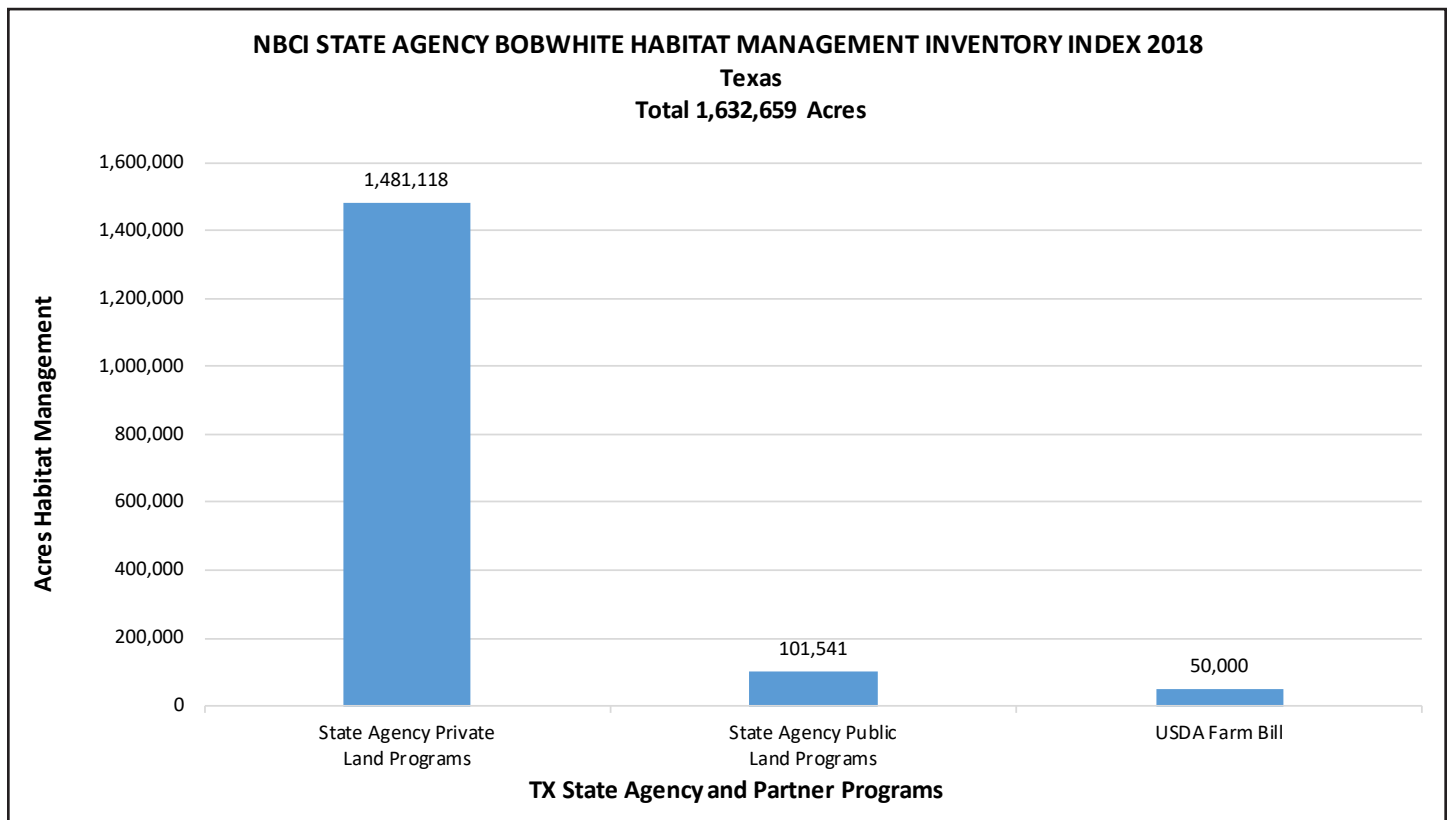
- The Oaks and Prairie Joint Venture (OPJV) partners, with the National Wild Turkey Federation serving as the lead partner, began to implement a Regional Conservation Partnership Program (RCPP) grant. The \$2.9 million grant addresses significant declines in grassland wildlife populations through the improvement and restoration of native grassland habitats through the Environmental Quality Incentives Program on qualifying projects in Texas and



Oklahoma.

- The new RCPP builds upon OPJV's successful Grassland Restoration Incentive Program and includes the addition of two coordinating biologists in Texas held by Quail Forever (QF) to facilitate program delivery, co-funded by QF and TPWD.
- About 1,481,118 acres of quail habitat were developed on private lands and another 101,541 acres on public lands under the direction of state wildlife personnel.
- Current bobwhite research across several conservation entities and institutions includes the following: evaluation of wild quail translocation; potential parasite (field trials with medicated feed) and toxin impacts; and quail genetics, dispersal, productivity, and supplemental feeding.
- Reported 1,632,659.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinator: Robert Perez, Upland Game Bird Program Leader, [robert.perez@tpwd.texas.gov](mailto:robert.perez@tpwd.texas.gov)



### Virginia — Virginia Department of Game and Inland Fisheries (VDGIF)

**Population:** While Virginia's quail population continues to decline in some areas, populations seem to have stabilized in other significant areas, and there are a few areas where modest increases are underway. One hunter reported finding 101 unique coveys of quail this season. Several others reported finding in excess of 80 coveys.

**Hunting:** For the 2018-19 hunting season, 26 avid quail hunters reported on 411 hunts, a substantial increase from the previous season. They found 703 coveys and averaged finding 1.7 coveys per hunt, with a statewide average of 1.96 hours per covey find (all substantial increases from the previous season, and well above the season average for the last five years). Of note, hunters averaged killing only one quail per covey flush. Our hunter interest survey for 2018-19 showed that quail hunting was still extremely important to 8.9% of our hunters (harvest and effort statistics were not collected in this survey). The hunter harvest and effort survey for the 2015-16 season indicated the number of quail hunters decreased slightly from 3.7% to 3.6% of all licensed hunters. The survey indicated a total of 115,703 quail were harvested, of which 12,261 were wild quail, comparable to the 2011-12 season.

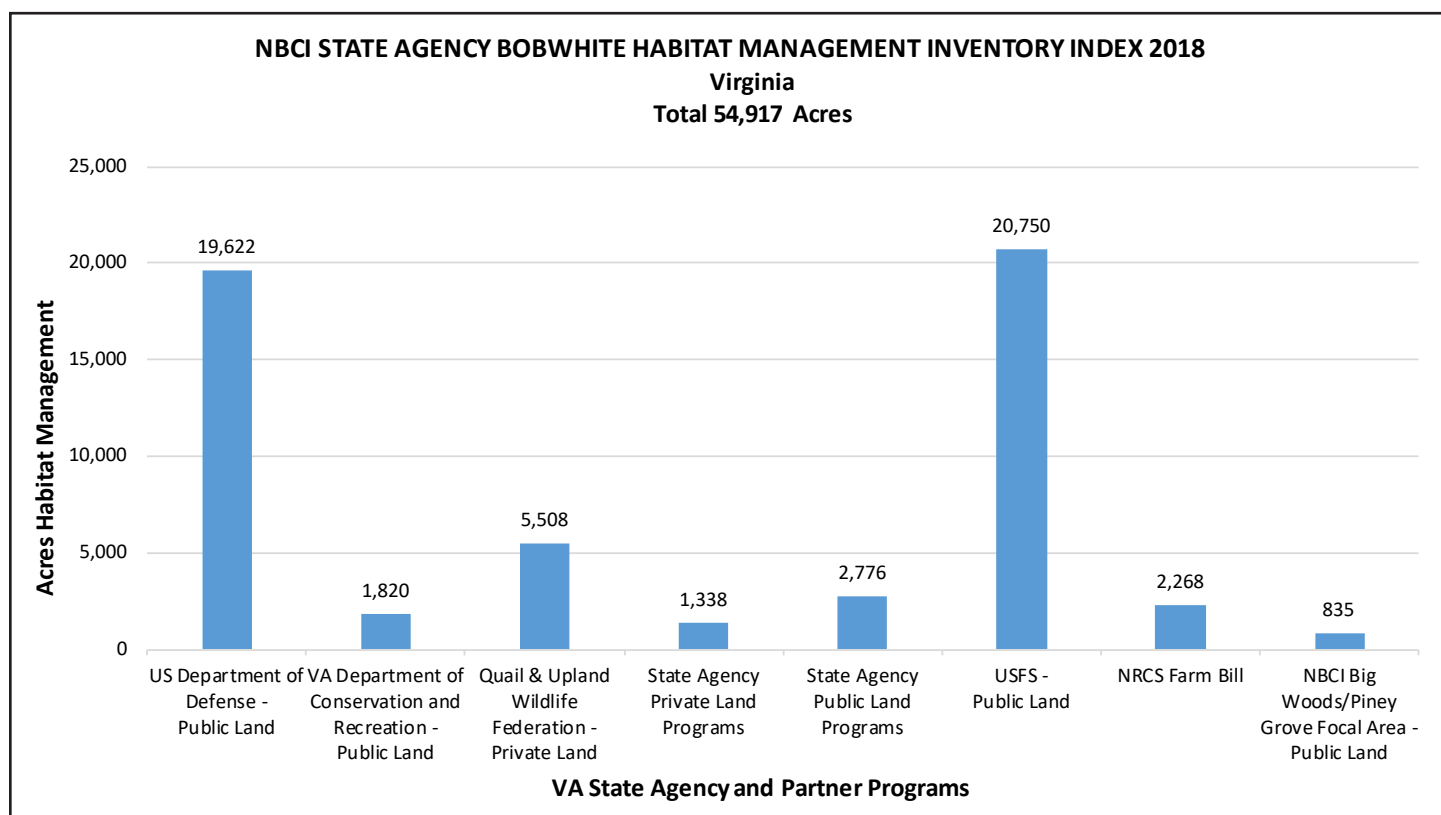
**Management:** VDGIF Quail Recovery Initiative completed nine years of implementation on June 30, 2018. The agency



prepared a comprehensive report compiling their actions on behalf of bobwhites since 1980, as well as the 2017 Quail Plan Revision, available on the NBCI website. Quail management highlights of the first nine years included:

- 4,573 site visits made to landowners owning over 509,897 acres of land. Also, 2,740 new contacts have been made, and over 2,011 management plans have been written.
- Quail DVD, *Answering the Call*, widely distributed.
- 448 tracts of land and 435 landowners enrolled in the Quail Management Assistance Program, totaling 106,093 acres, with 14,829 (14%) under some form of quail management.
- Forestry-related Best Management Practices (BMPs) partnership with Virginia Department of Forestry offering cost-share for eight wildlife-friendly forestry BMPs, including prescribed fire. Total projects completed to date: 180; total acres: 6,604.
- Preparing for the sixth year of June call counts and point habitat assessments per NBCI Coordinated Implementation Program (NBCI CIP) monitoring protocol for focal areas.
- Reported 54,917.0 acres of bobwhite management for the NBCI Habitat Management Inventory.

NBCI State Quail Coordinators: Marc Puckett, Small Game Project Leader, [marc.puckett@dgif.virginia.gov](mailto:marc.puckett@dgif.virginia.gov) and Jay Howell, Small Game Project Leader, [jay.howell@dgif.virginia.gov](mailto:jay.howell@dgif.virginia.gov)



### West Virginia — West Virginia Division of Natural Resources (WVDNR)

Population: The current extent and population size of bobwhite in West Virginia is unknown. Turkey and grouse broods are tracked statewide by WVDNR Wildlife Resources employees, who are also asked to record northern bobwhites seen or heard. Each of the last four years, only two birds have been detected, with none occurring on state or federal lands. Given the location and marginal habitat at each of these sightings, it is highly likely that they were pen-reared and/or escaped/released birds, as it is legal in West Virginia to release bobwhites for dog training or shoot-to-retrieve field trials. Given the rapid decline, distribution, and type of observations between the current West Virginia Breeding Bird Atlas (unpublished) and the prior atlas (West Virginia Breeding Bird Atlas, 1984-89), populations are extremely low and likely have been extirpated in the vast majority of the state. Furthermore, it is highly unlikely that wild populations exist in self-sustaining, biologically viable numbers. Any remnant populations are likely in eastern counties such as Berkeley,





Hampshire, or Pocahontas counties. West Virginia is only a marginal state for bobwhite, being mostly forested and lacking the large-scale vegetation disturbances that are needed to create the brush and grasslands required to support bobwhite. According to the West Virginia Division of Forestry, West Virginia was 57% forested in the 1950s. Today, it is 78% forested, and the age composition of that forest is almost 70% saw timber, 22% pole stage, and only 8% seedling/sapling (young forest). Compounding the problem of too little young forest is that the 8% is not evenly distributed across the landscape. Where the national forests and even some state forests used to contain a diversity of age classes, purposeful reductions—if not outright elimination—of active timber management have resulted in entire regions of the state exceeding 90% forested.

**Hunting:** While northern bobwhites are considered a huntable species with a daily bag limit of three, their harvest is directly related to shoot-to-retrieve hunts, field trials, and dog training opportunities.

**Management:**

- West Virginia has a statewide bobwhite operational plan and state management guidelines, but they are opportunistic in nature (i.e., in conjunction with creating early successional habitat for grouse and turkey).
- The Tomblin Wildlife Management Area (WMA) in the southern coal fields of the state has been administratively selected for a bobwhite habitat enhancement and translocation project. West Virginia is beginning its second year of habitat work on the Tomblin WMA in anticipation of translocating wild bobwhites to the site in the next few years.

NBCI State Quail Coordinator: Michael Peters, Migratory Game Bird and Small Game Project Leader,  
[michael.l.peters@wv.gov](mailto:michael.l.peters@wv.gov)

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# NBCI State Agency Bobwhite Habitat Inventory Index 2018

Tom Dailey and Molly Foley | NBCI Science Coordinator and Data Analyst

The NBCI Habitat Inventory is an index of the potential for bobwhite to occur on the landscape based on habitat, now or in the near future, as identified by the state's quail coordinator. For 2018, 23 state agency coordinators reported 3,764,671 acres of bobwhite habitat management for 97 programs, demonstrating a tremendous commitment to habitat to benefit bobwhites and myriad fauna.

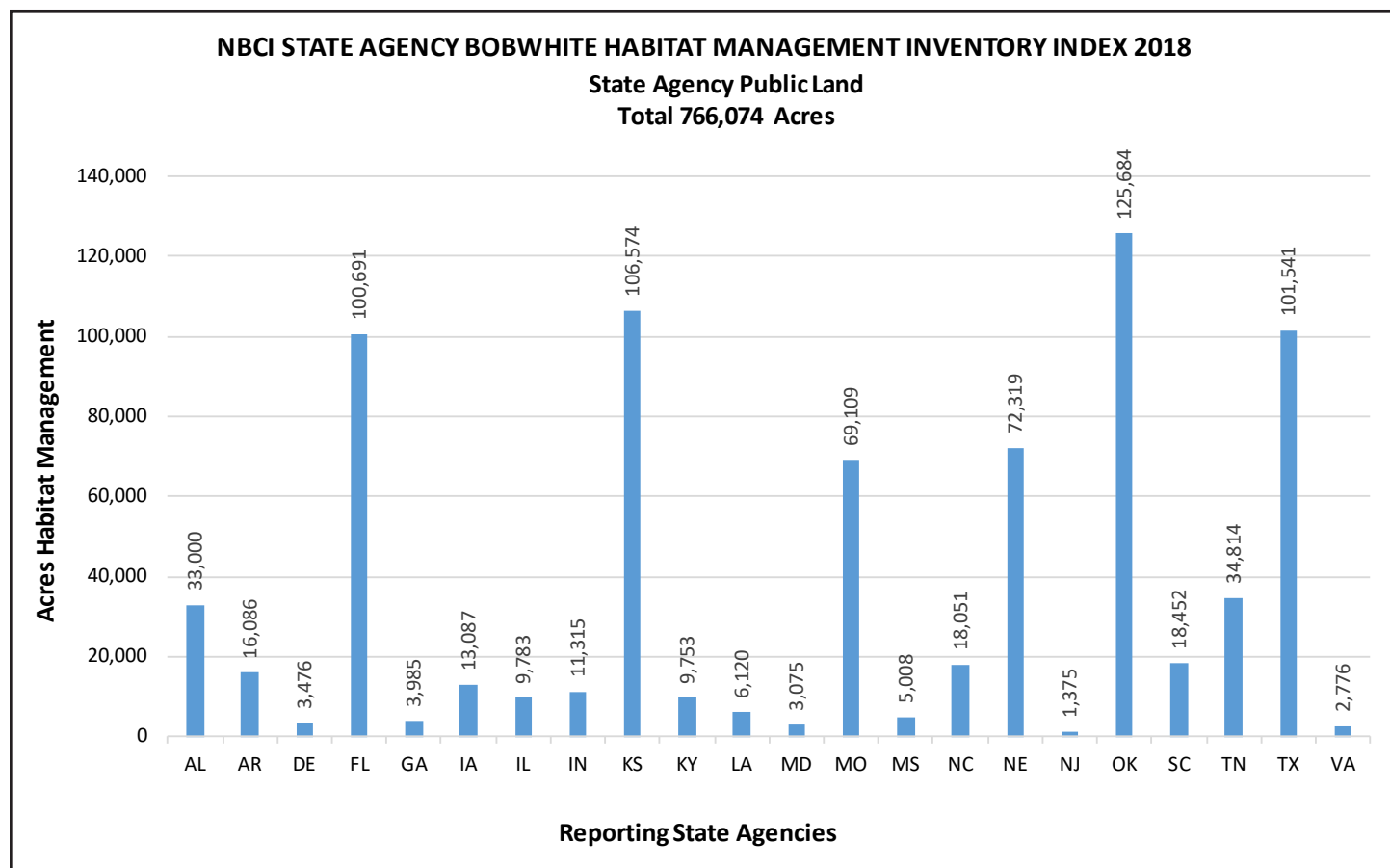
## Introduction

This is the eighth annual National Bobwhite Conservation Initiative (NBCI) State Agency Bobwhite Habitat Inventory (hereafter, Inventory), an index of habitat management over the past year as reported by state agency quail program coordinators. The Inventory fulfills part of the 2010 charge of the NBCI Management Board to document “all things being done to benefit bobwhites in each state.”

The Inventory documents acres of management of plant succession (prescribed fire, disking, prescribed grazing, cutting, chemical application, etc.), planting vegetation, and protecting vegetation (deferred grazing and haying,

leaving crop residue, leaving standing crops, etc.). Data in this report are rounded to nearest whole number, with X.5 rounded up (e.g., 1333.49 and 1333.5 are equivalent to 1334). Inventory management is for the 2018 reporting year, which varies across states and among years.

The Inventory is divided into three primary land categories based on a combination of ownership, leadership, and funding source: (1) **State Agency Public Land**, includes management on the wildlife agency's land (Figure 1); (2) **State Agency-Based Private Land**, includes management on private lands that is funded, led, or made possible by



**Figure 1.** 2018 NBCI State Agency Bobwhite Habitat Management Index for 22 state public land programs. Index is acres of habitat managed during the reporting year (ranging from January 1, 2017 to March 31, 2019).

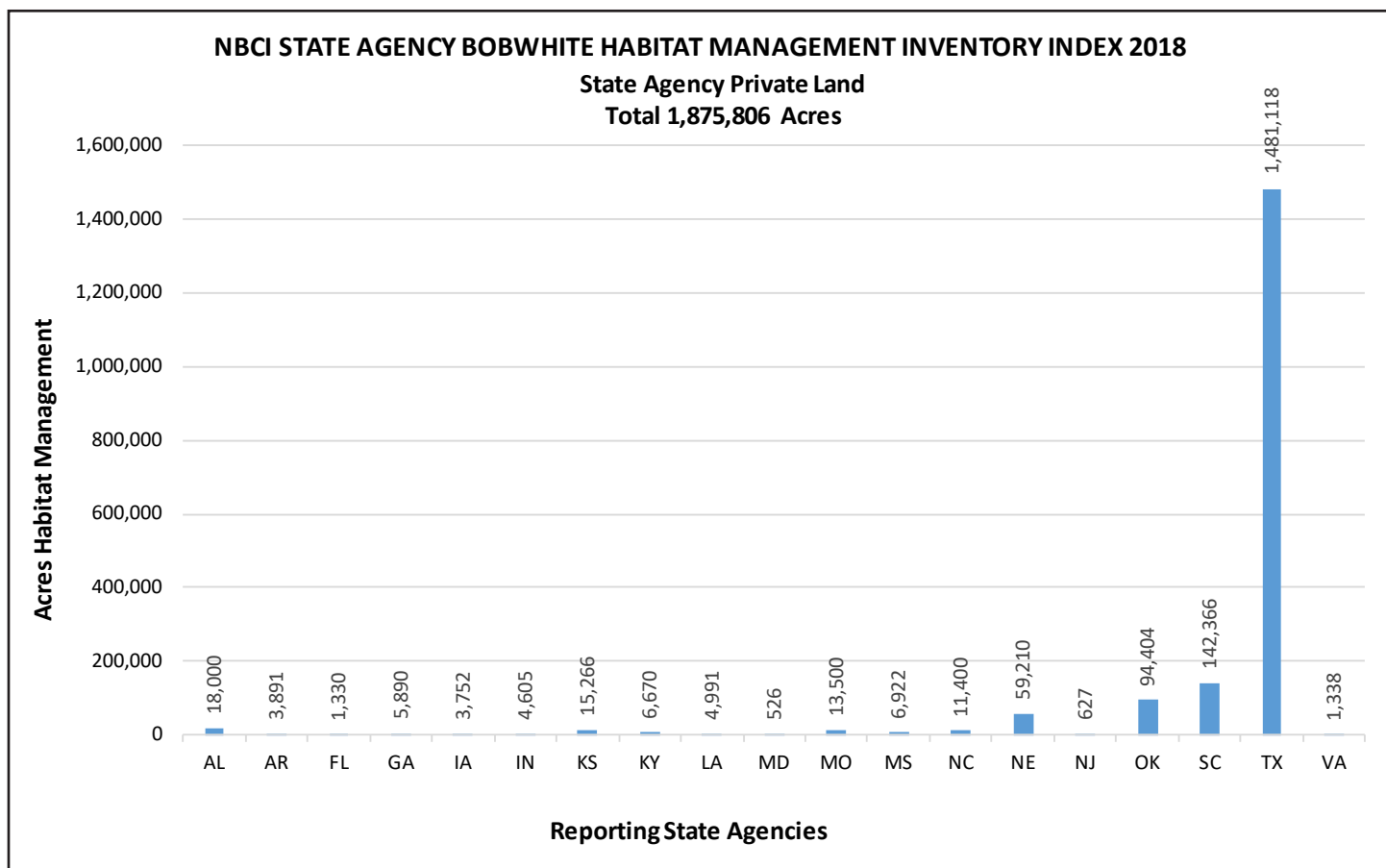


the wildlife agency, and is generally not reported in other private land categories (Figure 2); and (3) **US Department of Agriculture (USDA) Farm Bill**, includes acres managed under the USDA Farm Bill program (Figure 3). The **Partner Private Land** (Figure 4) and **Partner Public Land** (Figure 5) categories include programs administered by partner agencies, organizations, and institutions, and are generally not featured in Figures 1-3. Beginning this year, Inventory acres of habitat management for **NBCI Coordinated Implementation Program (CIP) Focal Areas** is not required and are being reported in the CIP database. Some states continue to report these acres for the Inventory, and this management can be found in Figures 4 and 5.

Multiple management treatments on any one acre can be counted >1 time per year (e.g., burning, chemical treatment, and planting one acre in same year equals three acres of habitat management). Acres are sometimes counted more than once across land categories. For example, agency and partner management might occur simultaneously on USDA Farm Bill lands. The Inventory is action-oriented.

Does existence of habitat management mean that wild bobwhites can be expected at a particular program's physical locations? Not necessarily. Inventory protocol specifies that habitat is suitable for bobwhites in the reporting year, or will be in the near future. It can take several years after initial management for some habitats to become suitable for bobwhites, followed by a bobwhite population response. Bobwhites occupy or increase in an area based on survival and reproduction, which are affected by weather and other non-habitat factors, and by movement into an area, which is affected by distance to existing populations. Further, as described in detail in the 2012 and 2013 State of the Bobwhite reports, because of variability among NBCI states and partners in ability to measure habitat, the NBCI Inventory is appropriately interpreted as an index of habitat management. As an index of the amount of habitat management beneficial to bobwhites, comparisons among years, states, partners, and programs should be made cautiously.

To better describe the amount of uncertainty in habitat data, coordinators grade their confidence in acreage they report by choosing among seven levels of confidence (very



**Figure 2.** 2018 NBCI State Agency Bobwhite Habitat Management Index for 19 state-led private land programs. Index is acres of habitat managed during the reporting year (ranging from January 1, 2017 to March 31, 2019).





confident, moderately confident, somewhat confident, neutral, somewhat uncertain, moderately uncertain, and very uncertain). The highest confidence is often based on measurement of bobwhite abundance, and this aspect is a foundation of the NBCI CIP. Such detailed measurement, however, is not feasible at large scales, so the Inventory's coordinator confidence ratings provide a qualifier for expectations for bobwhite to occupy habitat and/or to be abundant. This is particularly useful for large areas where bobwhites were known to exist and some kind of habitat program had been implemented, but there is no measurement of habitat quality (e.g., stage of plant succession) or actual bobwhite abundance.

In summary, the NBCI Inventory is an index of the potential for bobwhite to occur on the landscape, as identified by each state's quail coordinator. There are non-biological sources of variability that affect the accuracy of this assessment of management. Foremost, there are differences among states in capacity to collect data, and within a state from year-to-year. Also, the reporting strategy varies among states (e.g., conservative or liberal inclusion of habitat management).

Some states were constrained in 2018 by other factors. Similar to previous years, quail coordinators for Pennsylvania Game Commission and West Virginia Division of Natural Resources believe that wild bobwhite population abundance was inadequate for responding to habitat management. Per NBCI Inventory protocol, presence, or potential presence (immigration or translocation) of wild bobwhite are minimum criteria for claiming habitat management for an area. Because Pennsylvania has a peer-reviewed plan to translocate wild bobwhite, their management was reported for a second year under public land partners (Figure 5).

## Results

Twenty-three state agency coordinators reported 3,764,671 acres of bobwhite habitat management, slightly less than the 3.9 million acres reported last year. Management in 2018 included:

- 766,074 acres on state wildlife agency publicly owned lands (Figure 1),
- 1,875,806 acres on private lands through state wildlife agency efforts (Figure 2),
- 318,653 acres on private lands through the USDA Farm Bill (Figure 3),
- 670,658 acres on Partner Private Lands (Figure 4), and
- 133,480 acres on Partner Public Lands (Figure 5).



*Field day attendees view edge feathering, dropping trees to create bobwhite-friendly woody structure for protection from the elements and predators at Missouri's 2C CIP Focal Area. Photo by Lee Metcalf, Missouri Department of Conservation.*

The "reporting year," 2018, included dates ranging from July 1, 2017 to March 28, 2019, varying with fiscal years, accounting systems, etc. Acreage for all 25 NBCI states are as follows:

- |                |                          |
|----------------|--------------------------|
| • AL: 51,000,  | • NC: 32,501,            |
| • AR: 39,206,  | • NE: 131,963,           |
| • DE: 3,476,   | • NJ: 4,386,             |
| • FL: 278,303, | • OH: no data submitted, |
| • GA: 400,934, | • OK: 256,687,           |
| • IA: 23,512,  | • PA: 637,               |
| • IL: 12,696,  | • SC: 212,726,           |
| • IN: 15,920,  | • TN: 37,308,            |
| • KS: 353,716, | • TX: 1,632,659,         |
| • KY: 17,148,  | • VA: 54,917, and        |
| • LA: 40,217,  | • WV: no data submitted  |
| • MD: 4,061,   | due to lack of adequate  |
| • MO: 146,988, | bobwhite population.     |
| • MS: 13,710,  |                          |

Eight leading states, TX, GA, KS, FL, OK, SC, MO, and NE (largest to smallest Inventory acreage), reported 91% of all acres, and TX alone reported 43% of all acres.

## State Agency Public Land Management

For 2018, management of state wildlife agency public lands, 22 state agencies reported 766,074 acres of bobwhite habitat management (Figure 1). State coordinator acreage reports (state, coordinator confidence) included the following:

- 33,000 (AL, somewhat confident),
- 16,086 (AR, very confident),
- 3,476 (DE, very confident),

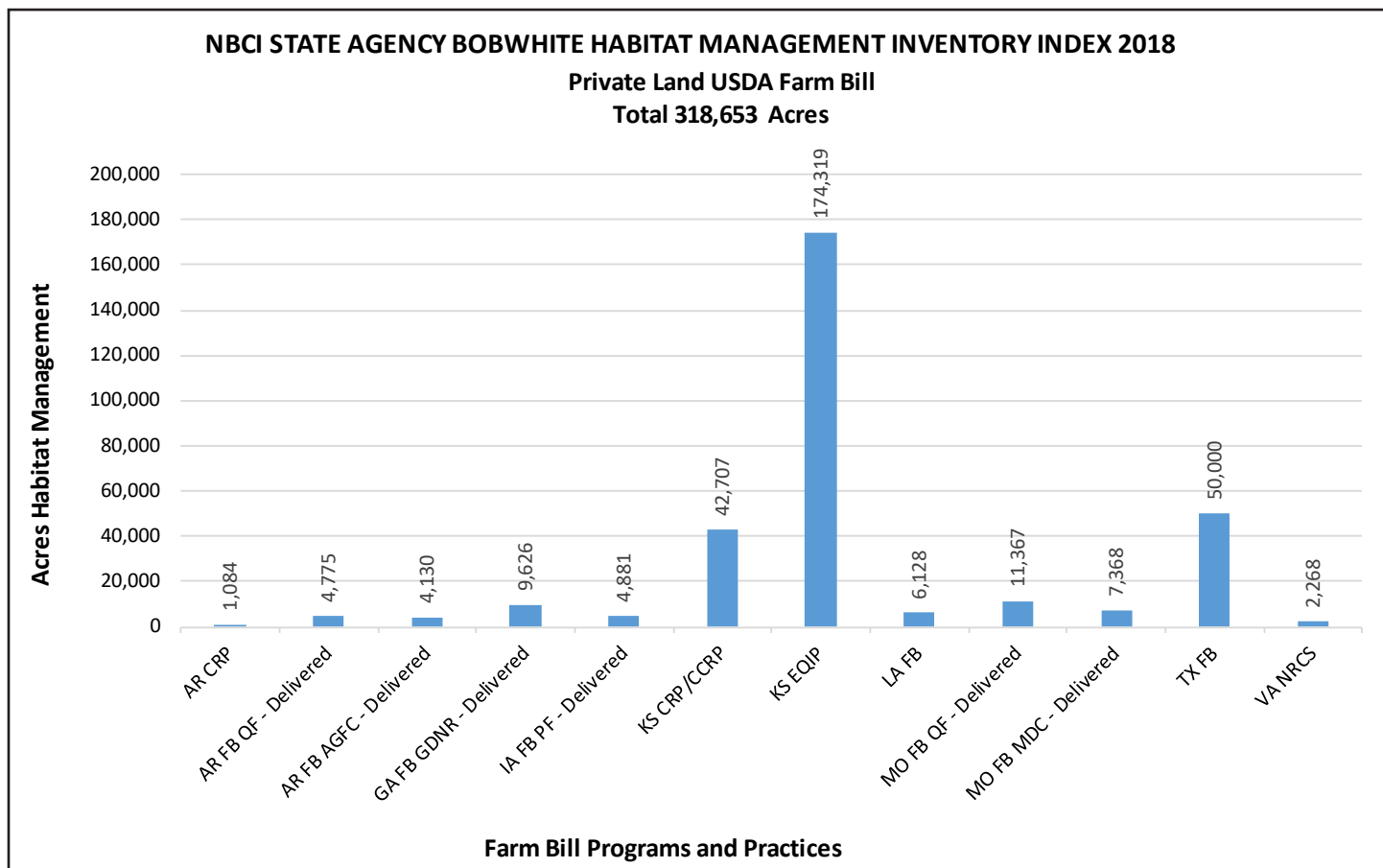


- 100,691 (FL, moderately confident),
- 3,985 (GA, very confident),
- 13,087 (IA, moderately confident),
- 9,783 (IL, moderately confident),
- 11,315 (IN, somewhat confident),
- 106,574 (KS, somewhat confident),
- 9,753 (KY, moderately confident),
- 6,120 (LA, very confident),
- 3,075 (MD, somewhat confident),
- 69,109 (MO, somewhat confident),
- 5,008 (MS, very confident),
- 18,051 (NC, somewhat confident),
- 72,319 (NE, moderately confident),
- 1,375 (NJ, somewhat confident),
- 125,684 (OK, somewhat confident),
- 18,452 (SC, moderately confident),
- 34,814 (TN, moderately confident),
- 101,541 (TX, moderately confident), and
- 2,776 acres (VA, moderately confident).

### State Agency-Based Private Land Management

For 2018, on private lands where management was based on state agency work and not a part of the USDA Farm Bill, 19 state agencies reported 1,875,806 acres, (Figure 2). State coordinator acreage reports (state, coordinator confidence) included the following:

- 18,000 (AL, very confident),
- 3,891 (AR, very confident),
- 1,330 (FL, moderately confident),
- 5,890 (GA, very confident),
- 3,752 (IA, moderately confident),
- 4,605 (IN, moderately confident),
- 15,266 (KS, moderately confident),
- 6,670 (KY, moderately confident),
- 4,991 (LA, moderately confident),
- 526 acres (MD, somewhat confident),
- 13,500 (MO, somewhat confident),
- 6,922 (MS, somewhat confident),



**Figure 3.** 2018 NBCI State Agency Bobwhite Habitat Management Index for 8 states and 12 US Department of Agriculture Farm Bill funded programs. Index is acres of habitat managed during the reporting year (ranging from July 1, 2017 to December 31, 2018).

Acronyms: CCRP (Continuous Conservation Reserve Program), CRP (Conservation Reserve Program), EQIP (Environmental Quality Incentives Program), FB (Farm Bill), FSA (Farm Services Agency), GRP (Grassland Reserve Program) NRCS (Natural Resource Conservation Service); MO and IA program delivery by MDC (Missouri Department Conservation), Quail Forever (QF), and Pheasants Forever (PF).



- 11,400 (NC, somewhat confident),
- 59,210 (NE, moderately confident),
- 627 (NJ, very confident),
- 94,404 (OK, somewhat confident),
- 142,366 (SC, moderately uncertain),
- 1,481,118 (TX, moderately confident), and
- 1,338 acres (VA, somewhat confident).

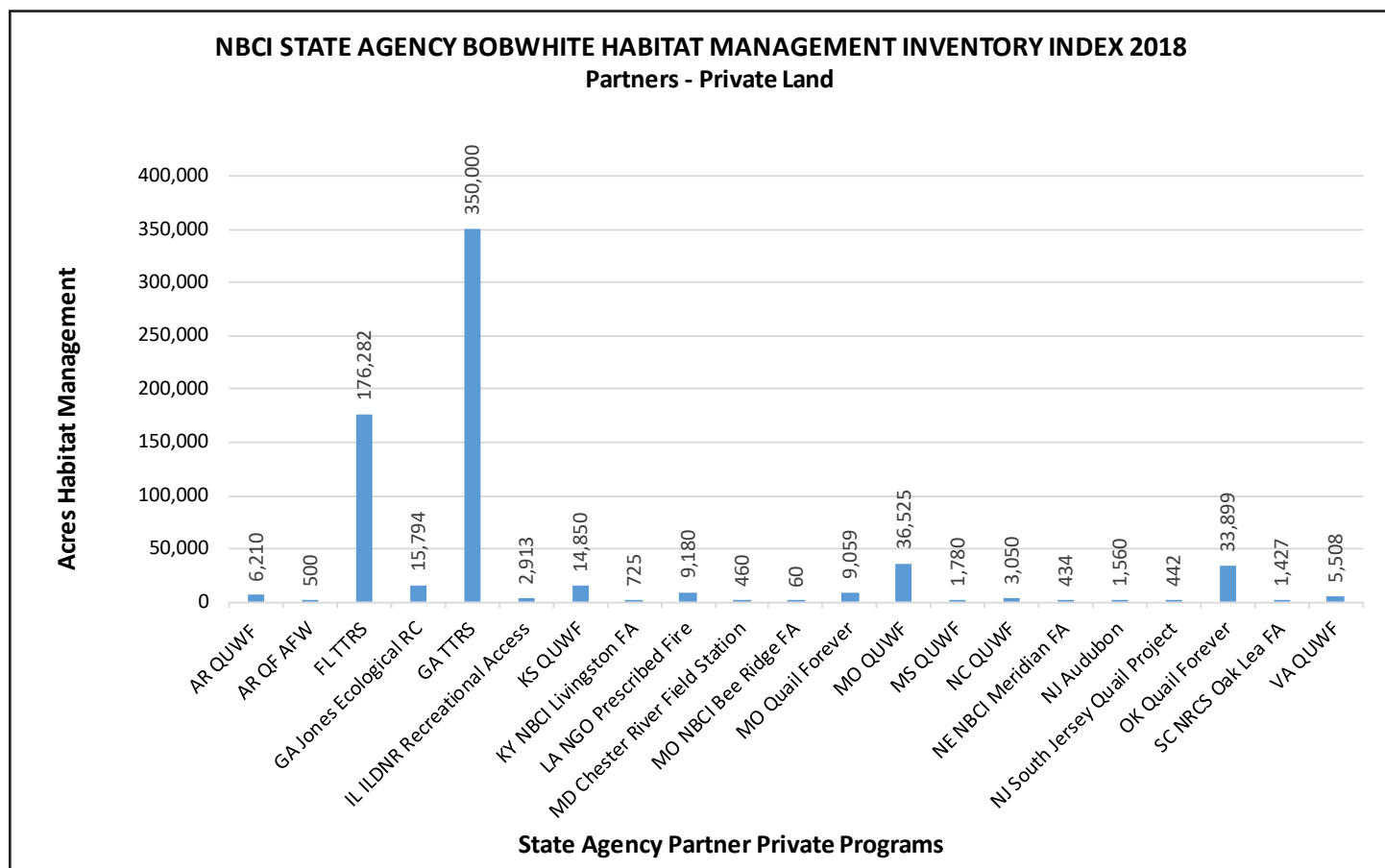
Management in this category continues to be dominated by Texas Parks and Wildlife Department (TPWD), 1,481,118 acres, or 79% of the total. This management, compared to all single programs in the entire Inventory, has dominated the past two years—43% of the total in 2017 and 37% in 2018. As explained by TPWD quail coordinator Robert Perez, TPWD private land biologists have been documenting grazing practices that are suitable for bobwhites, and this accounts for much of the reported management. This increased emphasis on grazing as a bobwhite-friendly practice coincides with NBCI's publication in 2019 of "Western Grazing Strategies

for Beef Production and Bobwhites in Western Bobwhite Range," which can be found on NBCI's web site ([www.bringbackbobwhites.org/download/grazing-strategies-for-beef-production-and-bobwhites-in-western-bobwhite-range](http://www.bringbackbobwhites.org/download/grazing-strategies-for-beef-production-and-bobwhites-in-western-bobwhite-range)).

### Private Land Enrolled in US Department of Agriculture Farm Bill

For 2018, on private lands where management was based on USDA Farm Bill programs, 8 state agencies reported on 12 programs, practices, and management delivered by partners for a total 318,653 acres of bobwhite habitat management (Figure 3). State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following:

- 1,084 (AR, USDA CRP, somewhat confident),
- 4,775 (AR, USDA Farm Bill Quail Forever (QF) Delivered, moderately confident),
- 4,130 (AR, USDA Farm Bill AGFC Delivered, very



**Figure 4.** 2018 NBCI State Agency Bobwhite Habitat Management Index for 21 partner private land programs. Index is acres of habitat managed during the reporting year (ranging from January 1, 2017 to January 1, 2018).

Acronyms: FA (Focus or Focal Area), ILDNR (Illinois Department of Natural Resources), LC (Land Conservancy), NRCS (Natural Resource Conservation Service), QF (Quail Forever), QUWF (Quail and Upland Wildlife Federation), RC (Research Center) TTRS (Tall Timbers Research Station and Land Conservancy).





confident),

- 9,626 (GA, USDA Farm Bill GADNR Delivered, moderately confident),
- 4,881 (IA, Pheasants Forever Delivered, neutral),
- 42,707 (KS, USDA CRP/CCRP, moderately confident),
- 174,319 (KS, USDA EQIP, somewhat uncertain),
- 6,128 (LA, USDA Farm Bill, neutral),
- 7,368 (MO, USDA Farm Bill MDC Delivered, somewhat confident),
- 11,367 (MO, USDA Farm Bill QF Delivered, moderately confident),
- 50,000 (TX, USDA Farm Bill, very uncertain), and
- 2,268 acres (VA, USDA NRCS, moderately confident).

Among states, Kansas reported by far the most quail-friendly management through USDA Farm Bill programs. Although general CRP acreage has declined, states have worked with the USDA and partners to focus bobwhite-friendly vegetation conditions on remaining acres. Coordinators generally report higher confidence in these lands to produce bobwhites.

### **Partner Private Land**

For 2018, 16 state agencies reported on 21 partner private land programs that contribute to quail management for a total of 670,658 acres (Figure 4). This category of habitat management continues to recognize the important contributions in Legacy Landscapes (e.g., Tall Timbers Research Station and Land Conservancy) and by quail non-government organizations, such as Quail Forever and Quail and Upland Wildlife Federation. State quail coordinators are increasingly recognizing partner management, resulting in a more diverse picture of quail conservation, including programs of the USDA Farm Bill that specifically target quail restoration such as South Carolina's Natural Resources Conservation Service Oak Lea focus area (Figure 4).

State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following:

- 6,210 (AR, Quail and Upland Wildlife Federation, moderately uncertain),
- 500 (AR, Quail Forever Acres For Wildlife, very confident),
- 176,282 (FL, TTRS, very confident),
- 15,794 (GA, Jones Ecological Research Center, very confident),
- 350,000 (GA, TTRS, very confident),
- 2,913 (IL, ILDNR Recreational Access, moderately confident),

- 14,850 (KS, Quail and Upland Federation, moderately confident),
- 725 (KY, NBCI Livingston Focal Area, very confident),
- 9,180 (LA, NGO Prescribed Fire, neutral),
- 460 (MD, Chester River Field Station, very confident),
- 60 (MO, NBCI Bee Ridge Focal Area, very confident),
- 9,059 (MO, Quail Forever, somewhat confident),
- 36,525 (MO, Quail and Upland Wildlife Federation, moderately uncertain),
- 1,780 (MS, Quail and Upland Wildlife Federation, moderately confident),
- 3,050 (NC, Quail and Upland Wildlife Federation, moderately confident),
- 434 (NE, NBCI Meridian Focal Area, moderately confident),
- 1,560 (NJ, Audubon, somewhat confident),
- 442 (NJ, South Jersey Quail Project, neutral),
- 33,899 (OK, Quail Forever, moderately confident),
- 1,427 (SC, NRCS Oak Lea FA, moderately confident), and
- 5,508 acres (VA, Quail and Upland Wildlife Federation, somewhat confident).

Among private partners, Tall Timbers Research Station and Land Conservancy made up by far the largest contribution to Inventory management, 79% of the total.

### **Partner Public Land**

For 2018, 10 state agencies reported on 23 partner public land programs that contribute to quail management for a total of 133,480 acres (Figure 5). State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following:

- 1,544 (AR, NBCI National Park Service Pea Ridge Focal

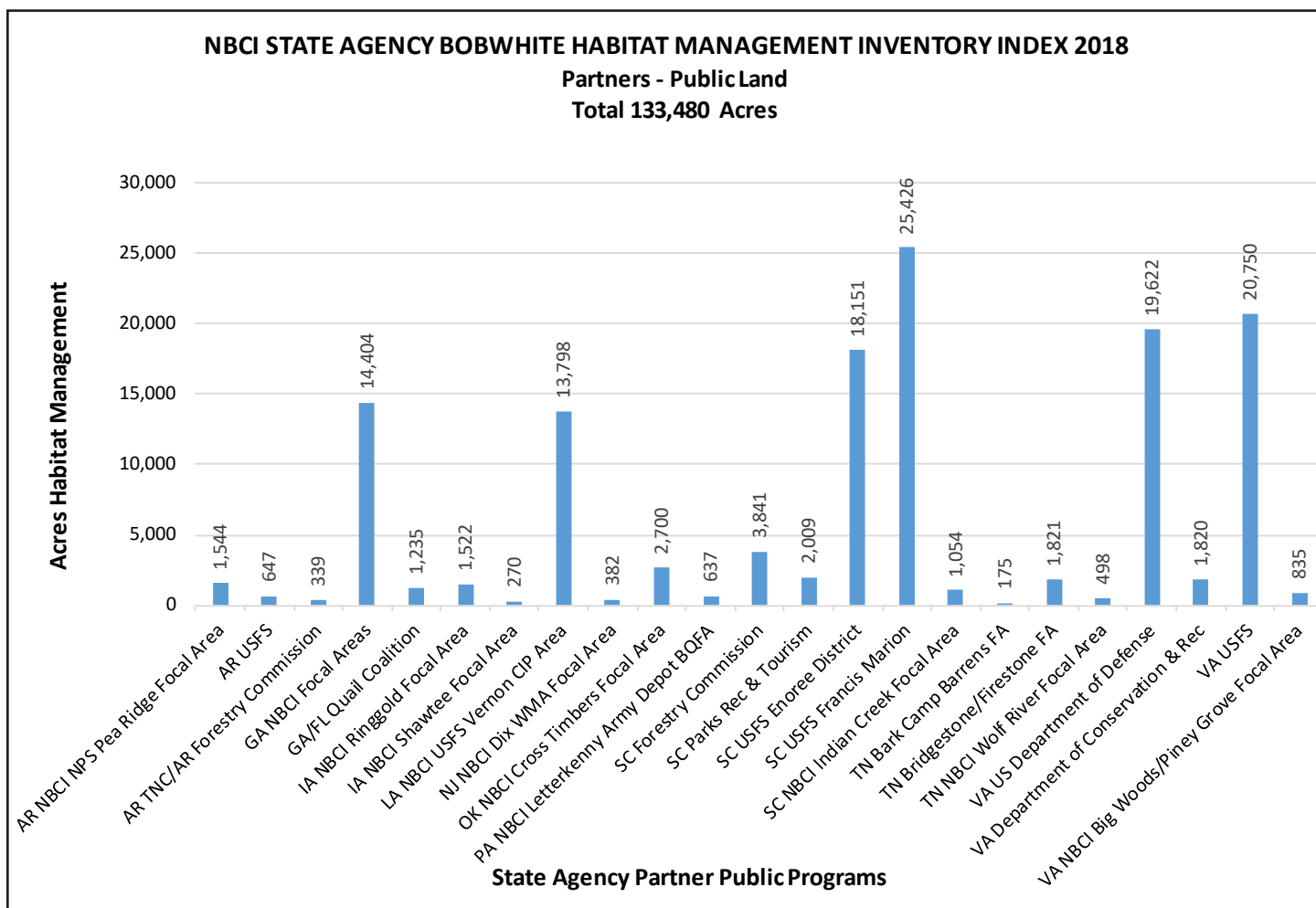


*Georgia Department of Natural Resources staff meet with a landowner to discuss land management options. Photo by Jess McGuire, Quail Forever.*

- Area, very confident),
- 647 (AR, USFS, moderately confident),
- 339 (AR, The Nature Conservancy/AR Forestry Commission, moderately confident),
- 14,404 (GA, NBCI Focal Areas, very confident),
- 1,235 (GA/FL Quail Coalition, very confident),
- 1,522 (IA, NBCI Ringgold Focal Area, very confident),
- 270 (IA, NBCI Shawtee Focal Area, very confident),
- 13,798 (LA, NBCI USFS Vernon CIP Areas, very confident),
- 382 (NJ, NBCI Dix WMA Focal Area, very confident),
- 2,700 (OK, NBCI Cross Timbers Focal Area, somewhat confident),
- 637 (PA, NBCI Letterkenny Army Depot Bobwhite Quail Focus Area, moderately confident),
- 3,841 (SC, Forestry Commission, moderately uncertain),
- 2,009 (SC, Parks Rec and Tourism, moderately

- confident),
- 18,151 (SC, USFS Enoree District, somewhat confident),
- 25,426 (SC, USFS Francis Marion, neutral),
- 1,054 (SC, NBCI Indian Creek Focal Area, moderately confident),
- 175 (TN, Bark Camp Barrens FA, very confident),
- 1,821 (TN, Bridgestone/Firestone FA, very confident),
- 498 (TN, NBCI Wolf River Focal Area, very confident),
- 19,622 (VA, US Department of Defense, moderately confident),
- 1,820 (VA, Department of Conservation and Recreation, moderately confident),
- 20,750 (VA, USFS, somewhat confident), and
- 835 acres (VA, NBCI Big Woods/Piney Grove Focal Area, very confident).

Among public partners, and considering the contribution of a single agency, NBCI coordinators reported 79,826 acres for the US Forest Service, 60% of all management.



**Figure 5.** 2018 NBCI State Agency Bobwhite Habitat Management Index for 23 partner public land programs. Index is acres of habitat managed during the reporting year (ranging from July 1, 2017 to December 31, 2018).

Acronyms: BQFA (Bobwhite Quail Focus Area), FA (Focus or Focal Area), REC (Recreation), TNC (The Nature Conservancy), and USFS (US Forest Service).



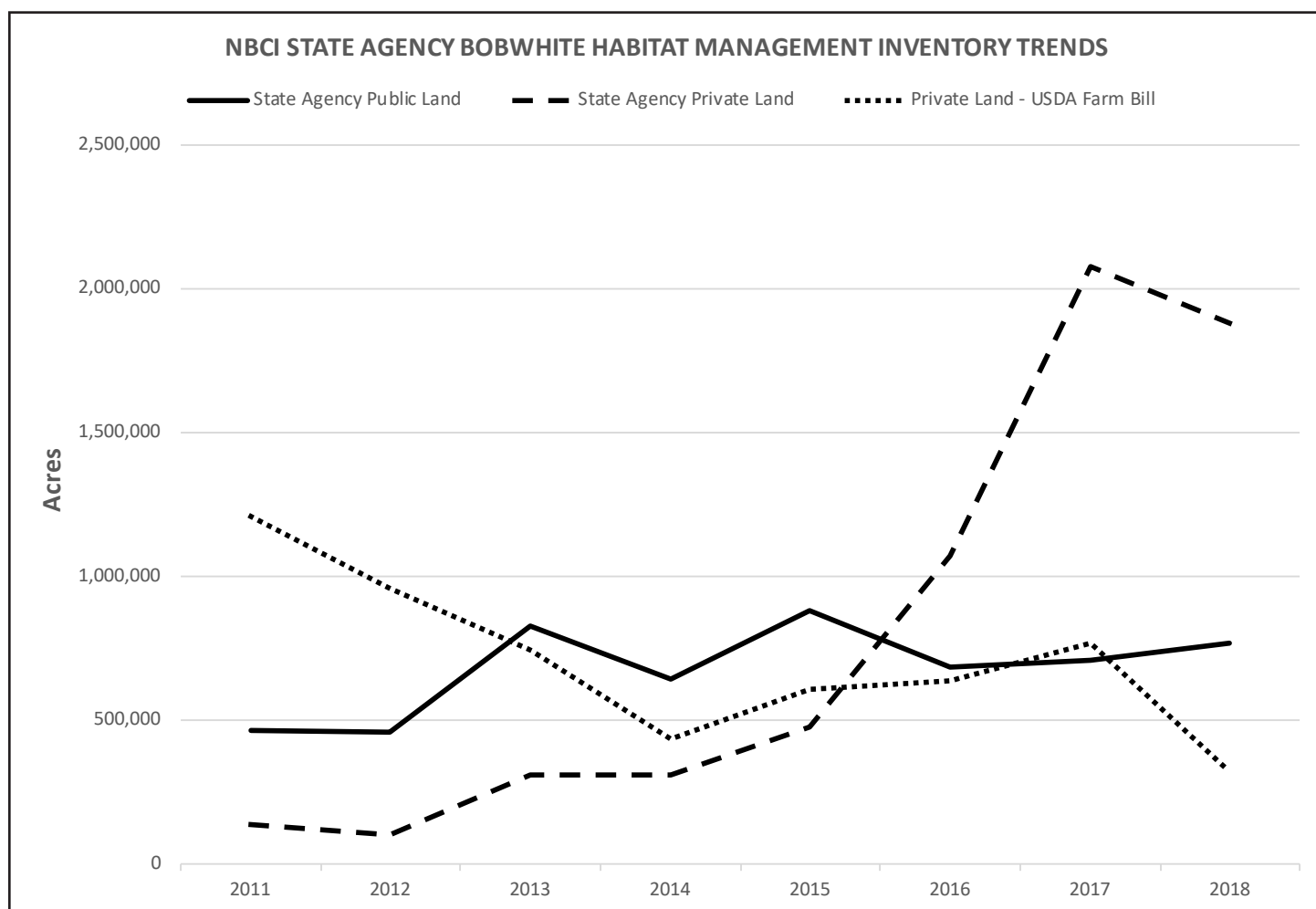
## Summary

In this eighth year of the NBCI State Agency Habitat Management Inventory, 23 state agency coordinators reported 3,764,671 acres of bobwhite habitat management for 97 programs. Total acreage was down from the record 3.9 million acres last year, but the number remains high, a reflection of state coordinators continued recognition of the many efforts by partners to put habitat on the ground.

Across the past eight years, three of the NBCI Inventory land categories—State Agency Public Land, State Agency-Based Private Land, and Private Land enrolled in USDA Farm Bill—have been standardized and are displayed in Figure 6. Trends include a large decline in USDA Farm Bill programs, stability in management of Agency Public Lands, and continued high level of management on private land, whether led by the state agency or partners. Bobwhite

conservation has traditionally been based on habitat on private lands, and the Inventory bears this out with 76% of all management occurring under the private land categories.

In summary, it is clear from the NBCI Habitat Inventory that state wildlife agencies and partners are continually working on the foundation of bobwhite populations, habitat management. Regardless of program size, land is being improved for the benefit of many species of wildlife, and in many cases, quail hunting is improved.



**Figure 6.** Trends in NBCI State Agency Bobwhite Habitat Inventory Index, 2011—2018. Includes data from standardized categories identified in Figures 1-3.





## NBCI State Agencies

- Alabama Department of Conservation and Natural Resources (ADCNR)
- Arkansas Game and Fish Commission (AGFC)
- Delaware Division of Fish and Wildlife (DFW)
- Florida Fish and Wildlife Conservation Commission (FWC)
- Georgia Department of Natural Resources (GADNR)
- Illinois Department of Natural Resources (IDNR)
- Indiana Division of Fish and Wildlife (IDWF)
- Iowa Department of Natural Resources (IDNR)
- Kansas Department of Wildlife, Parks, and Tourism (KDWP)
- Kentucky Department of Fish and Wildlife Resources (KDWFR)
- Louisiana Department of Wildlife and Fisheries (LDWF)
- Maryland Department of Natural Resources (MDNR)
- Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP)
- Missouri Department of Conservation (MDC)
- Nebraska Game and Parks Commission (NGPC)
- New Jersey Division of Fish and Wildlife (NJDFW)
- North Carolina Wildlife Resources Commission (NCWRC)
- Ohio Department of Natural Resources (ODNR)
- Oklahoma Department of Wildlife Conservation (ODWC)
- Pennsylvania Game Commission (PGC)
- South Carolina Department of Natural Resources (SCDNR)
- Tennessee Wildlife Resources Agency (TWRA)
- Texas Parks and Wildlife Department (TPWD)
- Virginia Department of Game and Inland Fisheries (VDGIF)
- West Virginia Division of Natural Resources (WVDNR)

## Acronyms

- ALPFC – Alabama Prescribed Fire Council
- BBS – USGS North American Breeding Bird Survey
- BMP – Best Management Practices
- BQFA – Bobwhite Quail Focus Areas
- BQI – Bobwhite Quail Initiative
- CIP – Coordinated Implementation Plan (NBCI CIP)
- CNF – Conecuh National Forest
- CP – Conservation Practice (as used in the Conservation Reserve Program)
- CP-33 – Habitat Buffers for Upland Birds
- CP-38 – State Acres for Wildlife Enhancement, SAFE
- CP-42 – Pollinator Habitat
- CCRP – Continuous Conservation Reserve Program
- CLAP – Collaborative Landowner Assistance Program
- CNGM – Center for Native Grasslands Management
- CRP – Conservation Reserve Program
- CS – Cost share
- DNR – Department of Natural Resources
- ESH – Early Successional Habitat
- FB – Farm Bill (CCRP, CRP, EQIP, GRP, etc.)
- FFA – Future Farmers of America
- FSA – Farm Service Agency
- FWA – Fish and Wildlife Area
- EQIP – Environmental Quality Incentives Program
- FSA – Farm Service Agency
- GRIP – Grassland Restoration Incentive Program
- JQC – Joint Quail Conference
- KNF – Kisatchie National Forest
- LEAD – Letterkenny Army Depot
- MOU – Memorandum of Understanding
- NBCI – National Bobwhite Conservation Initiative
- NBTC – National Bobwhite Technical Committee
- NFWF – National Fish and Wildlife Foundation
- NGO – Non-Governmental Organization
- NPS – National Park Service
- NRCS – Natural Resources Conservation Service
- OPJV – Oaks and Prairie Joint Venture
- OSU – Oklahoma State University
- P-R – Pittman-Robertson
- PCQ – Park Cities Quail
- PF – Pheasants Forever
- PLP – Private Lands Program
- PSU – Pennsylvania State University
- QF – Quail Forever
- QRL – Quail Restoration Landscape
- RCPP – Regional Conservation Partnership Program
- RS – Research Station
- SAFE – State Acres for Wildlife Enhancement, CP-38
- SCBI – South Carolina Bobwhite Initiative
- SCBFP – South Carolina Bobwhite Funding Partnership
- SE – Standard Error
- SWAP – State Wildlife Action Planning
- TTRS – Tall Timbers Research Station and Land Conservancy
- UDEL – University of Delaware
- UERP – Upland Ecosystem Restoration Project
- USFS – United States Forest Service
- USFWS – United States Fish and Wildlife Service
- USDA – United States Department of Agriculture
- USGS – United States Geological Survey
- UT – University of Tennessee
- UTIA – University of Tennessee Institute of Agriculture
- VWL – Virginia Working Landscapes
- WA – Wildlife Area
- WLFW – Working Lands For Wildlife
- WMA – Wildlife Management Area
- WRD – Wildlife Resources Division
- WSWF – Wildlife and Sport Fish Restoration





**NBCI**  
**National Bobwhite**  
**Conservation Initiative**



# NBCI Benefactors



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Association of  
Fish & Wildlife  
Agencies





## About Our Cover

NBCI is all about the science of bobwhites—always has been, always will be. But you may have seen or heard occasional references from NBCI and elsewhere to the “iconic bobwhite.” Before the growth of cities and their suburbs, before the rise of corporate agriculture, before native grassland pastures were converted to exotic forage grass species, and before both pine and hardwood savannas disappeared, this little bird permeated much of the cultural fabric of society. This year’s cover is a tip of our hat to the bobwhite, the icon.

One example of the bobwhite’s iconic status was the radiator cap of the Ford Model A, featured on this issue’s cover. For more information about how it came about and to see other examples of bobwhites in product marketing, visit [www.bringbackbobwhites.org/the-iconic-bobwhite](http://www.bringbackbobwhites.org/the-iconic-bobwhite). We invite you to send us photographs of any other examples you may have to [bobwhite@utk.edu](mailto:bobwhite@utk.edu).

