

NBCI's

Bobwhite Almanac

State of the Bobwhite 2015

Bobwhites The Umbrella Species

**Science Makes the Case
for Native Grasses**



More Inside!

- **Advances in Coordinated Implementation**
- **Kentucky's Hart County Focus Area**
- **Military Park Ramps Up Restoration**
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- **State Conservation Reports**

“So tell me, Grandpa ...
what’s a *bobwhite*?”



Our generation has the last chance to reconnect wild quail
with the land ... and with people.

Don't let bobwhites become just another
faded memory on a mug!



Contact us today.

The Bobwhite Foundation is a 501(c)3 that supports and empowers the mission of the National Bobwhite Conservation Initiative. NBCI is the unified strategy of 25 state wildlife agencies* to restore widespread wild bobwhite populations to huntable levels ... which is becoming a reality in many places.

More information at www.bobwhitefoundation.org



*Alabama Department of Conservation & Natural Resources, Arkansas Game & Fish Commission, Delaware Division of Fish & Wildlife, Florida Fish & Wildlife Conservation Commission, Georgia Department of Natural Resources, Illinois Department of Natural Resources, Indiana Division of Fish & Wildlife, Iowa Department of Natural Resources, Kansas Department of Wildlife, Parks & Tourism, Kentucky Department of Fish & Wildlife Resources, Louisiana Department of Wildlife & Fisheries, Maryland Department of Natural Resources, Mississippi Department of Wildlife, Fisheries and Parks, Missouri Department of Conservation, Nebraska Game & Parks Commission, New Jersey Division of Fish & Wildlife, North Carolina Wildlife Resources Commission, Ohio Division of Wildlife, Oklahoma Department of Wildlife Conservation, Pennsylvania Game Commission, South Carolina Department of Natural Resources, Tennessee Wildlife Resources Agency, Texas Parks & Wildlife Department, Virginia Department of Game & Inland Fisheries, and West Virginia Division of Natural Resources

NBCI's

Bobwhite Almanac

State of the Bobwhite 2015



... the unified strategy to restore wild quail

www.bringbackbobwhites.org



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 major 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, 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 bobwhite quail and, consequently, other species dependent on native grassland habitat. NBCI is headquartered at the University of Tennessee.

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COVER PHOTO: Our sincere thanks to wildlife biologist and photographer Dr. John Brunjes, KY Department of Fish and Wildlife Resources, for his cover photo contribution (www.johnbrunjes.com).



FOREWORD

The Flywheel is Moving ...



Unlike sausage and the law, progress is good to be seen when being made, especially when it's to benefit the noble Bobwhite.

Over the past several years I have been absolutely impressed with the work by our NBCI Director Don McKenzie and his staff, the NBTC Steering Committee, the NBCI Management Board, the University of Tennessee, and a wide number of conservation agencies and other partners who have put forth a great deal of effort on behalf of the Bobwhite and its habitats range-wide.

In the book "Good to Great" there is a discussion about getting the flywheel moving. With everyone's help, we have not only jump-started the program but we are gaining significant momentum across the diverse program objectives.

The participation of Federal Aid Funding via a multi-state approach has been a game changer!

Additionally, we have gained the services of a number of top professionals, three via new positions and one backfilling of an existing position. Some part-time help with accounting and administrative matters will be forthcoming this fall at UT via a cost share arrangement including the UT Department of Forestry, Wildlife and Fisheries, the Shortleaf Pine Initiative and the NBCI.

The NBCI efforts include everything from outreach, technical assistance, communications, innovations, and even putting focal areas on Civil War

battlefields and using drones for habitat assessment.

Elsewhere in this 2015 Almanac, Don McKenzie and staff will provide many of the facts and figures on what we are collectively accomplishing and it is indeed an impressive listing of effort and accomplishment. I am reminded of comparisons that have been made to other natural resource success stories like the North American Waterfowl Management Plan and the resources and time it took those efforts to work.

While we have much in the way of unfinished business in the restoration of the magnificent Bobwhite quail and its habitats, I cannot help but be reminded of where we started from and how far we have come in a relatively short time.

During my 42-year career few things have been as gratifying as the collaborative effort made, range-wide, on behalf of the Bobwhite. My heartfelt thanks to all who cherish the Bobwhite and who want to help ensure that the call of Bobwhite shall not perish from the roll call of North American gamebirds!

Bob Duncan
Chairman
NBCI Management Board

Executive Director
Virginia Department of Game and Inland Fisheries



INTRODUCTION

... The Clock is Ticking



The wildlife agencies of 25 states are standing taller for conservation of northern bobwhites, uniting in earnest behind their National Bobwhite Conservation Initiative (NBCI), and its brain trust, the National Bobwhite Technical Committee (NBTC). In summer 2014, many NBCI states—in cooperation with the University of Tennessee—undertook a ground-breaking effort to strengthen the nation’s bobwhite conservation movement, by pooling sportsmen’s conservation dollars through the federal Wildlife Restoration (also known as Pittman-Robertson, or P-R) program for investing in the NBCI.

A year later, the historic P-R funding process is complete and operational. In addition, supplementary state-origin funds from certain states plus private grants from Park Cities Quail provide unrestricted ability for the NBCI to pursue important opportunities that would be prohibited with federal funds. The NBCI is stronger as a result of these investments, and is better positioned to provide essential national-level leadership and close collaboration with the states and our partners, to elevate and accelerate bobwhite conservation nationally.

Since January, the NBCI has refilled two key pre-existing positions—Agricultural Liaison (based in Washington, DC) and Forestry Coordinator—and filled two long-awaited new positions: Grasslands Coordinator and Data

Analyst. Along with the NBCI’s Science Coordinator and Communications Director, this NBCI team—in close collaboration with the NBTC’s technical subcommittees—has the ability to begin addressing many top-priority bobwhite challenges. The entire NBCI team contributed informative updates, compilations, analyses and articles for this report.

In the near future, some top NBCI priorities include:

- establishing official NBCI focal areas in all 25 states;
- creating a national database at UT for bobwhite landscapes, habitats and population data;
- producing a national documentary on the bobwhite decline and conservation strategies;
- promoting native, wildlife-friendly vegetation across USDA programs;
- pursuing new quail habitat partnerships with unique federal, state and private partners;
- promoting active forest management with frequent prescribed fire on federal, state and private lands; and
- fostering a serious national dialogue on creating a new, sustainable funding mechanism to the states for upland game bird conservation.

Some contend, convincingly, that bobwhite populations would be in much better shape now if the states had organized 15–20 years earlier—by about 1980, before the Conservation Reserve Program was implemented, and before quail were so diminished and fragmented. Hindsight indeed is keen; nonetheless, late is better than never. The holes we confront are deeper now, and the challenges more daunting, but the states, private organizations, partner agencies and the NBCI are more capable than ever to face them.

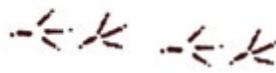
Meanwhile, the clock is ticking. It is far too early to tell if all this newly mustered activity by the states and the NBCI will be able to catch up with, and eventually get ahead of, the ongoing declines and range contractions. Restoring huntable—or even just sustainable, in some places—bobwhite populations will not be cheap, nor easy, nor quick. Bobwhite restoration requires a collective sustained investment of funding, personnel and energy comparable to the vastness of the challenge. The past year in the history of bobwhite conservation demonstrates clearly that the right agencies and the right people are recognizing and rising to the occasion, hopefully just in time.

Don McKenzie
Director
NBCI



To watch McKenzie’s report to the NBTC, please visit <https://goo.gl/ogeY1P>.





ALABAMA

Alabama Department of Conservation and Natural Resources Wildlife Section continues to make management efforts toward quail restoration on wildlife management areas (WMAs). Some WMAs with farm lands and agriculture contracts, i.e. Swan Creek, Mud Creek, Mallard Fox Creek and Skyline WMAs, have been targeted as opportunities for small game focus areas, i.e. quail. Some of the management efforts will be to implement better managed field buffers by fallowing field edges and a bi-annual rotation of these buffers to maintain early successional habitat adjacent to the woodlands. This will be accomplished primarily by well-defined modifications and requirements of the contracts with the farmers. In addition, as part of the requirements of the contract, a percentage of cropland will be unharvested adjacent to these field buffers.

WMAs with sizable acreages in shortleaf pine or longleaf pine restoration that show potential for quail will step up burning schedules as part of a long-range plan. This includes the Freedom Hills WMA, Lauderdale WMA, and Barbour WMA. Beginning this fall, the WMAs selected as areas with the best chances for quail restoration will implement fall quail covey call count monitoring.

DCNR and the National Forests of Alabama are cooperating on establishing quail focal areas on the four national forests in Alabama, beginning with Conecuh National Forest (CNF). This will primarily focus on timber thinning, more prescribed fire and reducing the size of the burned units. The Quail Forever Chapter in South Alabama has been working on an agreement with CNF, near Andalusia, to allow them to continue planting wildlife openings on the CNF. DCNR staff and NFS staff are working in cooperation to maintain these wildlife openings for quail.

ARKANSAS

The sounds of Northern Bobwhite whistles fill the air at the Fred Berry Conservation Education Center (FBCEC) on Crooked Creek. It is one of four Arkansas Game and Fish Conservation Education Centers across the state. The 421 Ozark acres that comprise FBCEC lie in a 2.75-mile bend of Crooked

Creek (a blue-ribbon smallmouth bass stream).

The property, a former dairy farm, is now the site of a joint conservation education project between the Arkansas Game and Fish Foundation and the Arkansas Game and Fish Commission. A generous donation by retired Yellville-Summit school teacher and counselor Fred Berry set the project in motion in 1999. Donations from Berry and others provided the land, education building, pavilion and other improvements. The center was opened and dedicated on June 17, 2005.

Currently there are 114 acres of fescue pasture around the education center being converted to native warm season grasses. The center received a \$25,000 Partners for Fish and Wildlife Program grant to convert the fescue pasture into native grass and funding to establish a 10-acre pollinator plot. The site was first prepared by a large prescribed burn of the field systems. Upon green-up, herbicide was applied over all 114 acres. Some areas required multiple herbicide applications. Last year about half of the native grasses were no-tilled on the area. The rest should be planted next spring.

This area has always had a healthy population of northern bobwhite even when it was a dairy farm. This project will benefit declining grassland birds including northern bobwhite, painted bunting, prairie warbler, dickcissel and field sparrow as well as resident wildlife such as white-tailed deer and eastern wild turkey. The private lands directly adjacent to the FBCEC have been selected for an upcoming USDA NRCS Environmental Quality Incentive Program (EQIP) special project area for next year. This should add additional northern bobwhite habitat in the area.

DELAWARE

Delaware is on track to implement its first NBCI Bobwhite Focal Area next summer. Biologists have selected the Cedar Swamp Wildlife Area in New Castle County, are working on identifying a suitable control area to follow the protocols of the NBCI Coordinated Implementation Program (CIP) and are identifying areas where habitat work within the focus area will occur. (For a summary of NBCI's CIP visit goo.gl/5xGfYU)



FLORIDA/GEORGIA

The 700,000-acre Red Hills/Albany region of north Florida and southwest Georgia was declared a Legacy Landscape for Bobwhite Conservation by NBCI and the National Bobwhite Technical Committee, the initiative's technical advisory body (see Page 12). In addition, the development of an innovative translocation or relocation policy for wild bobwhites by Tall Timbers Research Station and Land Conservancy (TTRS) in Florida and the Wildlife Resources Division of the Georgia Department of Natural Resources garnered NBTC's Award for Group Achievement. (See more on Page 14.) Florida's Upland Ecosystem Restoration Project (UERP) Steering Committee also received an NBCI National Fire Bird Conservation Award. (See more on Page 16.)

ILLINOIS

Illinois continues to enroll more acres of Upland Bird Habitat Buffers (CP33), SAFE (CP38) and Pollinator Habitat (CP42), with a general CRP sign-up scheduled for this December. The state currently has 66,000 acres of CP33; 20,300 acres of CP38 in the Grand Prairie and Southern Till Plain Focus Areas; and almost 11,000 acres of CP42 on the landscape. The state worked with the Illinois Farm Service Agency to receive an additional 2,000 acres for SAFE and is hopeful the additional acres can be enrolled quickly with plans for another request at the next opportunity.

The 2014–15 Hunter Harvest Survey showed a small (but not statistically significant) increase in the estimated number of quail hunters and harvest during the last hunting season. The spring Upland Survey also showed a small increase in the number of birds per route. Illinois was very wet in June and July, but August was dry with relatively mild temperatures. Stan McTaggart, the state's quail coordinator, says the wet weather kept most of the mowers in the shed until mid-July or August and some agricultural fields did not get planted at all, having grown up in annual weeds.

INDIANA

Indiana Division of Fish & Wildlife continues to add new bobwhite habitat, most recently adding 1,062 acres of new habitat (converted forest and fescue) and improving another 3,821 acres on 19 fish and wildlife areas using funds dedicated to their Early Successional Habitat Initiative. "We keep adding a few acres every year and expand to additional properties," says Budd Veverka, the state's quail coordinator. Most of the quail-specific habitat was added at these eight Fish and Wildlife Areas—Atterbury, Crosley, Glendale, Hillebrand, Hovey Lake, Sugar Ridge, Willow Slough, and Winamac.

The agency's Private Lands Unit continued work with landowners via the Habitat Incentive Program to create habitat in 11 Quail Habitat Priority Areas, adding 1,801 acres of habitat, an additional 74 bobwhite-specific SAFE (CP38) acres, and another 694 quail-friendly acres on private lands through the ring-necked pheasant, Henslow's sparrow, grasshopper sparrow, and American woodcock-specific CP38.

The agency also sent two representatives to participate in NBCI's Coordinated Implementation Program habitat assessment training in Kentucky earlier this year in preparation for developing an NBCI Bobwhite Focal Area.

IOWA

Suitable weather and quality habitat has the Iowa Department of Natural Resources' quail team expecting quail numbers on this year's counts to be at 10+ year highs, says Todd Bogenschutz, the state's quail coordinator. The agency also has a new \$3 million grant under the Voluntary Public Access and Habitat Incentive Program (VPA-HIP), which will fund continued habitat improvements as well as provide public hunting access to participating private properties on 20,000+ acres when fully enrolled (www.iowadnr.gov/ihap). Additionally, the agency has submitted a new State Acres for Wildlife Enhancement (SAFE or CP38) proposal that they are optimistic will be approved. The proposal targets 40,000 acres.



KANSAS

The northern bobwhite has been selected as one of two terrestrial species to serve as surrogates indicating ecosystem health of the Flint Hills of Kansas.

The Kansas Department of Wildlife, Parks and Tourism (KDWP) has partnered with the U.S. Fish and Wildlife Service (FWS) to pilot the surrogate species program. The “Surrogate Species” approach is predicated on setting fish, wildlife and habitat goals for a landscape and then identifying possible surrogates that can represent other species within the landscape at an appropriate scale.

The Flint Hills of Kansas was chosen for the program as it is a nationally important landscape that is the largest remaining intact tallgrass prairie. The bobwhite was considered representative of seven species (six bird and one mammal) dependent upon woody or shrubby habitats within a grassland ecosystem. Bobwhites were also considered a species of high public interest, which was an additional incentive to select the species as a surrogate. (The greater prairie chicken was the other terrestrial surrogate selected for this landscape.)

KENTUCKY

The Kentucky Department of Fish & Wildlife’s new five-year benchmark report on their 10-year bobwhite restoration plan illustrated the power of large-scale habitat restoration for bobwhites. In the state’s five formally monitored quail focus areas, bobwhite increases ranged from 14% in the Livingston County Quail Focus Area to 779% in the Hart County Quail Focus Area in the first five years. The Hart County location is featured on Page 26. Visit goo.gl/hKL7KG to read the benchmark report.

LOUISIANA

The U.S. Forest Service, working with Louisiana Department of Wildlife and Fisheries (LDWF), has begun its Vernon quail emphasis area work. The first “quail” timber cut is complete and included numerous openings within a longleaf pine timber stand. Some of the openings are now being planted with an initial cover crop of browntop millet while others are being allowed to recover in native forbs and grasses. Small patch burning will soon follow.

The primary quail treatment area is 1,300 acres but an additional 5,000 acres will also be thinned and managed as a quail emphasis area. LDWF/USFS have started initial quail whistle surveys to monitor progress and have begun telemetry tracking of quail to determine quail use of treatments.

MARYLAND

Maryland DNR has recently ramped up bobwhite habitat management efforts on several important wildlife management areas (WMAs). Most WMAs in the eastern part of the state, particularly those with fields, have always been managed with small game in mind. However, a renewed emphasis on early successional habitat has put bobwhites in a position to greatly benefit from increased funding and resources.

New 15-year “Vision Plans” are being written for the most significant WMAs and aggressive bobwhite habitat management objectives have been incorporated for all appropriate lands. Additional funding for the work has also been allocated for the next several years. As a result, DNR staff have been aggressively putting habitat on the ground and planning for much more. In addition, a forester has been hired to plan timber harvests and equipment is being acquired that will facilitate more prescribed burning and vegetation control efforts on state lands.

MISSISSIPPI

During the past year, the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) provided technical guidance on wildlife habitat management issues to private landowners throughout the state during site visits to 252 unique properties totaling 157,063 acres. Fifty-five percent of these landowners listed bobwhite quail management as an objective, behind only white-tailed deer and wild turkeys. The Fire on the Forty program, implemented by the MDWFP and other partners, provided funding to 220 landowners to burn 17,404 acres for wildlife habitat improvement.



MISSOURI

A study designed to determine differences in nesting productivity (effort and success) on traditionally managed areas (grass strips, hedgerows, food plots) versus extensive grasslands managed only with fire and grazing (more of a natural community management approach) could fundamentally change the way bobwhites are managed in Missouri. Midway through the study, the evidence consistently suggests much better success on the grasslands under fire and grazing, says Scott Sudkamp, the state's quail coordinator. On these areas, coveys break up earlier, birds pair sooner, and nest initiation is also earlier. In addition, nest success thus far has been significantly better on the grasslands than on areas managed under a traditional model. The biologists responsible for the study took home an NBCI National Fire Bird Conservation Award recently for their efforts (see story on Page 17).

NEBRASKA

Progress continues in Nebraska's Meridian Quail Initiative, an NBCI Coordinated Implementation Plan Focal Area. Using funds obtained from a one-year grant from the Nebraska Environmental Trust, quail management projects have been undertaken on 723 acres of public land and 295.9 acres of private land within the Meridian focus area. More work on public land is being planned, and contracts for work on private land are currently in process. Monitoring efforts have entered their second year to document tangible benefits of these management activities in terms of increased quail density.

The Meridian Quail Initiative derives its name from the Prime Meridian that runs through the area. The branding of this area, as well as the use of the NBCI designation, are used in the state's marketing and promotional efforts within the focal area to create a more tangible relationship between the area and the landowners residing within it.

Funding from a new three-year, \$1.35 million Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant will be used to improve and expand the state's Open Fields and Waters (OFW) Program. Through OFW, Nebraska Game and Parks (NGP) offers incentives to landowners

who allow access to quality habitats for hunting, fishing, trapping, and other forms of compatible outdoor recreation. In addition, NGP offers incentives through OFW for habitat upgrades on these private lands when necessary to provide a quality experience. OFW is a joint project of Game and Parks, Pheasants Forever, National Wild Turkey Federation, and Nebraska Environmental Trust.

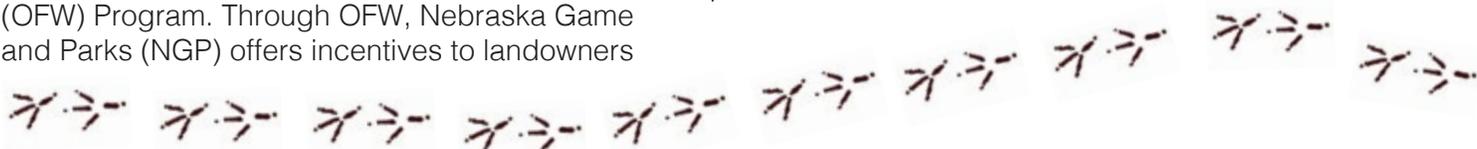
NEW JERSEY

New Jersey Division of Fish & Wildlife has designated four NBCI Focal Areas in the southwestern portion of the state and habitat management practices, including rotational strip disking, field buffering, prescribed burning, edge feathering, native warm season grasses and forb plantings, along with hydro-axing, are continuing. Quantifying existing habitat using the NBCI Coordinated Implementation Program was completed this year.

Concurrently, NJDFW is an active partner with NJ Audubon and Tall Timbers Research Station to restore wild bobwhite to the Pinelands Region in the central portion of the state. In this cooperative project led by NJ Audubon, 80 wild quail were captured in Georgia, brought to New Jersey and released in April 2015. Each quail was fitted with a necklace radio transmitter which will enable University of Delaware graduate students to monitor their movements, habitat use, nesting success and survival. To date, 12 nests have been confirmed, of which six were successfully hatched and produced 66 chicks. Forty-four adults (24 females, 20 males) have survived and continue to be monitored. An additional 80 birds will be captured and relocated in each of the next two years.

NORTH CAROLINA

North Carolina biologists are in the process of evaluating opportunities for potential expanded quail management on their state's game lands. As part of this process, North Carolina Wildlife Resources Commission staff traveled to Georgia to meet with Georgia Wildlife Resources Division personnel to observe and discuss quail management strategies on Georgia's state-owned public lands.



OHIO

Ohio started 2015 by launching its first focus area for quail, the Fallsville Quail Heritage Area. Located in Highland County in southwest Ohio, this partnership between local landowners, the Ohio DNR Division of Wildlife, Quail Forever, and the USFWS Partners for Fish & Wildlife Program will concentrate habitat management efforts on a 10,000-acre area. This area is important to Ohio's bobwhite population because it contains some of the highest densities of quail in the state. Nathan Stricker, the state's quail coordinator, says quail populations are highly fragmented by large expanses of unsuitable suburban, agricultural, or forest habitat. Managing core populations where they still exist in southern Ohio is the best approach to maintaining this species.

The Fallsville Quail Heritage Area will include management on both public and private lands and management efforts which benefit quail are already taking place on Fallsville and Fallsville South public hunting areas within the focus area. Private landowners are taking advantage of a variety of CRP practices, including Ohio's Pheasant State Acres For Wildlife Enhancement (SAFE or CP38) project. (A Quail SAFE project for Ohio was also proposed earlier this year.)

"Management on our public lands alone is likely not enough to maintain or restore quail populations in this area," said Stricker. "Quail are important to the farmers here. They remember hunting coveys with dads and uncles when habitat was more plentiful. The excitement of a flushing covey is a rare experience now, and they are trying to hold onto that for future generations."

OKLAHOMA

The NBTC and NBCI recently designated the Rolling Plains region of Oklahoma and Texas as a Legacy Landscape for Bobwhite Conservation (see more on Page 12).

Oklahoma Department of Wildlife Conservation staff continues to monitor NBCI focal and reference areas and will be conducting fall whistle counts in October. Cover, nesting structure, forbs and other habitat factors are looking the best in years, resulting in two-and-a-half great reproductive efforts from Oklahoma quail despite torrential rainfall and flooding earlier in the year. Biologists are feeling optimistic this year barring any weather disaster in the next few months.

PENNSYLVANIA

Pennsylvania is the first NBCI state where wild bobwhites have been extirpated. In response, the Pennsylvania Game Commission (PGC) Board of Commissioners is establishing the first Pennsylvania Northern Bobwhite Quail Focus Area in cooperation with the Pennsylvania Department of Military Affairs at Fort Indiantown Gap. At the invitation of PGC, NBCI staff visited Fort Indiantown Gap and will be providing guidance on this restoration effort based on NBCI's 2.0 plan and Coordinated Implementation Program.

SOUTH CAROLINA

The Indian Creek Habitat Restoration Initiative entered Phase II this year with nearly 24,000 acres added to the 16,000 original acres in Newberry and Union counties. Initiated in 2005 as a partnership between landowners, wildlife interest groups, and federal and state agencies to improve habitat for species dependent on grassland and woodland savannas, the original project resulted in a 500% increase in bobwhites, based on annual covey counts.

The now 40,000-acre expanse includes both private and public land, notably the Delta Wildlife Management Area (WMA). This WMA is comprised of mostly pastures and grasslands in an otherwise heavily forested landscape. It will give the partners a place to showcase native warm-season grasses and may provide demonstration areas for incorporation of well-balanced habitat management and grazing. Partners already involved include USDA Forest Service, South Carolina Department of Natural Resources, South Carolina Forestry Commission, USDA Natural Resources Conservation Service, Clemson Cooperative Extension Service, Mid-state Quail and Dove Newberry Chapter, the National Wild Turkey Federation, and Newberry County Soil and Water Conservation District.

"These kinds of results on this type of landscape-level approach are being noticed," said Michael Hook, the state's new quail coordinator. He also reports that the newly formed South Carolina Quail Council's Technical Committee is considering the Indian Creek area as a possibility for the state's first official NBCI Coordinated Implementation Program Focal Area.



TENNESSEE

The Tennessee Wildlife Resources Agency is making strides since implementing its Quail Restoration Plan last year. This year, the agency implemented focus areas for each of the four anchor wildlife management areas and initiated quail counts on each of these areas, which were repeated for each anchor.

Implementation of other quail surveys as outlined in the NBCI Coordinated Implementation Program, including fall covey counts, are scheduled for next year.

TEXAS

During the 83rd Texas State Legislature, \$6M in Upland Game Bird Stamp Funds was authorized to be spent on the bobwhite quail. (Upland game bird hunters are required to purchase a \$7 stamp that accumulates in a fund dedicated to these species.) Texas A&M AgriLife Extension Service received \$2M for research, outreach and education and Texas Parks and Wildlife Department (TPWD) was given the green light to spend \$4M toward the development of quail focus areas with conservation partners.

One of those partners, the Oaks and Prairies Joint Venture (OPJV), exceeded all expectations by delivering approximately \$700K (\$520K Upland Stamp, \$120K Conoco Phillips, and \$60K Texas Quail Coalition) in two years to 65 on-the-ground habitat projects with the help of the American Bird Conservancy and the National Wild Turkey Federation (NWTF).

The program, the Grassland Restoration Incentive Program (GRIP), provides financial assistance for habitat projects on private lands to aid in the conservation and restoration of bobwhite quail and other grassland birds. Projects are actively sought within 15 focus counties and reviewed by local initiative teams made up of TPWD, Natural Resources Conservation Service, NWTF, OPJV and Texas Wildlife Cooperative staff.

So far, 43,275 acres of habitat improvements have been completed, including prescribed grazing, brush management, native grass restoration and prescribed burning. The GRIP program is complemented with intensive bird monitoring funded through a separate USFWS Pittman-Robertson grant. Preliminary results are encouraging and although the TPWD support

has come to an end, the OPJV has secured an additional \$300K to continue work over the next two years. For more information, go to www.opjv.org/#!/grip/c1dax.

VIRGINIA

On the heels of a General Assembly-requested quail program review, the Virginia Department of Game and Inland Fisheries (VDGIF) is moving on several broad strategies requiring multi-agency involvement on behalf of bobwhites. They are:

- a campaign directed at state agencies to better manage their existing land base for early succession species;
- soliciting counties to allow a wildlife land use conservation property tax valuation for lands converted to wildlife habitat;
- a cooperative strategy aimed at changing current policies related to prescribed fire in order to allow for a safe increase in the use of prescribed fire as a land management tool;
- the development of a comprehensive, multi-agency marketing campaign that raises awareness of the plight of early-succession species and their related habitats, something on the order of a “Young Habitats Initiative” and
- Virginia is also developing a wild quail trap and transfer policy modeled after Georgia’s, but tailored to Virginia’s needs, and will work with landowner cooperatives to meet requirements necessary to establish quail populations in areas where their numbers are very low, or where they have been extirpated, but sufficient quality habitat exists.

In addition, VDGIF has secured funding to work with the Virginia Department of Forestry to bring the state forest action and the state wildlife action plans into alignment. This agreement will involve several staff training sessions and a cooperative prescribed fire project.



Two Regions Earn ‘Legacy Landscape’ Designation

GALLOWAY, New Jersey—Decades, and in one case a century, of good land stewardship and aggressive bobwhite management and research across millions of acres on opposite ends of the bobwhite range were recognized here recently as the 34 million-acre Rolling Plains of northwest Texas and western Oklahoma and the 700,000-acre Red Hills/Albany region of north Florida and southwest Georgia were each declared a Legacy Landscape for Bobwhite Conservation.

The National Bobwhite Conservation Initiative (NBCI) and its technical advisory body, the National Bobwhite Technical Committee (NBTC), announced the designations during the annual meeting of the nation’s bobwhite experts.

“While most of the nation’s bobwhite managers are focused on restoring diminished bobwhite habitats and populations, it’s important to remember that some regions of the country have remained bobwhite bastions,” said NBCI Director Don McKenzie. “The national bobwhite community wants to recognize and encourage long-standing efforts to conserve and maintain the remaining vast areas of existing bobwhite habitat, whether through management practices or other decisions, that provide long-term viability of not only wild bobwhite populations but also many other associated species,” McKenzie said. “Both the Rolling Plains and the Albany/Red Hills regions are longstanding national models for such efforts and tradition, and we commend these regions, their landowners and others for this enviable status.”

Primary criteria for the Legacy Landscape designation includes an extensive area of ecologically “contiguous” habitat that has for decades or longer supported high densities of wild northern bobwhites, a long-term tradition of purposefully implementing or maintaining land use practices that support bobwhite habitat conservation, and landowners, hunters and other stakeholders who have demonstrated strong support for quail hunting, management and/or quail research over multiple decades.

The Rolling Plains region is generally described as the area about 100 miles either side of a line from Sweetwater, TX to Sweetwater, OK. This eco-region’s landscape holds large sections of contiguous habitat that have long supported significant bobwhite populations, and landowners have implemented purposeful bobwhite habitat management for decades. About 60% of the Rolling Plains is rangeland and 30% is cropland. The major land uses are ranching (beef cattle) and farming (mostly dryland wheat and cotton). A strong and growing research network of several institutions

has also become established in the last eight years.

The Red Hills portion of the Albany/Red Hills region lies between the Aucilla and Ochlocknee rivers from Thomasville to the Cody Escarpment in Florida, while the Albany portion is located on the Dougherty Plain in southwest Georgia. This region is a unique, diverse landscape of expansive pine savanna harboring the largest bobwhite population in the southeastern U.S., with populations sustained at high densities across a contiguous managed landscape. More than 700,000 acres are managed across more than 200 properties (ranging from 300–20,000 acres) using frequent prescribed fire to mimic and restore the natural fire history. This is the only region in the Southeast that has consistently applied prescribed fire to the land in natural frequency for over 100 years and it is home to the best quality remnants of old-growth longleaf pine forests. Additionally, the region has nearly a century of bobwhite research which continues today.



Accepting the Legacy Landscape designation for the Rolling Plains region were (left to right) Robert Perez of the Texas Parks & Wildlife Commission and Kyle Johnson of the Oklahoma Department of Wildlife Conservation.





Greg Hagan, Florida Fish & Wildlife Conservation Commission, (left to right) Dr. Theron M. Terhune of Tall Timbers Research Station and Reggie Thackston of the Georgia Department of Natural Resources accepted the Legacy Landscape designation for the Albany/Red Hills region.

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NBCI Joins American Wildlife Conservation Partners

The American Wildlife Conservation Partners (AWCP) welcomed the NBCI as a partner in wildlife conservation at its annual meeting on August 21. The election followed a presentation by director Don McKenzie about NBCI’s 25-state led mission to restore huntable bobwhite populations to the American landscape. By joining the sportsmen’s consortium, the NBCI will work with over 40 other sportsmen’s organizations to conserve wildlife and wildlife habitats through coordinated national policy actions.

According to its charter, “AWCP organizations are committed to identifying specific needs and working together toward fulfilling those needs; the unifying element is a shared commitment to:

- Build unity among partner organizations and increase collective effectiveness;
- Maintain and communicate a vision for wildlife conservation
- Develop and pursue implementation of recommendations for the Administration and Congress to achieve this vision.”

The AWCP develops “opt in” policy positions on national conservation issues but respects the autonomy of its partners and does not speak for any partner group without their specific approval. The AWCP focuses its advocacy on commonalities and principles, including habitat, wildlife populations, hunting and trapping, scientific management of wildlife and habitat, and the North American Model of Wildlife Conservation.

“The NBCI is pleased to work with its counterparts in the wildlife conservation community through AWCP to help unify its collective strength and apply it to common challenges and opportunities to protect wildlife, habitat, hunting, trapping, and the way of life they represent,” said NBCI Director Don McKenzie.



Tall Timbers/Georgia DNR Work on Translocation Of Wild Bobwhites Recognized with National Award

The development of an innovative translocation or relocation policy for wild bobwhites by Tall Timbers Research Station and Land Conservancy and the Wildlife Resources Division of the Georgia Department of Natural Resources garnered an Award for Group Achievement from the National Bobwhite Technical Committee.

The entities were cited for “exemplifying collaborative efforts and thinking outside the box” in developing the ability—and process—for relocating wild bobwhites. This

process is being viewed as a viable method in assisting areas where wild birds have disappeared to jump start population recovery if there is sufficient quantity and quality of habitat.

The group has transplanted over 1,275 wild quail to five properties totaling over 18,700 acres in Georgia and Florida, and another 1,750 wild bobwhites to nine properties totaling over 70,000 acres in six other states.



Dr. Theron M. Terhune of Tall Timbers Research Station (left) and Reggie Thackston of the Georgia Department of Natural Resources accept the NBTC Award for Group Achievement.

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National Bobwhite Group Honors UT Center for Native Grasslands Management

The Center for Native Grasslands Management (CNGM) at the University of Tennessee Institute of Agriculture took home one of two Awards for Group Achievement presented by the National Bobwhite Technical Committee (NBTC) during the group's annual meeting recently.

The center, established in 2006 in Knoxville, Tennessee, provides technical and economic information to producers and land managers for establishing and managing native grasses on "working lands." Replacement of a portion of exotic, cool season pasture grasses with native warm season grasses is a key objective of both the NBTC and NBCI in efforts to restore wild bobwhites to the landscape while providing producers an economic buffer in times of drought.

"Their work has emphasized forage production, biofuels and the integration of both, along with restoration

of native grassland plant communities, oak savannas/ woodlands and the wildlife conservation aspects of native grasslands management," said Virginia's Marc Puckett, chair of the group's awards committee, in announcing the award. Puckett said the center also focuses on making information widely available through respective state Extension Service offices.

"The sheer volume of exotic, cool season grasses in the East that could be converted to native warm-season grasses, and the likelihood that those grasses can be profitably managed for cattle in large blocks more conducive to grassland birds, provides hope that open spaces with suitable habitat required by grassland wildlife can continue to be a part of the landscape," said Puckett.



CNGM researcher Dr. Chris Lituma accepts Award for Group Achievement from NBTC Chair Marc Puckett.

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NBTC Honors Kentucky Biologist

John J. Morgan, small game program manager for the Kentucky Department of Fish & Wildlife Resources (KDFWR), took home the National Bobwhite Technical Committee's (NBTC) Award for Individual Achievement at ceremonies at the NBTC's last annual meeting.

Described in the nomination as "a true leader in this field of quail conservation," Morgan has not only led efforts to restore wild quail on Kentucky's landscape but also has been instrumental in national bobwhite recovery efforts as well.

Morgan has served for years on the group's research subcommittee, is current secretary/treasurer and incoming chair (2016) of the NBTC, has played a pivotal role in the development of the Coordinated Implementation Program (CIP) for the National Bobwhite Conservation Initiative, and recently led his state in hosting a CIP habitat assessment training program for biologists from 14 other states.

A 10-year veteran of KDFWR, Morgan also helps coordinate private land habitat management activities in Kentucky. He has over 15 years of professional experience in Pennsylvania, Georgia, Florida, and

Kentucky and is a certified wildlife biologist. He earned his undergraduate degree at Penn State and his master's at the University of Georgia.

NBTC is the creator of and technical advisory group to the National Bobwhite Conservation Initiative, the habitat-based strategy of 25 state wildlife management agencies to elevate wild bobwhite restoration to regional and national levels. It meets annually to review progress and help identify opportunities and obstacles to bobwhite restoration.



John Morgan

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NBCI Recognizes Individuals, Entities in Six States With 2015 National Fire Bird Conservation Awards

The contributions to wild bobwhite restoration by entities and individuals in six National Bobwhite Conservation Initiative (NBCI) member-states claimed the coveted NBCI National Fire Bird Conservation Awards at the annual meeting of the National Bobwhite Technical Committee recently.

Award recipients are nominated 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 on a landscape scale.

"NBCI provides this avenue for states to recognize and thank those making meaningful contributions to the science-based restoration agenda, and perhaps help encourage others to join their efforts," said NBCI Director Don McKenzie. "We need as many individuals, agencies and organizations as possible actively contributing to this unified 25-state strategy."

The award's name symbolizes the historic reliance of bobwhites on fire in much of its range to maintain the landscape in an "early successional" stage, that is, in the native grasses, wildflowers and "beneficial weeds" providing bobwhites with suitable habitat. Both wildfires and fires intentionally set by landowners to clear farm fields and woodlots 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, pollinators and other wildlife that require early successional habitats to survive.

2015 award recipients were:

FLORIDA—Upland Ecosystem Restoration Project Steering Committee

Florida's Upland Ecosystem Restoration Project (UERP) Steering Committee has provided the leadership in increasing the use of prescribed fire on the landscape and having over 110,000 acres of public lands managed for bobwhites.

UERP is a cooperative partnership between the Florida Forest Service, Florida Park Service, Florida Fish and Wildlife Conservation Commission, U.S. Forest Service and Tall Timbers Research Station to improve populations of bobwhites and other declining species on public lands throughout Florida.

Florida leads the nation in the application of prescribed fire, issuing over 100,000 burn authorizations allowing landowners and state and federal agencies to conduct



prescribed burning on an average of two million acres each year. Most importantly, a large percentage of these acres are burned on a 1–3 year frequency in an effort to maximize the early successional habitat these species require, a primary objective of the UERP Steering Committee.

UERP Steering Committee members include: Jim Karels, director, Florida Forest Service; Parks Small, chief, Florida Park Service; Eric Sutton, assistant executive director, Florida Fish and Wildlife Conservation Commission; Marianne Gengenbach, program administrator, Florida Division of State Lands; Dr. Bill Palmer, president/CEO, Tall Timbers Research Station; and Lane Green, North Florida Prescribed Fire Council Steering Committee.

KENTUCKY—Shaker Village of Pleasant Hill

Shaker Village of Pleasant Hill (SVPH) is one of the Kentucky Department of Fish and Wildlife Resources' (KDFWR) strongest allies in bobwhite restoration. Beginning in 2009, SVPH began the transition from the cattle business into a wildlife habitat management role, specifically focusing on bobwhite. Fast-forward six years and with more than 1,000 acres of high quality bobwhite habitat on the ground, SVPH is now known locally, regionally and nationally as one of the largest quail restoration success stories in the country.

KDFWR has used SVPH as a springboard to validate its 10-year quail restoration plan, "Road to Recovery." The property has been a proving ground to demonstrate that habitat restoration truly is the answer to restoring wild bobwhite. Kentucky was one of a few states to pilot test the NBCI's Coordinated Implementation Program (CIP) protocol. Prior to pilot testing, Shaker Village was the site for the first meetings to create the national CIP and was recently home to the first-ever CIP training attracting representatives for 14 states to learn about the new protocol.

In past years, hunting was not allowed on SVPH property. Today, quail, deer, and other small game hunters are regularly seen on the property, with all proceeds from the hunts going directly to manage and maintain the SVPH habitats.

LOUISIANA—Christian Winslow & Sandy Hollow WMA Burn Team

Sandy Hollow Wildlife Management Area (WMA) is the state's only WMA dedicated to bobwhites. Winslow and his colleagues with the Louisiana Department of Wildlife and Fisheries' burn team assess habitat response and burn needs annually, then conduct prescribed burns using small patch burning at a rate of 2,000 acres annually—with plans to increase burn acres in future years.

Bobwhite numbers observed in annual summer whistle counts have trended upward since the early 2000s in response to these efforts, and under Winslow's leadership other quail friendly practices are also

increasing, including fallow disking, wildlife plantings, and timber harvests. The Sandy Hollow team created and maintains some of the highest quality bobwhite habitat in the state. Sandy Hollow burn team staff includes Tommy Bruhl, Jill Day, Calvin Waskom, Wade Fitzsimmons, Jake Tate, and Jason Childress.

MISSOURI—Kyle Hedges and Frank Loncarich

As Missouri Department of Conservation (MDC) public land managers with responsibility for a combined 26,000 acres in southwest Missouri, Hedges and Loncarich have demonstrated convincingly that bobwhites can be a part of a native grassland management program built upon grazing and prescribed fire. While these tools are commonly applied for bobwhite management in range country, they have often been approached with hesitation and skepticism in the Midwest, where public—and often agency—perception is that grazing is inherently bad for natural resources. Their work has clearly shown that these powerful management tools can be applied in Midwestern landscapes with positive results for grassland flora and fauna. The pair also recently proposed and earned approval for a long-term study of the effects of different native-forages grazing management styles on bobwhite breeding ecology. Now midway through the study, this project shows promise to fundamentally change MDC's approach to quail management on many public lands.

TENNESSEE—Clint Borum

As a biologist for Tennessee's Landowner Incentive Program (LIP), Borum has integrated bobwhite quail habitat into most of the private lands contracts that he has managed, and he has emerged as one of best "bobwhite arsonists" in the state. Borum averages 12 prescribed burns per year to improve bobwhite habitats, and handles many technical assistance calls from landowners annually. He also has identified how to successfully integrate quail habitat into management plans for landowners whose primary interests are often deer and turkey.

VIRGINIA—Robert "Bob" Glennon

Retired from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) after years as a plant materials specialist, ecologist, natural resource planner and manager of the National Farm and Ranchland Protection Program, Glennon has contributed his expertise to the Virginia Department of Game and Inland Fisheries' Quail Team for more than four years. His emphasis is on outreach and he routinely attends and displays posters oriented toward quail recovery at multiple conservation events annually. He is a routine contributor to the state's Virginia Bobwhite Bulletin page on Facebook and has spent innumerable hours mentoring the team's young biologists, helping them develop a superior knowledge of plants and herbicides, and the role they each play in quail management.



Science Makes the Case for Native Grasses ... So Why the Continued Bias for Exotics?

By Jef Hodges, NBCI Grasslands Coordinator

When one talks about native grasses what comes to mind for many is the “true prairie” or tall grass prairie (approx. 150 million acres) which extended from the Gulf Coast south of Houston, north into western Ontario, Saskatchewan and Alberta in southern Canada and east to northeast Indiana.

However, it’s estimated that grasslands once covered one billion acres in the U.S., which included the mixed and short grass prairies of the Great Plains, mixed grasslands of the Intermountain region and West, and grasslands of the savannas and open woodlands of the eastern U.S. Today, a majority of the eastern native grasslands are gone or severely diminished, and many western grasslands are declining through mismanagement and overgrazing.

If of an evolutionary mindset, one can logically argue that these native plants evolved and adapted to their locations, thus are the best suited for those ecological sites and there are all those evolutionary reasons for their presence. However, early European settlers, unfamiliar with the benefits of the natural resources of their newfound home, slowly replaced those grasses with introduced species with which they were familiar.

Over time and through advances in science and agriculture, what started as a slow conversion accelerated to become nearly a complete conversion to exotic non-native species, with only a few remnants of native vegetation remaining in the East and only

minor representations of once expansive vast grasslands of the West.

There are many benefits of native grasses (native grasses is used as a generic, all-inclusive term also including all the native forbs and legumes of a native ecosystem) which have been documented through scientific research: water quality; soil conservation; soil function; air quality; forage; biomass; and wildlife. These studies show that native grasses are at least equal—and in several cases superior—to the non-native counterparts that are promoted for most of the above functions.

Native vegetation possesses significantly greater root mass than non-native grasses, with up to 70% of total biomass below ground. Research in Nebraska measured underground plant materials of big and little bluestem and found they yielded 5.4 and 4.4 tons per acre respectively in just the upper 12 inches of soil.

Native vegetation also serves well as interceptors of falling rain, dissipating the energy of the raindrops and



holding from 50% to 97% of the rain that falls, keeping rain drops from impacting the soil. Accumulated residual leaf and stem materials on the soil surface additionally serve to protect the soil and retard runoff, slowing the water and allowing for greater infiltration. Tall, stiff stemmed native grasses slow water velocity and maintain their effectiveness longer than short, sod-forming grasses which clog with sediment more readily.

Native grass filter strips in Iowa were found to trap up to 50% of coarse sediments and removed significantly more nitrogen and phosphorus than cool-season filter strips. Native grasses have been shown to be at least equal to exotic cool-season grasses for erosion control and superior for nutrient/sediment retention, filtration and longevity for filter strip applications.

Up to a third of native grasses' root systems die and regenerate each year, adding a significant amount of soil organic carbon. Increased soil organic matter and macropore space increases infiltration rate and water holding capacity. Micropore space created by decaying fine root structures and mycorrhizae create capillary action which also increase water holding capacity. Decaying root masses increase fertility and deep roots—six to twelve feet or more deep—access nutrients and moisture otherwise unavailable to shallower-rooted exotic non-native grasses. Studies have shown that infiltration rates in native grasses are at least equivalent to that of tall fescue and are significantly better than that of bermudagrass.

Native grasses sequester carbon and store it in the soil. Due to the annual death and regeneration of parts of the extensive root system, more than 95% of the carbon in native grasses is below ground, meaning managed removal of the above ground biomass has minimal impact on the total stored carbon. There are differing results in research comparing carbon sequestration between native warm-season and cool-season grasses, but at the very least native warm-season grasses perform equal to exotic cool-season grasses.

Extensive and deep root systems, more soil organic matter and greater infiltration rates, plus being C4 plants, make native warm-season grasses more drought tolerant than cool-season grasses—lending to their superiority as summer forages. Likewise, these characteristics also make them better suited to deal with climate change.

Native warm-season grasses provide increased summer forage production, putting on their largest amount of growth during the warmest months of the year when cool-season grasses are performing at their worst, providing an excellent complement in a year-round forage system. This increased summer forage production leads

to improved summer weight gains on livestock. Summer weight gains at a variety of locations, using several classes of livestock under different grazing regimes, showed a range of 1.12 to 2.8 pounds Average Daily Gain (ADG) which can typically be maintained during a 90 to 100 day grazing period.

Warm-season native grasses typically out yield cool-season introduced grasses by one to three tons per acre, depending upon species and site quality, reducing the acres needed for hay production. And generally, warm-season grasses require one-third to one-half as much water and nitrogen to produce a unit of dry matter compared to tall fescue.

Native grasses are also an ideal biomass crop not competing with food crops as sources for biomass fuel production. There is no annual cultivation/planting cycle and native grasses out yield many biomass crops with minimal fertilizer and herbicide inputs.

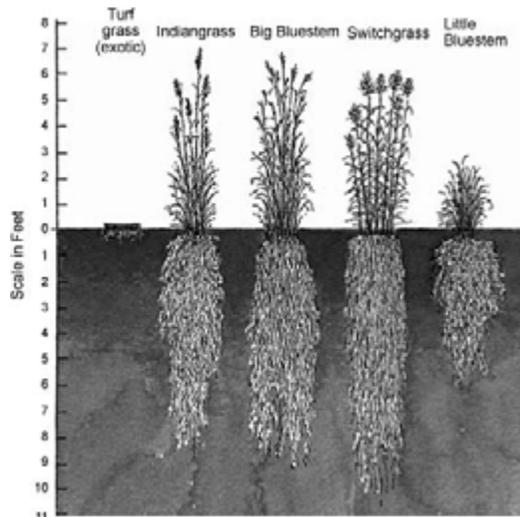
A wide range of vertebrate and invertebrate wildlife use native vegetation for cover, their bunchgrass structure providing brood cover for many grassland bird species. Seeds, leaf and plant parts provide forage for insects, mammals and birds. Flowers provide pollen for pollinator insects and residual leaf material

and structure provide preferred nesting and bedding for many species of wildlife.

It's clear there has been a longstanding bias for exotic grasses for soil conservation applications. It is also clear that research has shown that native vegetation is at least equal in many functions and superior for several others.

With such obvious advantages, why are exotic grasses still favored?

(NBCI's new grasslands coordinator, Jef Hodges is a certified wildlife biologist with a B.S. in Fisheries and Wildlife from the University of Missouri. He has worked with the Missouri Department of Conservation in native grass restoration, as a plant manager and marketer with a native seed company in Missouri, as a regional director and biologist (covering Missouri, Kansas, Iowa, Nebraska, Minnesota and Wisconsin) with the former Quail Unlimited conservation group, and owner/manager of his own company, Total Resource Management, LLC. He is a certified technical service provider by the Natural Resources Conservation Service (NRCS), serves on the NRCS State Technical Committee in Missouri, the Missouri Prescribed Fire Council, and is a member of the Quail and Upland Wildlife Federation, Quail Forever, the Conservation Federation of Missouri, and the Quality Deer Management Association.)



Bobwhites — The Umbrella Species

Oklahoma Study Advances Case for Bobwhites As a Poster Child for Grassland Conservation

By Thomas V. Dailey (NBCI) and Andrew D. Crosby (Michigan State University)

The foundation for bobwhites as a priority for conservation of grassland habitats was strengthened in 2015 with the publication of “Looking Beyond Rare Species as Umbrella Species: Northern Bobwhites (*Colinus virginianus*) and Conservation of Grassland and Shrubland Birds” in the science journal *Biological Conservation*. Hunting-oriented bobwhite enthusiasts have been advocating that the species should have a special place in conservation of ecosystems, and this peer-reviewed publication supports their contention.

Conservationists coined the term “umbrella species” — those whose habitat needs support the needs of many other species — based on the idea that if habitat is protected to support one species of concern, others that rely on the same type of habitat will be protected as well, thus falling under the umbrella of the target species. Well-known umbrella species include spotted owls in the northwest and red-cockaded woodpeckers in the southeast; both relatively rare in abundance and sensitive to human-caused disturbance.

Grasslands, shrublands, savannas and woodlands are some of the most degraded and endangered ecosystems in North America and many wildlife species have declined steeply with the loss of this type of habitat, particularly bobwhites. Among these declining species, bobwhites are unique in that they are becoming recreationally extinct, that is, abundance is too low to maintain interest by quail hunters. Bobwhites in some places have reached unsustainable numbers and are disappearing. Because of widespread and passionate interest in bobwhites, progress has been made recently toward formally using the species as an umbrella species, and the Oklahoma study substantially raised interest.

“Looking Beyond Rare Species as Umbrella Species: Northern Bobwhites (*Colinus virginianus*) and Conservation of Grassland and Shrubland Birds” (*Biological Conservation*, volume 186, pages 233-240,

authored by A. D. Crosby, R. D. Elmore, D. M. Leslie Jr. and R. E. Will) quantified how well the presence of bobwhites in an area predicted the occurrence and richness of grassland and shrubland bird species for part of Oklahoma. Bobwhite presence was strongly correlated with the occurrence of many declining grassland and shrubland species. Some of these, including Bell’s vireo, dickcissel, and grasshopper sparrow, are listed as species of conservation concern by Partners in Flight — a leading international avian organization. Areas where bobwhites occurred also had greater species richness of grassland and shrubland birds than areas that did not.

What this tells us is that bobwhites can indeed act as an umbrella species for other declining grassland and

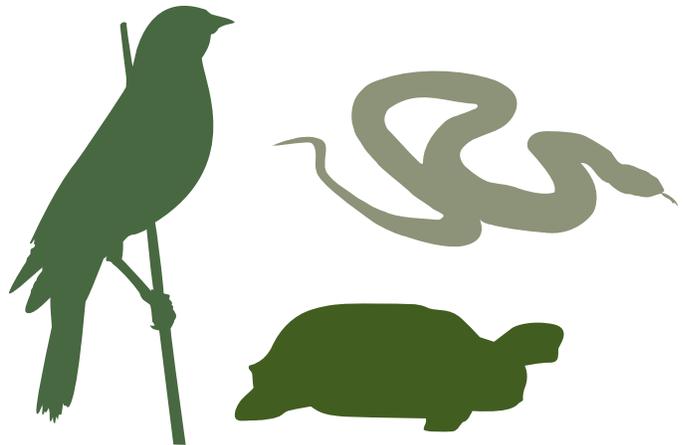


Table: Umbrella species criteria and bobwhite qualifications for meeting those criteria.

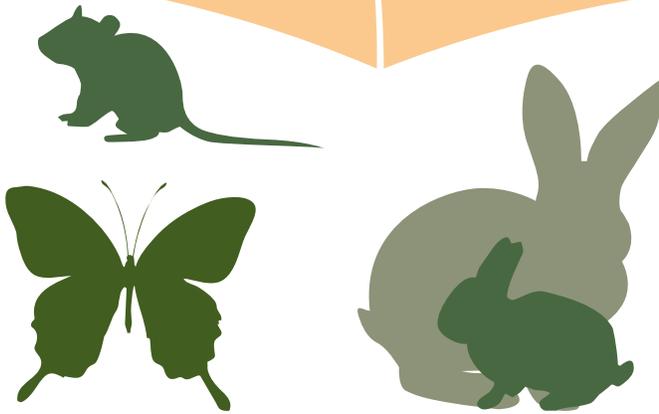
Criteria	Northern Bobwhite qualification
Natural history and ecology well known	One of the most well-studied species in North America
Large home range size	Large breeding season home range relative to passerines of conservation concern
High probability of population persistence	Although populations are in decline, they are unlikely to go extinct in the near future
Co-occurrence with other species	Demonstrated by our research
Moderate sensitivity to human disturbance	Can coexist with certain agricultural activities, but other activities can cause declines
Easily sampled or observed	Occurrence is easily determined



shrubland birds. Because bobwhites have such a wide geographic range and can use a broad spectrum of open habitat types, the species that might fall under the umbrella will vary according to the region and the management objectives of the landowner. Bobwhites also meet standard criteria for consideration as an umbrella species, depicted in the adjacent table. The real gain is that this knowledge provides managers with another tool in the toolbox for biodiversity conservation, and allows limited resources to be leveraged to meet larger conservation goals.

The Oklahoma findings greatly strengthen the foundation for bobwhites as a priority species for conservation of grassland habitats. Hunting-oriented bobwhite enthusiasts and conservation partners have been working together toward this end, and many important steps have occurred over the past decade to broaden bobwhite-centric programs to better benefit other species, and vice-versa. A sampling of examples and cases of species-overlap follow, and most have been identified in the current or previous State of the Bobwhite reports or on the NBCI web site.

- The NBCI Coordinated Implementation Program (CIP) is being followed by the National Park Service/Pea Ridge National Military Park, and Oaks and Prairies Joint Venture.
- The NBCI CIP includes monitoring of grassland birds.



- The USDA NRCS/Mississippi State University Bobwhite Restoration Project and national CP33 Monitoring Program published significant findings on responses of bobwhite and grassland birds.
- Bobwhites are a priority for United States Fish and Wildlife Service Landscape Conservation Cooperatives in the Gulf Coast Prairie, Gulf Coastal Plains/Ozarks and South Atlantic regions.
- Bobwhites are a priority bird for most Joint Ventures in the species range, including Appalachian Mountains, Atlantic Coast, Central Hardwoods, Eastern Gulf Coastal Plain, Gulf Coast, Lower Mississippi Valley, Oaks and Prairies, Playa Lakes, Rio Grande, and Upper Mississippi River and Great Lakes Region.

- The Pennsylvania Game Commission is establishing the state's first quail focus area in cooperation with the Pennsylvania Department of Military Affairs at Fort Indiantown Gap. This bobwhite-friendly grassland landscape was made possible through management for Regal Fritillary butterflies.
- Traditionally strong bobwhite habitat support from the United States Department of Agriculture has been bolstered by unique programs such as the Gopher Tortoise Working Lands for Wildlife Initiative in Georgia, and the lesser prairie-chicken CP38 State Acres for Wildlife Enhancement in Kansas, Oklahoma and Texas.
- Forest management for red-cockaded woodpecker overlaps bobwhite needs, and many studies and publications identify these mutual benefits.
- The State of the Birds 2013, North American Bird Conservation Initiative, featured bobwhite hunting and habitat conservation.
- The NBCI designation, Legacy Landscape for Northern Bobwhite Conservation, (State of the Bobwhite Reports 2014, 2015), has recognized the Red Hills/Albany region of Florida/Georgia, South Texas and the Rolling Plains of Texas and Oklahoma. These private lands provide 7.5 million acres of habitat (State of the Bobwhite Report, 2013, Figure 5) with benefits for many wildlife species. This habitat exists primarily because of world-renowned quail hunting. Notable quotes about the benefits of these quail plantations and ranches to general conservation include the following. Red Hills: "In effect, the region has evolved into a massive, privately owned, accidental reserve of biological diversity" (Audubon Magazine — Ready, Aim, Fire, T. Edward Pickens, 2011); South Texas: "The increasing popularity of quails in Texas represents a genuine benefit to non-target wildlife ... People who are interested in wildlife species that have habitat requirements similar to those of quails should embrace this development." (Chapter 23. Effects of Quail Management on Other Wildlife, W. P. Kuvlesky Jr., in Texas Quails: Ecology and Management, edited by Leonard A. Brennan. 2007.)
- Small-farm operators also place high value on bobwhites and hunting. Four surveys of private landowner interest for implementing habitat conservation in Missouri and Kentucky suggest that bobwhites are a primary motivator (importance ratings 80–96%), and other non-game birds are lower priority (importance ratings 50–78%). As a result of one of these surveys, including focus (See *UMBRELLA* on Page 30)



Persistence Pays Off In Turning Corner On Center Pivot Habitat

By Tom Franklin, NBCI Agriculture Liaison



Every NBCI state except West Virginia has agricultural land irrigated with center pivot systems.

t's been a long and winding road to USDA adoption of an important upgrade for bobwhite habitat on irrigated farmlands in rural America. But the Farm Service Agency finally approved center pivot corners without field border connections under the continuous Conservation Reserve Program (CRP).

After having obtained FSA approval for the Habitat Buffers for Upland Birds (CP33) practice in 2004, state agency wildlife professionals associated with National Bobwhite Technical Committee (NBTC) urged FSA to allow enrollment of center pivot corners without the previously required buffer around a field perimeter. This requirement made it impractical to enroll fields with center-pivot irrigation systems because their circular configuration is not amenable to straight borders. The prohibition of plowing, spraying, and driving on buffers also made enrolling connecting strips difficult if not impossible due to standard planting practices.

A breakthrough came in January 2015 when FSA Administrator Val Dolcini announced that the CRP now will encourage more upland bird habitat to be established in irrigated farmland regions to benefit the northern

bobwhite and other upland birds. FSA acknowledged that farmland with center-pivot irrigation systems that have unconnected corner patches beyond the reach of irrigation will help increase the population of upland birds ... not only bobwhites but prairie-chickens, pheasants, mourning doves, wild turkeys and other grassland-dependent birds, many of which are declining due to habitat loss.

Until recently, less than half of the 500,000 acres nationally allocated for CP33 have been enrolled despite the numerous and well-documented benefits attributed to the practice. The good news is that the stagnation in enrollment is being reversed with the new pivot corner policy already generating approximately 6,000 new acres of habitat as of August 2015.

(See PIVOT on page 30)



Shortleaf Pine and Bobwhite Quail

An Opportunity for Collaboration

By Steve Chapman, NBCI Forestry Coordinator and Mike Black, Shortleaf Pine Initiative Director

Shortleaf pine forests and associated habitats once covered a vast area of the continent from the piney woods of Texas and eastern Oklahoma to the eastern seaboard from New Jersey to Florida. Shortleaf pine once dominated significant portions of its historic range due to the adaptation to frequent fire return intervals that were common for thousands of years until the loss of open range and subsequent fire suppression efforts.



Shortleaf pine not only provided outstanding forest products for dimension lumber, poles and paper—but also excellent wildlife habitat, particularly in stands with adequate sunlight to the ground and frequent fire return intervals. The combined loss of these open forest habitats, along with dramatic changes in cropland and pasture land management, have had dire consequences for bobwhites and other wildlife dependent on these early successional forests.

Shortleaf pine can be found in 22 states (from east Texas to Florida and up the eastern seaboard to New Jersey) and was once dominant across the landscape. According to Forest Inventory Analysis (FIA) data (2012) it is estimated that there is only approximately 6.1 million acres of shortleaf and shortleaf-oak habitats across the range. The same FIA data from the 1980s showed that there was approximately 12.6 million acres of shortleaf pine, shortleaf-oak habitat. This represents a decrease

of 56 percent in habitat across the range. Most of the remaining shortleaf pine can be found west of the Mississippi.

The formation of the SPI came after several efforts, beginning in 2007, by the USDA Forest Service and the Southern Regional Extension Forestry (SREF) to recognize the need to increase the awareness of the importance of shortleaf pine and its associated habitats.

The Shortleaf Working Group formed after a Shortleaf Symposium in Raleigh, NC in September of 2010. This group met several times and laid much of the foundation for the SPI and also hosted the first National Shortleaf Conference in Huntsville, Alabama in 2011. This work culminated in 2012 with the Tennessee Division of Forestry receiving a U.S. Forest Service (USFS) grant for the development of a Restoration for Shortleaf Pine plan and the formation of the SPI in 2013. Participants in the SPI come from a broad (*See SHORTLEAF on Page 30*)



Field Training, Data Management Centerpieces In Coordinated Implementation of Focal Areas

By Dr. Thomas V. Dailey
NBCI Assistant Director/Science Coordinator

.....
"Excellent and absolutely necessary process. We have to do this to measure whether what we are doing is working or not. And this is obviously a massive challenge to get all these different states on board, let alone operating under the same methods consistently. I love this approach."—
Trainee, Shaker Village at Pleasant Hill, Kentucky, May 13-14, 2015.
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KDFWR Commissioner Greg Johnson welcomes training participants

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So began the NBCI Coordinated Implementation Program (CIP) inaugural field habitat assessment training. Hosted by the Kentucky Department of Fish & Wildlife Resources (KDFWR), 40 biologists participated from 17 states (Arkansas, Delaware, District of Columbia, Georgia, Illinois, Indiana, Kentucky, Mississippi, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, South & North Carolina, Tennessee, Texas, and Virginia), two USDA offices, three universities, and two non-government organizations, in addition to NBCI staff and NBTC steering committee members. Five of these biologists were CIP habitat assessment experts from the Kentucky bobwhite program. KDFWR Commissioner Greg Johnson spoke to

the group about the importance of bobwhite conservation in Kentucky and nationally.



KDFWR's Madeleine Pratt leads habitat discussions with biologists from around the region at one of five training stations at Shaker Village.

This was the third CIP meeting hosted by Shaker Village at Pleasant Hill, where bobwhite habitat is some of the best in the country, and thus an excellent venue for training biologists to assess habitat on CIP Focal Areas. Biologists also measure bobwhite and bird abundance in June, and bobwhites in the fall. Focal areas are typically at least a few thousand acres in size, and monitoring continues annually for 10 years. Details are on the NBCI website, under Coordinated Implementation Program.

The CIP is a science-based, methodical approach to bobwhite restoration success. NBCI's goal is for all 25 NBCI states to have at least one CIP focal area. At least



15 states already have a CIP Focal Area or are in the process of establishing one.

Because of the large number of participating states and 10-year duration, NBCI is developing a training manual, primarily on-line, featuring professional video and photos of the Kentucky training sessions. NBCI is also coordinating field data collection and hired a full-time data analyst, Derek Evans. Evans has both a Bachelors and Masters of Science in Forestry from Southern Illinois

.....
'The past year has been ground-breaking for nationally coordinated bobwhite conservation.'

University Carbondale (SIUC). Prior to his hire, Evans worked as a Researcher for the SIUC Department of Forestry where he collected, managed, and analyzed environmental data. Some of Evans' initial tasks with NBCI include consolidating data sources, designing the network architecture for the NBCI data warehouse, automating analytical processes through programming, and designing and administering on-line surveys. The trainee quote at the beginning of this report was a comment in an NBCI questionnaire.

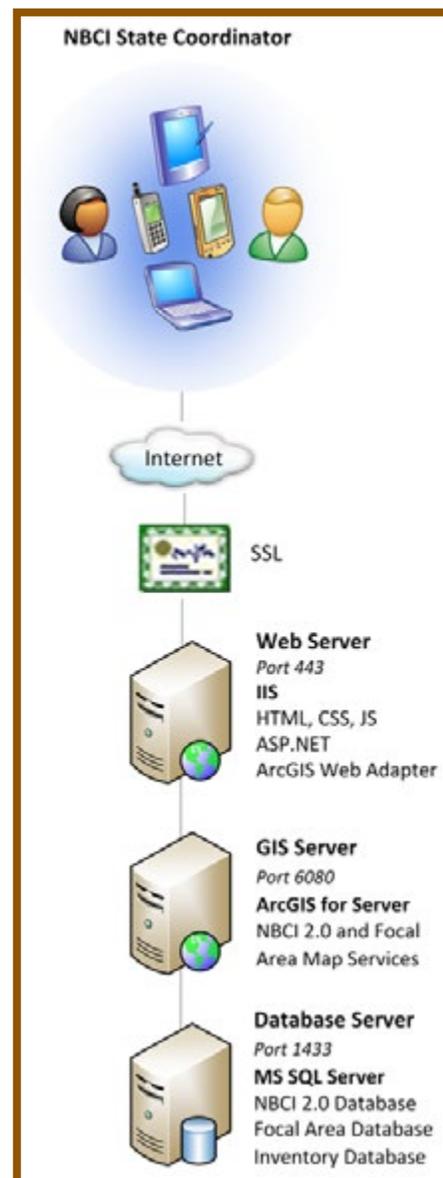
Centralized data management for bobwhite conservation has become increasingly essential as the 25 NBCI state agencies and partners collectively participate in range-wide restoration. NBCI's current data portfolio includes (1) NBCI 2.0 ArcGIS spatial data collected from the 25 NBCI states in 2009–10, (2) five years of annual habitat management tracking data from the 25 NBCI states, (3) a compilation every five years of existing quail population and hunting trend data from the 25 NBCI states, (4) CIP monitoring data on bird and quail abundance, hunter harvest, and habitat, and (5) questionnaires about satisfaction with NBCI services, capacity of state agency quail conservation programs, etc.



Habitat assessment training considered a number of different habitat types.

This NBCI “data warehouse” is safe and secure at the University of Tennessee Institute of Agriculture (UTIA), under Information Technology Services, in collaboration with UTIA's Forestry, Wildlife and Fisheries Department. By January 2016 the data warehouse will be part of a newly launched NBCI Bobwhite Information Network, a technical information and project management website for bobwhite conservationists across the 25 NBCI states.

The past year has been ground-breaking for nationally coordinated bobwhite conservation. As a result of increased funding from the Pittman-Robertson program, long-held priorities to provide bobwhite conservation training to field biologists and centralized data management, analysis and reporting were implemented. This new level of national collaboration has the sole purpose of putting more bobwhites on the ground, and the enthusiastic participation at the first field training last May in Kentucky indicates the states' and our partners' intent to produce more bobwhites.



Kentucky

Hart County Bobwhite Focus Area

Records Astounding Increase in Quail

By John Doty, NBCI Communications Director

When the Kentucky Department of Fish & Wildlife Resources (KDFWR) issued a five-year benchmark report on its 10-year bobwhite restoration initiative earlier this year it created some ... buzz. Habitat restoration and maintenance had delivered increases in bobwhite populations at the five formally monitored bobwhite focus areas of 14%, 52%, 56%, 150% and ... 779% respectively!

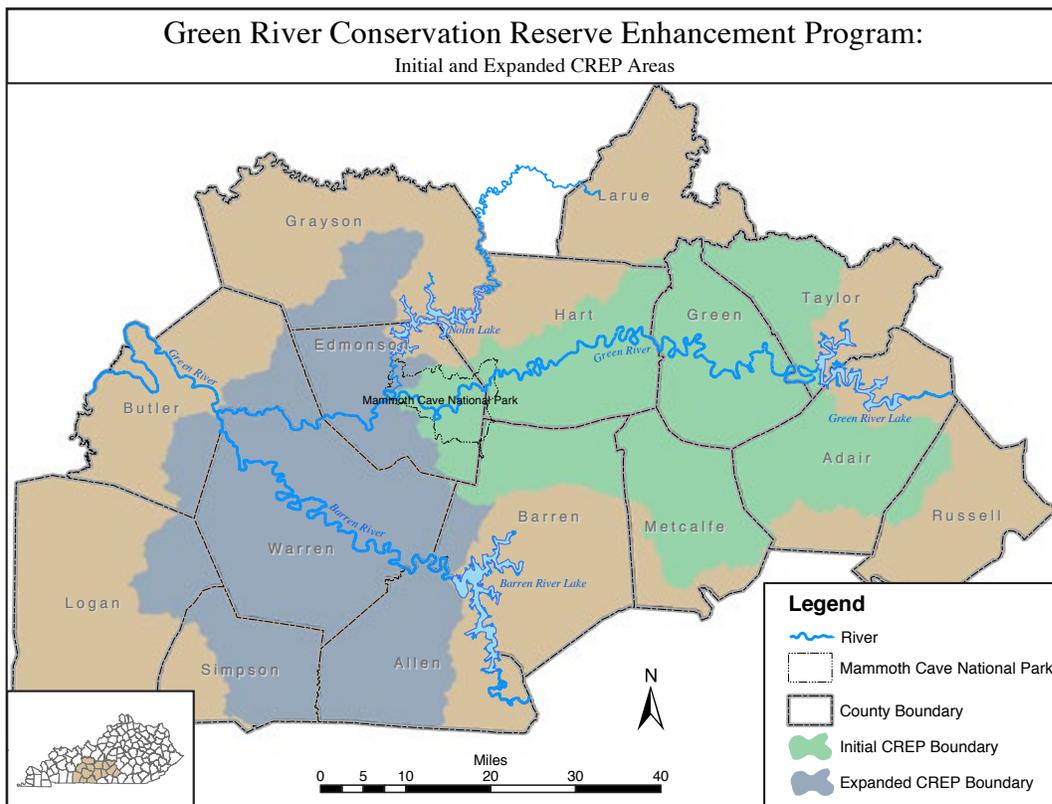
The latter, recorded at the 19,000-acre Hart County Focus Area, really raised some eyebrows, even among habitat deniers. "It's making believers out of people," said Danny Hughes. Hughes is the liaison between the Kentucky Department of Fish & Wildlife Resources and the USDA Natural Resources Conservation Service (NRCS). He's also the Conservation Reserve Program (CRP) technical coordinator for the NRCS in the state.

Tyler Reagan and John Goodin, (KDFWR Farm Bill biologists on this project) both agree that at local gathering places they are noticing people talking about hearing and seeing quail for the first time in years ...

and those people are connecting it to the habitat restoration effort. "We have people buying and trading bird dogs again," said one, even though quail hunting here essentially "skipped a generation." And, they add, "Rabbits have gone crazy."

The Hart County Focus Area is part of the larger—nearly 100,000 acres—Kentucky Green River Conservation Reserve Enhancement Program (CREP) project that has been expanded once since its 2001 introduction and now includes all or parts of 14 counties.

CREP is under the CRP umbrella, the





Mid-contract prescribed fire

country’s largest private-land conservation program. Administered by the USDA-Farm Service Agency (FSA) and technically guided by NRCS, CREP targets high-priority conservation issues identified by local, state, or tribal governments or non-governmental organizations. In exchange for removing environmentally sensitive land from production and introducing conservation practices, agricultural landowners are paid an annual rental rate averaging \$150 per acre. Participation is voluntary, and the contract period is typically 10–15 years, along with other federal and state incentives as applicable per each CREP agreement.

In Kentucky’s case, the “high-priority conservation issue” is protection of the tributaries and the 100-mile main stem of the Green River, the most biologically diverse branch of the Ohio River system, and the Mammoth Cave National Park, declared an International Biosphere Reserve in 1990. The target is a 10 percent reduction in sediment, nutrients and pesticides from agricultural sources, which include corn, soybeans, wheat, canola and cattle. Stirring excitement among locals is that this CREP project is allowing participants to re-enroll for another 10–15 years.

CREP is the umbrella for a number of approved conservation practices (CPs) depending on project objectives and the land use. The majority of Kentucky’s

CREP— over 70,000 of the nearly 100,000 acres — is in CP29, or Marginal Pastureland Wildlife Habitat Buffers. (The 19,000-acre bobwhite focal area was crafted from the most concentrated area of CP29, which includes the 1,000-foot buffers around the abundant sinkholes in the area.)

In addition to the “marginal pastureland” requirement, the landscape could have been originally a native prairie or savanna/barren according to historical records. This area was, and Kentucky officials call this the largest grasslands restoration in the state’s history.

Hughes says the restoration with CP29 is reasonably straightforward. Herbicide is applied to the area, then it is seeded with five pounds of three species of short native grasses and two pounds of four forbs/wildflowers. Hughes uses the short native grasses, even though they are harder and slower to establish, to extend the early successional period and keep it “quail friendly as long as possible.”

Mid-contract management completion and tree encroachment are the big challenges. CP29 in Kentucky CREP is planted to native grasses/wildflowers. “Managing the habitat to remain good quail cover is paramount. We can’t live in the optimal world of management, but what is realistic to achieve on large scale habitat restoration.” Hughes said.

.....
“We have people buying and trading bird dogs again.”



The Kentucky CREP wildflower-native grass mix is an “easy sell” to landowners.



National Military Park Ramps Up Landscape Restoration ... For Historical Accuracy and Bobwhites

By John Doty, NBCI Communications Director



Restoration of the “cultural landscape” of the 4,300-acre Pea Ridge National Military Park has ramped up since the signing of an agreement between the National Park Service (NPS), Arkansas Game & Fish Commission and the National Bobwhite Conservation Initiative last year. The three entities agreed to work cooperatively to turn 2,900 acres into the first NBCI Bobwhite Focal Area in Arkansas and the first in the entire U.S. on NPS land.

From the cultural standpoint, says NPS biologist Nolan Moore, the park is striving to return the landscape to its condition during the two-day battle in spring 1862. “For instance, we can tell park visitors about how troops, a quarter-mile apart, were able to see and engage each other, but they don’t believe it. At the time, this area was mostly open fields and woodlands ... it was much more open than today. Native grasses were everywhere.”

A restoration of the cultural landscape is important to the park, at least in part, because it is the most intact Civil War battlefield in the country and the battle fought there kept Missouri in the Union. It’s important to the park for visitors to understand the battle that occurred on the landscape of the time. It’s also important to bobwhites and bobwhite conservationists because the cultural landscape of that era is bobwhite habitat.

While the park had been pursuing their goal on a small scale, efforts are increasing. The park is currently working on returning 75 acres of fields to native grasses, with herbicide treatments of fescue, sericea, and Johnsongrass, 154 acres of eastern red cedar is being



Given the opportunity, big bluestem and other native grasses regenerate naturally in the park on what recently was a monoculture fescue field





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Telemetry study shows the park's bobwhites are visiting neighboring private properties.
.....

targeted for mechanical thinning, and another 70 to 80 acres has already been thinned in cooperation with the non-profit Conservation Corps of Iowa (CCI). Additional CCI crews, provided by Arkansas Game and Fish, will begin thinning an additional 70 acres of cedar at the park in October. (The Arkansas National Parks Fire Management Group has helped fund the mechanical thinning and conducts the prescribed fires, while the Midwest Exotic Plant Management Team (EPMT) has also helped provide the CCI groups and does much of the herbicide treatment.)

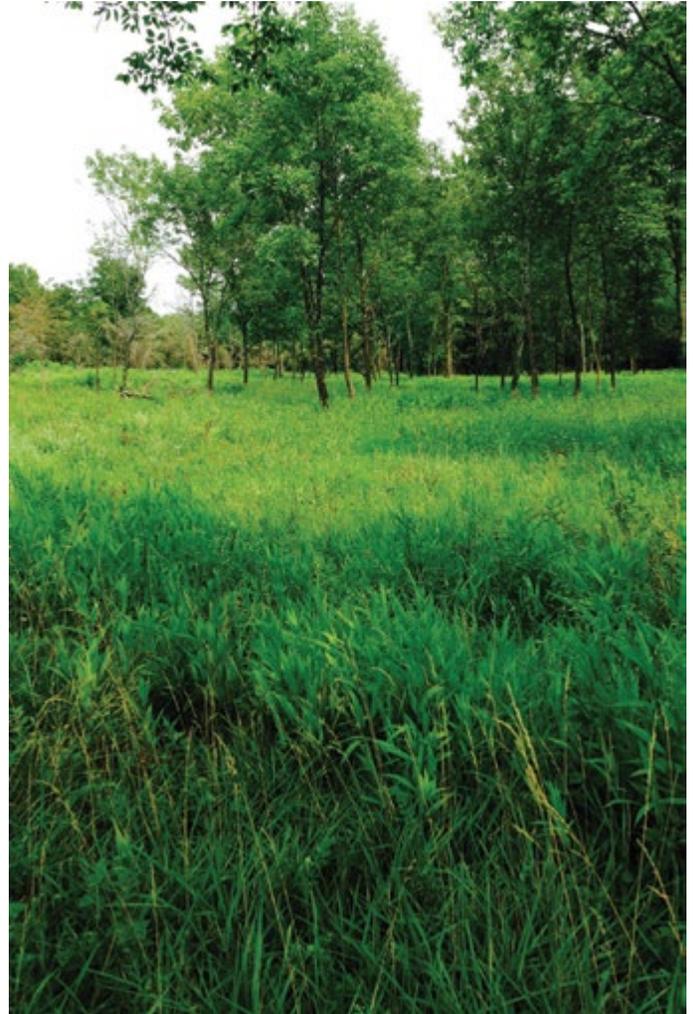
Thinning to keep opening up wooded areas, targeted herbicide applications and prescribed fire are the key management tactics and Moore says the park's seed bank is responding with native plants. "If we get a good return from the seed bank that's what we'll continue to do, otherwise, we are willing to re-seed. So far it's all natural."

The project is generating "great support" from the local community, Moore says, including media attention, a donation from a local quail group, Benton County Quail, and recent offers of assistance from the Arkansas Master Naturalists, Ozark Regional Land Trust, and the Fayetteville Natural Heritage Association. A meeting with adjacent private landowners generated enthusiasm when the park was able to tell them about a study conducted at the park that showed radio-tracking evidence of the park's existing bobwhites moving as much as a mile-and-a-half outside park boundaries onto adjoining land.

Moore says the park also hopes to include the 4th grade science class at Pea Ridge Primary in the bobwhite work as well. This year, the park partnered with the school to secure a greenhouse that the class plans on using to grow native plants for the park's use.

"I hope we can get them out here when we're putting tracking devices on the birds so they can see a bobwhite and learn a little about them. After all, they are our future conservationists and outdoor enthusiasts.

"It's all a work in progress."



This area was a closed-canopy cedar thicket before management.
.....



UMBRELLA (Continued from Page 21)

group discussions, ostensibly to benefit greater prairie-chickens in West Central Missouri, conservation programs adjusted to prioritize bobwhites because the importance ranking for the non-hunted chicken was 60%, but >80% for bobwhites.

- Kentucky's premiere quail hunting destination, Shaker Village of Pleasant Hill, was developed on a foundation of habitat management for grassland birds and now is a bird watcher magnet.
- Southeast Partners in Flight is represented on NBTC's steering committee, and the two organizations met jointly for their annual meetings in 2009.
- The bobwhite has been designated a surrogate species in the Flint Hills of Kansas by the U.S. Fish and Wildlife Service and Kansas Department of Wildlife, Parks and Tourism.

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PIVOT (Continued from Page 22)

Of course landowners are benefiting, too. In return for providing these benefits on their property, qualified producers may receive bonus payments and annual rental payments between 10 and 15 years. Landowners can enroll pivot corners in the continuous Conservation Reserve Program at any time by contacting their local Farm Service Agency office at offices.usda.gov or visit the website at www.fsa.usda.gov/conservation.

(Tom Franklin is NBCI's new agriculture liaison in Washington, D.C. Most recently Senior Director of Science and Policy for the Theodore Roosevelt Conservation Partnership, Franklin is a certified wildlife biologist who has extensive experience in conservation policy and is widely known in Washington as field director and policy director of The Wildlife Society for 22 years, and in his role on the Wildlife and Hunting Heritage Conservation Council advising the secretaries of the U.S. Departments of Agriculture and Interior.)

SHORTLEAF (Continued from Page 23)

range of private and public organizations working in the shortleaf pine ecosystem.

A big step was taken in the fall of 2014 with the hiring of a director (Mike Black, who came to the Shortleaf Pine Initiative from the National Bobwhite Conservation Initiative where he was Forestry Coordinator and was very active in the formalization of the initiative).

Since the director hire there has been a flurry of activity within the SPI, with several workshops for landowners and natural resource professionals across the range and more planned. An advisory committee has been formed with representatives from the USFS, National Wild Turkey Federation, University of Tennessee, Resource Management Services, LLC, Southeastern Association of Fish and Wildlife Agencies, Southern Group of State Foresters, National Association of Conservation Districts, Southern Regional Extension Forestry, National Fish and Wildlife Foundation, U.S. Fish and Wildlife Service, American Forest Foundation, Natural Resources Conservation Service and The Nature Conservancy. The committee recently met for the first time in Nashville, Tennessee.

The Third Biennial Shortleaf Pine Conference will be held in Knoxville, TN, September 22–24, where the Draft Shortleaf Pine Restoration Plan will be formally released to the public.

(NBCI's new forestry coordinator, Steve Chapman, has earned his reputation as a forester who works with biologists to create wildlife habitat in forested settings. He is a graduate of the University of Georgia's Warnell School of Forestry and Natural Resources with a B.S. in Forest Resources and worked with the Georgia Forestry Commission for 27 years before launching his own habitat management services company. He is active in the Society of American Foresters, serves on the board of his local chapter of the National Wild Turkey Federation, was a principal in the development of the first Longleaf Academy, served on the Natural Resources Conservation Service's (NRCS) State Technical Committee and was a member of the Southeastern Forestry and Wildlife Working Group.)



Ben Robinson



STATE CONSERVATION REPORTS

This section contains highlights of bobwhite conservation in 2014 and early 2015 as reported by each state's NBCI quail coordinator. Current information on 2015 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. State quail coordinator contact information can be found at the end of each report. Bobwhite conservationists continued aggressive and innovative restoration, and habitat management continued to surge in many places compared to conditions reported for the drought year of 2012. Quail habitat work is summarized in the NBCI Inventory section and Figures 1–4, and details of all state programs are described in state conservation reports. Highlights of state reports are described below.

Bobwhite Populations

Pennsylvania is the first NBCI state where wild bobwhites have been extirpated. In response, the Pennsylvania Game Commission Board of Commissioners is establishing the first Pennsylvania Northern Bobwhite Quail Focus Area in cooperation with the Pennsylvania Department of Military Affairs at Fort Indiantown Gap. Similarly, low bobwhite abundance in Maryland and New Jersey resulted in efforts to translocate wild bobwhites to experimental areas in these states.

Range-wide, population trends were reported by many NBCI states this year, using the most recently analyzed data, typically for 2014. Overall, quail continue to stay above recent low populations experienced from the drought of 2012. Iowa's quail population index was the highest since 2004, and several states were pointing to another upward tick in abundance, particularly in previously drought-stricken Great Plains states of Kansas, Nebraska, Oklahoma and Texas. Too much rain, however, was a concern in some areas, with the potential to reduce nest production. Severe winter weather in Midwest states of Indiana, Kentucky and Ohio lead to a substantial reduction in bobwhite abundance. Detailed information on 2015 population and hunting prospects are available on state agency web sites, many of which are embedded in the on-line version of this report.

Bobwhite Hunting

Hunting of bobwhites continued in all 25 NBCI states. New Jersey continued prohibition of wild bobwhite hunting, and based on the latest research in Pennsylvania (above), this state too is totally reliant on released pen-raised bobwhites.

Across NBCI states, some areas with suitable habitat reported major increases in hunting following weather favorable for increased quail abundance. The Georgia Department of Natural Resources property, DiLane, experienced record high bobwhite abundance and excellent hunting. In Texas, the 2014 hunting season quail harvest increased 56% from the previous year.

Among NBCI states reporting recent data on statewide quail hunting, the number of quail hunters (hunting wild and/or released pen-raised bobwhites) was highest in Kansas (38,351 hunters), Texas (31,568) and Oklahoma (21,347); mid-range, 10,000–17,000 quail hunters, in Alabama, Florida, Georgia, Illinois, Indiana, Nebraska,

Oklahoma and Texas; lower, 1,000–9,999 quail hunters, in Iowa, Louisiana, New Jersey and Pennsylvania, and lowest, <1,000 quail hunters, in Delaware and Maryland.

Aside from recent bobwhite population variation caused by weather, bobwhite hunting and harvest continue to be near record-low levels as a result of increasingly widespread inadequate habitat. Lacking wild bobwhites, released pen-raised bobwhites continue to be a primary quarry in some areas. Regardless of the origin of hunted bobwhites, persistent harvest of hundreds of thousands of bobwhites each year in Alabama, Florida, Georgia, Kansas, Missouri, Oklahoma, Texas and Virginia, and lesser numbers, or unmeasured numbers, in all other NBCI states, demonstrates the importance to our culture and economy of bobwhites as a hunted species of wildlife.

Conservation Highlights

Across the NBCI states, USDA conservation programs continue to provide the majority of actively-managed habitat via the following key programs: USDA CP33 Habitat Buffers for Upland Birds, USDA Conservation Reserve Program (CRP) mid-contract management, USDA CP38 State Acres for Wildlife Enhancement, USDA CP42 Pollinator Habitat, and USDA Voluntary Public Access. The Iowa Department of Natural Resources received a \$3,000,000 USDA Voluntary Public Access grant to expand the Iowa Habitat and Access Program (IHAP), with anticipated benefits to bobwhites, and the Kansas Department of Parks, Wildlife and Tourism is expanding a similar effort.

Conservation programs targeting fauna and flora other than bobwhites sometimes have substantial overlap with bobwhite needs. State coordinators reported numerous examples including programs for lesser prairie-chickens, pollinators, gopher tortoises, ring-necked pheasants, woodcock, and various songbirds.

Statewide bobwhite restoration plan updates and evaluation were reported in Arkansas, Georgia, Kentucky and Missouri. Evaluation is a priority of many state quail plans. Measurement of bobwhite abundance under the NBCI Coordinated Implementation Program occurred in Arkansas, Iowa, Kentucky, Missouri, Nebraska, New Jersey, Oklahoma, Texas and Virginia. Partners working with the wildlife agencies include Oaks and Prairies Joint Venture in Oklahoma and Texas, Oklahoma State University in Oklahoma, Quail Forever in Missouri,



and Pheasants Forever in Nebraska. Other evaluation of bobwhite abundance to determine management effectiveness was reported for Alabama, Florida, Georgia, Iowa, Kansas, Kentucky, Maryland, Mississippi, Missouri, New Jersey, North Carolina, Ohio, South Carolina, Texas and Virginia.

Research on bobwhites by state agencies, universities and conservation partners covered the following subjects: aflatoxicosis in wildlife feed, quail behavior, quail disease, quail genetics, quail parasites, quail population ecology, quail translocation, wild strain parent-reared quail stocking, USDA Conservation Reserve Program, fire, grasslands, micro-climate, patch-burn grazing, predator management, supplemental feeding, and agricultural toxins. Research locations included Florida, Georgia, Indiana, Illinois, Kansas, Kentucky, Mississippi, Missouri, North Carolina, Ohio, Oklahoma, Pennsylvania and Texas. Research partners included Caesar Kleberg Wildlife Research Institute, Center for Native Grasslands Management (Tennessee), Kansas State University, Mississippi State University, Nebraska Cooperative Fish & Wildlife Research Unit—University of Nebraska, North Carolina State University, North Texas Quail Corridor Initiative (University of North Texas), Quail-Tech Alliance Program (Texas Tech University), Rolling Plains Quail Research Ranch, Southern Illinois University, Tall Timbers Research Station and Land Conservancy, Texas A&M University, The Ohio State University, The Pennsylvania State University, University of Delaware, University of Georgia, University of Illinois and University of Tennessee Institute of Agriculture.

NBCI state agencies reported many partnerships beyond the research institutes referenced above. Game bird organization partners included National Wild Turkey Federation, Quail Coalition (Texas), Quail Forever/ Pheasants Forever, Park Cities Quail, and Quail and Upland Wildlife Federation.

Other important partners in bobwhite conservation efforts included Alabama State Parks, American Bird

Conservancy, America's Longleaf Restoration Initiative, Foundation for Mississippi Wildlife, Iowa Upland Game Advisory Group, Georgia—Jones Ecological Research Center at Ichuaway, Mississippi Partners for Fish and Wildlife, Nebraska Environmental Trust Foundation, New Jersey Audubon, New Jersey Outdoor Alliance, New Jersey—Partners for Fish & Wildlife, New Jersey—Pine Creek Forestry, New Jersey—Pine Island Cranberry Company, New Jersey—South Jersey Quail Project, Kentucky—Shaker Village, Pennsylvania Department of Military Affairs—Fort Indiantown Gap, Shortleaf Pine Initiative, and The Nature Conservancy.

Federal partners included Arkansas—Pea Ridge National Military Park, Joint Ventures (e.g., Central Hardwoods, East Gulf Coastal Plain and Oaks and Prairies), Kentucky Bluegrass Army Depot, United States Fish and Wildlife Service (USFWS), USFWS Landscape Conservation Cooperatives, USFWS Partners for Fish and Wildlife Program, USFWS Wildlife and Sport Fish Restoration Program (State Wildlife Grants and Pittman-Robertson programs), US Department of Agriculture (USDA), and USDA Natural Resources Conservation Service. Bobwhites are a priority within the USFWS Landscape Conservation Cooperatives (LCC), specifically for the Gulf Coast Prairie LCC, the Gulf Coastal Plains & Ozarks LCC, and the South Atlantic LCC. Several NBCI state quail coordinators and staff collaborate with LCCs and Joint Ventures.

Key education and outreach programs were reported by state agencies including the following: Florida/ Georgia Quail Coalition, Kentucky Bobwhite Battalion on Facebook, Kentucky Bobwhite Camp-o-ree Boy Scouts of America, Missouri Covey Headquarters Newsletter, Missouri MOre Quail blog, New Jersey Quail in the Classroom program, North Carolina Upland Gazette, Virginia Answering the Call video and Virginia Bobwhite Bulletin on Facebook.



Missouri Department of Conservation



Alabama — Alabama Department of Conservation & Natural Resources

Population: Alabama quail populations have continued to decline except on private plantations and private lands with the resources to manage intensively for wild quail. Quail have rebounded on some wildlife management areas (WMAs) and have a huntable population where habitat manipulation was possible in longleaf and shortleaf reforestation projects.

Hunting: From Alabama Division of Wildlife and Freshwater Fisheries (AWFF) 2013–14 hunter survey results, Alabama had an estimated 12,800 quail hunters who harvested about 615,518 wild and pen-raised quail. Only 5% of this harvest was wild birds. For hunting on WMAs there was a total of 1,049 man-days of quail hunting with 602 wild quail harvested in 2013–14.

Management: AWFF continues to manage for quail with the following programs:

- Select north Alabama WMAs with farming leases were managed for small game by leaving larger buffer field edges and standing crops in the field. Continued longleaf pine restoration on approximately 5,000 acres on Barbour WMA (feature story in NBCI SOTB 2013) and Fred T. Stimpson Sanctuary, along with prescribed burning program to restore grasslands. Shortleaf pine restoration continued on 1,850 acres on AWFF and Forever Wild lands on Lauderdale and Freedom Hills WMAs.
- The AWFF Landowner Incentive Program Longleaf Pine Ecosystem Restoration Initiative continued with funds received from the United States Fish and Wildlife Service. During the past year, 1,000 acres were restored and a prescribed burning program will be implemented on these projects for the next 30 years.
- A monitoring program continues at Barbour WMA and Fred T. Stimpson Sanctuary to look at effects of longleaf restoration on quail and songbird populations. Monitoring also continues on Freedom Hills WMA shortleaf restoration and James D. Martin and Mud Creek WMA's native warm-season grass areas. Both breeding bird surveys and fall covey counts are conducted annually on these properties to assess bird populations.
- Alabama State Parks, in partnership with AWFF, is working with both Quail Forever and National Wild Turkey Federation on habitat projects at Wind Creek State Park consisting of longleaf pine restoration and enhancement of existing longleaf.
- Reported 78,000 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2).

NBCI State Quail Coordinator: Mark Sasser, mark.sasser@dcnr.alabama.gov

Arkansas — Arkansas Game & Fish Commission

Population: Arkansas's quail population has declined about 70% over the past 30 years.

Hunting: About 4% of resident license holders hunt quail.

Management: Arkansas Game and Fish Commission (AFGC) recently revised the Strategic Quail Management Plan to reflect NBCI CIP and other contemporary strategies. Quail management highlights include:

- Implementing the first official NBCI Focal Area through a partnership with the Pea Ridge National Military Park.
- Management of about 6,200 acres of USDA CP33 Habitat Buffers for Upland Birds and 5,411 quail-friendly acres of grass in USDA CP38 State Acres for Wildlife Enhancement.
- Reported 21,998 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2).
- A continued effort to increase native warm-season grass on pastures through AGFC Acres for Wildlife Program.
- Outreach seminars and workshops to the general public as well as agency professionals.
- Partnered with other conservation organizations to establish more grassland habitats on several Wildlife Management Areas and an educational facility.

NBCI State Quail Coordinator: Clifton Jackson, cjackson@agfc.ar.gov

Delaware — Delaware Division of Fish & Wildlife

Population: 2013 Delaware/USGS North American Breeding Bird Survey bobwhite abundance index was 1.3 bobwhite per route. Bobwhite have declined an average of 9.61% per year during the long-term period 1966–2013. This decline is even more pronounced when examining the most recent short-term, 10-year period (2004–13), during which bobwhite declined an average of 15.56% per year.

Hunting: Delaware's 2013–14 estimated harvest was 3,784 quail. Total estimated number of hunters was 334. Of note, for the first time, estimated take of released pen-raised quail comprised 100% of the estimated total harvest. Hunters are asked to self-report whether or not they are harvesting wild or released birds on an annual harvest survey.

Management: Delaware Division of Fish and Wildlife (DFW) continues to operate as a partner with the NBCI. In addition, we are continuing a comprehensive planning effort to identify quail focus areas, where management



and research efforts would be directed. Several important bobwhite management activities occurred in the last year:

- DFW biologists completed intensive biological surveys in June and July to document the presence and distribution of bobwhite within potential focus areas and adjacent control areas.
- Cedar Swamp Wildlife Area in New Castle County will likely serve as the first focus/demonstration area for bobwhite. A persistent population remains in this area. Nearly 1,500 acres of this 5,500-acre area are suitable quail habitat. Management activities in recent years have been focused on hedgerow establishment, field buffers, and invasive species removal.
- DFW biologists will spend the next year defining a control area, planning where to create/restore quail habitat and generating monitoring points using the guidance provided in the NBCI Coordinated Implementation Program
- In 2014, DFW enhanced and restored 900 acres of quail habitat on State Wildlife Areas, including 650 acres of pine thinning in Sussex County.
- Reported 1,396 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2), including selective thinning, wild flower and warm-season grass establishment, prescribed burning, heavy discing, edge feathering, and invasive species control.

NBCI State Quail Coordinator: Matt DiBona, matthew.dibona@state.de.us

Florida — Florida Fish & Wildlife Conservation Commission

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

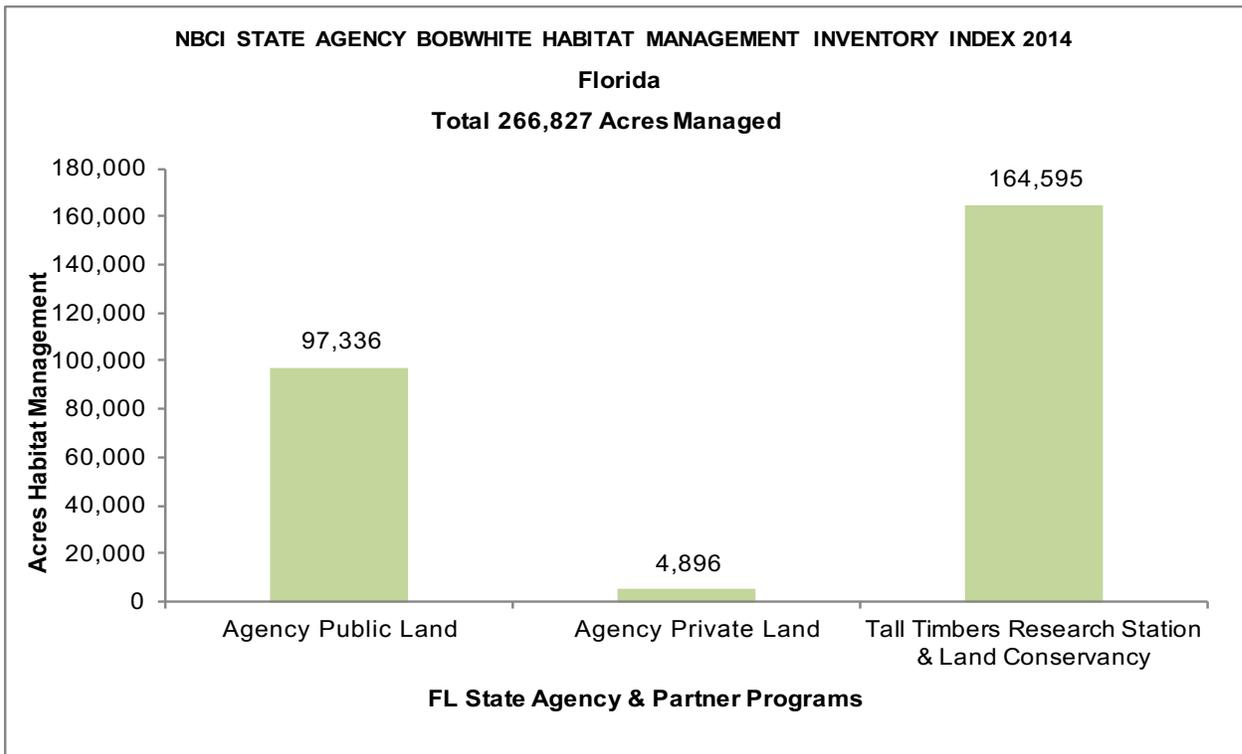
Hunting: Hunter and harvest estimates are based on results from a 2012–13 telephone survey that indicated 10,863 hunters harvested roughly 186,588 bobwhites. For comparison, annual bobwhite harvest was 2.7 million birds in 1970.

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 the following:

- 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 (Florida Fish and Wildlife Commission [FWC], Florida Forest Service, Florida Department of Environmental Protection, and U.S. Forest Service) and Tall Timbers Research Station and Land Conservancy (TTRS). The primary objective of UERP 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 175,000 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 218,008 acres of total area of quail habitat on private land, as reported in NBCI State of the Bobwhite Report 2014.
- Reported 266,827 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1, 2, 4).
- Completed over 240 fall covey call counts on public land bobwhite focal areas. In addition, completed species and habitat monitoring for other fire-dependent grassland species on UERP focal areas.
- Formalized the Florida/Georgia Quail Coalition in 2014—a cooperative partnership between FWC, Georgia Department of Natural Resources—Wildlife Resources Division, Quail Forever (QF) and TTRS to enhance, promote and conserve quality habitat for northern bobwhite and to promote and support youth shooting sports programs and education. To date, four QF Chapters have been started to support land management activities on Florida's bobwhite focal landscapes.
- In the final year of a four-year cooperative research project between FWC, TTRS, Mississippi State University and University of Georgia on the FWC Babcock-Webb Wildlife Management Area. The primary goal is to examine the effects of scale of fire on breeding season survival, reproduction, movements and post-burn survival.

NBCI State Quail Coordinator: Greg Hagan, greg.hagan@myfwc.com





Georgia – Georgia Department of Natural Resources

Population: Georgia Department of Natural Resources (GADNR) statewide bobwhite population index has declined by more than 85% since 1966.

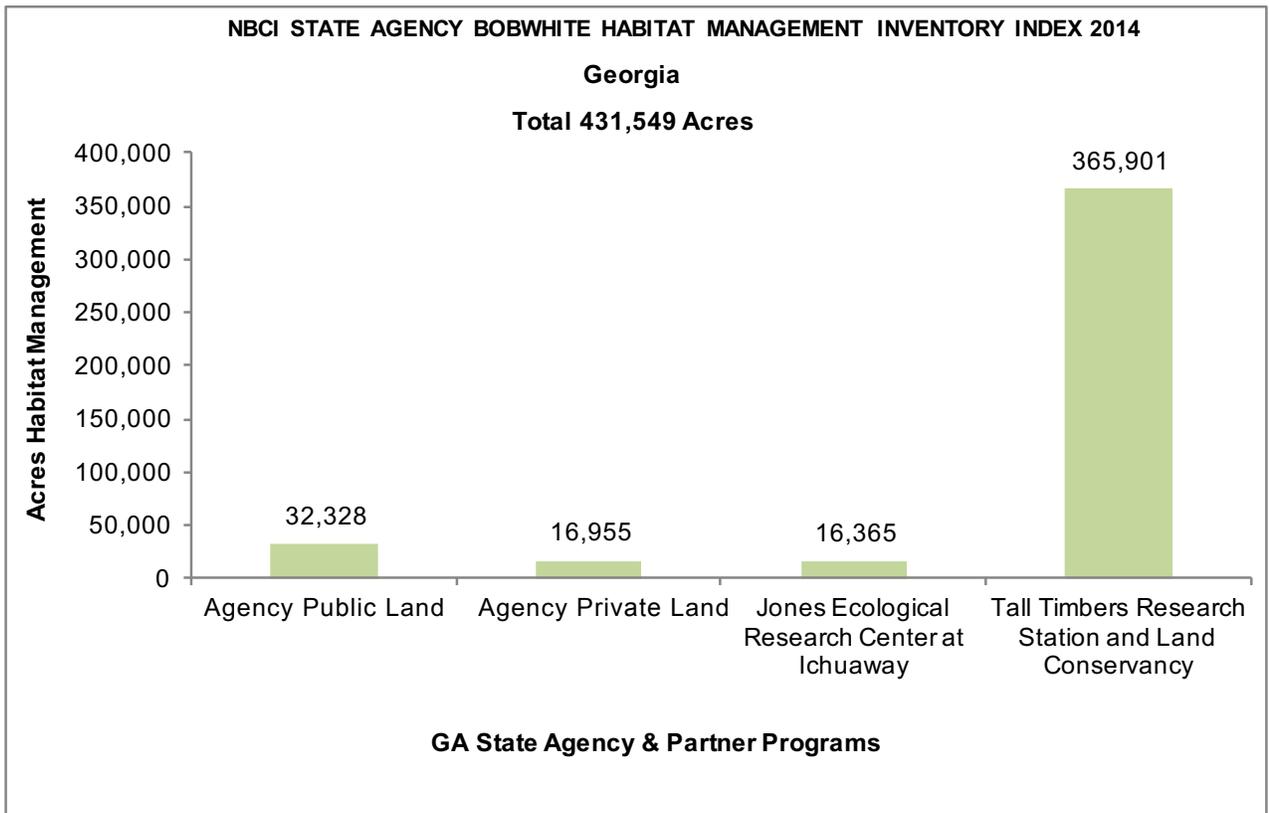
Hunting: From 2009 to 2013, estimated bobwhite hunter numbers declined by 25% (16,226 hunters for 2012–13 season; $\pm 1,011$) and estimated bobwhite harvest declined by 55% (430,691 harvest for 2012–13 season; $\pm 12,287$). The proportion of pen-reared quail in the harvest declined by 45% (344,752 harvest for 2012–13 season; $\pm 19,111$), however, the wild bobwhite harvest increased 310% (85,940 harvest for 2012–13 season; $\pm 14,972$).

Management: GADNR Wildlife Resources Division (WRD) bobwhite restoration efforts have transitioned from the initial phase of the Bobwhite Quail Initiative (BQI) to the NBCI 2.0 step-down plan via Georgia's BQI: 2013–2023 (released in November 2014). Other quail management highlights:

- In 2014, BQI biologists provided technical guidance to landowners on almost 17,000 acres for habitat management on working farms and forests in Georgia's Upper Coastal Plain.
- Reported 431,549 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1, 2, 4).
- USDA Farm Bill programs providing grass, forb and shrub habitats include 168,443 acres in Conservation Reserve Program Longleaf, 2,221 acres in CP33 Habitat Buffers for Upland Birds, 11,500 acres contracted in CP38 State Acres for Wildlife Enhancement Pine Savanna Restoration, and for the USDA Gopher Tortoise Working Lands for Wildlife Initiative, completed 4,665 acres of longleaf planting and 5,304 acres of prescribed burning at a cost of just over \$1 million (Fiscal year 2014).
- Through the WRD permitting process, Tall Timbers Research Station and Land Conservancy (TTRS) conducted the final of a three year translocation project to expedite restoration of wild quail into an approximate 8,000-acre area of renovated habitat.
- Georgia is focusing intensive quail management efforts on five wildlife management areas (WMAs), totaling about 20,000 acres that serve as core habitats in the BQI.
- Monitoring efforts include fall covey counts on seven WMAs and two private focal areas plus spring monitoring for several pine savanna species on five WMAs.
- The DiLane WMA bobwhite population reached an all-time high of 1 bird/1.5 acres resulting in excellent hunt quality.
- The Florida/Georgia Quail Coalition was publicly announced in April 2014. This is a partnership with Quail Forever, WRD, Florida Fish and Wildlife Conservation Commission and TTRS, directed at supporting bobwhite management on public lands. To date \$22,500 has been donated for bobwhite management on Georgia WMA BQI Focal Areas.

NBCI State Quail Coordinator: Reggie Thackston, reggie.thackston@dnr.state.ga.us; (Dallas Ingram, WRD Biologist, assisted in preparation of this report)





Illinois – Illinois Department of Natural Resources

Population: Illinois Department of Natural Resources (IDNR) roadside counts for bobwhite are very similar to the USGS North American Breeding Bird Survey protocol. In 2014, as reported in the Annual Status Report—Quail (2014), observers across Illinois recorded an average of 0.55 quail per stop and quail were recorded at 27.0% of the stops.

Hunting: Harvest estimates are based upon results from the 2013–14 Illinois Hunter Harvest Survey. As reported in the Annual Status Report—Quail (2014), an estimated 10,779 hunters (4% decrease from 2012–13 season) harvested 51,628 wild quail (9% increase from 2012–13 season). Quail hunters averaged 0.72 quail per trip.

Management: IDNR continues to operate under a statewide Wildlife Action Plan where quail are considered a species in greatest need of conservation and as a partner with NBCI. Quail management highlights include the following:

- The USDA Conservation Reserve Program (CRP) is by far the greatest source of potential wildlife habitat in Illinois. In June of 2015, Illinois has 893,403 acres of CRP, a 32,077 acre reduction from last year. For specific practices in June of 2015, 65,974 acres were enrolled under CP33 Habitat Buffers for Upland Birds (CP33), 19,882 acres were enrolled under USDA CP38 State Acres for Wildlife Enhancement (SAFE) (which is the entire allocation for Illinois) and 12,400 acres (an increase of 10,000 acres) were enrolled under USDA CP42 Pollinator Habitat.
- Reported 13,170 acres of management for the NBCI Habitat Management Inventory (Figure 1).
- Dr. Clayton Nielsen and Justin Shew, Southern Illinois University, completed the final year of research on Effects of CRP Mid-contract Management in Northwestern Illinois and CP33 in Southern Illinois.
- Dr. Clay Nielsen and Dr. Eric Schaubert are starting a project to assess both habitat and population dynamics (including harvest) and their effects on bobwhite populations in Illinois.
- Dr. Mike Ward and colleagues, University of Illinois, continued research investigating grassland wildlife response to the SAFE Program, cover crops and agricultural practices.

NBCI State Quail Coordinator: Stan McTaggart, stan.mctaggart@illinois.gov



Indiana — Indiana Division of Fish & Wildlife

Population: Results of the Indiana Division of Fish and Wildlife (IDFW) 2014 statewide bobwhite whistle count index indicate a significant 37.7% decline from 2013, falling from 0.68 to 0.45 birds/stop. Though all three of Indiana's bird conservation regions (BCR) experienced significant declines, the Central Hardwoods BCR in southern Indiana remained the highest with 0.79 bird/stop. A severe winter had a negative effect on the bobwhite population in 2014, but milder weather in 2015 should result in a population increase.

Hunting: The 2014–15 Small Game Harvest Survey, comprised of 15,400 small game harvest questionnaires, will be reported online this summer. Data from the 2012–13 Small Game Harvest Survey, showed an estimated 10,412 bobwhite hunters (–31.0% versus 2010–11) harvested 19,992 bobwhites (+0.6% versus 2010–11).

Management: Within IDFW, the Private Lands Unit, Public Lands Unit, and Wildlife Science Unit are working to improve quail habitat and management. Highlights for Indiana quail include the following:

- The Private Lands Unit continued working with landowners via the Habitat Incentive Program to create habitat in 11 Quail Habitat Priority Areas, adding 1,801 acres of habitat.
- The Private Lands Unit added 13 acres of USDA CP33 Habitat Buffers for Upland Birds for a total enrollment of 13,943 acres and added 74 acres of bobwhite-specific USDA CP38 State Acres for Wildlife Enhancement (SAFE) for a total enrollment of 8,605 acres. The unit added 694 acres of potentially quail-friendly habitat through the ring-necked pheasant, Henslow's sparrow, grasshopper sparrow, and American woodcock-specific CP38 for a total enrollment of 13,702 acres.
- The Public Lands Unit added 1,062 acres of new quail habitat (converted forest and fescue) and improved another 3,821 acres on 19 fish and wildlife properties.
- Reported 14,729 acres of quail management for the NBCI Habitat Management Inventory (Figures 1–3).
- The Wildlife Science Unit continues monitoring population trends and harvest, and researching the impacts of disturbance on bobwhite productivity and dispersal and habitat use at Glendale Fish and Wildlife Area. The Wildlife Science Unit continues to evaluate its current population monitoring, with the option of moving toward NBCI coordinated population monitoring.
- Bobwhite hunting season dates in Indiana are divided by Interstate 74—north dates are November 1, 2014–December 15, 2014, with a bag limit of 4; south dates are November 1, 2014–January 10, 2015, with a bag limit of 8.

NBCI State Quail Coordinator: Budd Veverka, bveverka@dnr.in.gov

Iowa — Iowa Department of Natural Resources

Population: Iowa Department of Natural Resources (IDNR) 2014 statewide bobwhite August roadside index of 0.92 quail per 30-mile route was up significantly from the 2013 index. The last time Iowa's statewide quail count was this high was 2004. This is 61% above and 33% below the 10-year and long-term (52-year) averages, respectively.

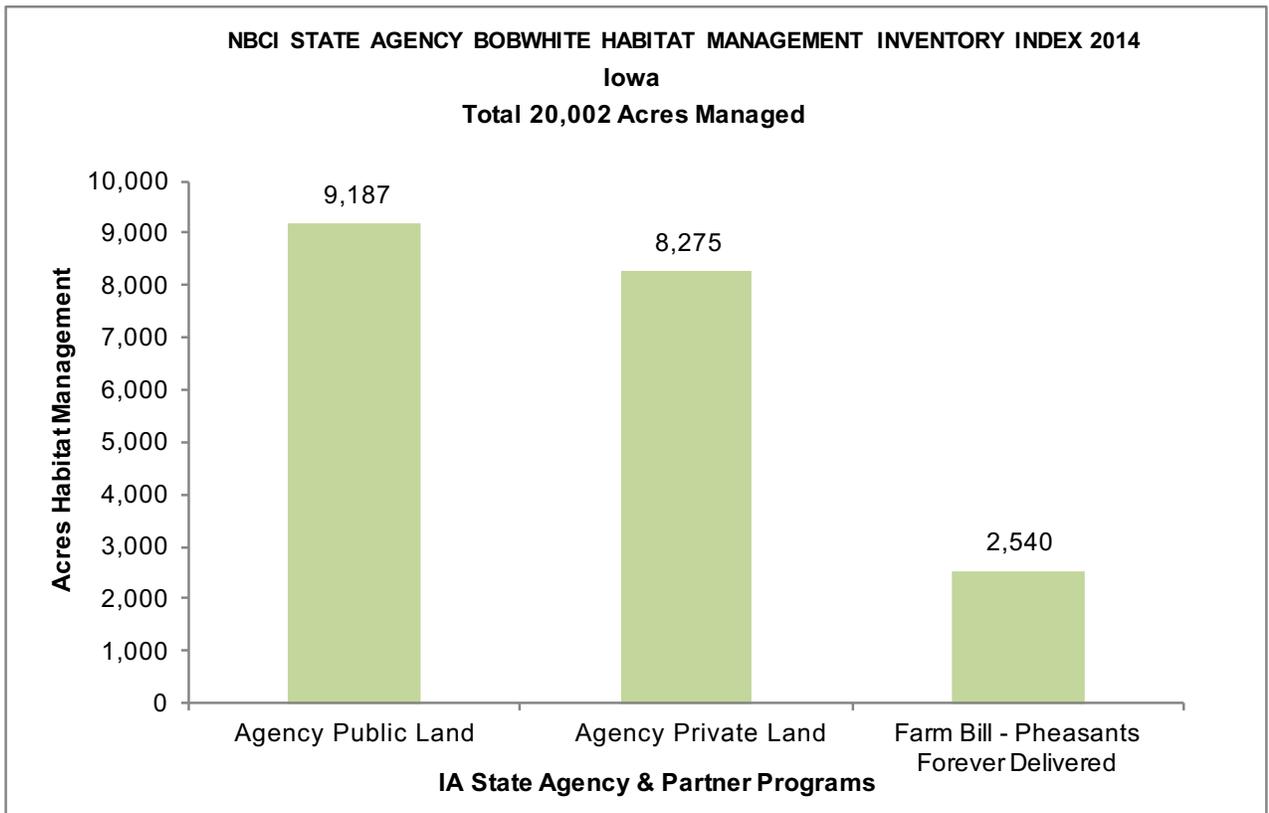
Hunting: Hunter numbers and harvest both declined during the 2013–14 hunting season compared to 2012–13 season. An estimated 6,485 hunters harvested 8,708 quail during the 2013–14 season. Harvest/hunter information is not available for 2014–15 hunting season, but harvest is expected to improve to 15,000+.

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

- Iowa continues participation in the NBCI Coordinated Implementation Program with two identified focal areas with a third pending.
- To address concerns about low pheasant and quail populations the IDNR and state Pheasant/Quail Forever chapters have joined forces to enhance habitat on identified wildlife properties. The Adopt-a-Wildlife Area Program has identified 39 priority sites and 10 sites have quail as a priority focus.
- Iowa has a 46,500-acre allocation of USDA CP33 Habitat Buffers for Upland Birds (CP33), of which 25,904 acres have been enrolled.
- Reported 20,002 acres of management for the NBCI Habitat Management Inventory (chart below; Figures 1–3).
- The Iowa Upland Game Bird Advisory Group recommended that restoration activities for bobwhite should focus on habitat restoration and better landowner marketing.
- Iowa received a \$3,000,000 USDA Voluntary Public Access grant to expand the Iowa Habitat and Access Program (IHAP). This program is creating quail habitat on private CRP across southern Iowa and it will be open for public hunting. The grant should expand the program from 8,000 to 20,000 acres.

NBCI State Quail Coordinator: Todd Bogenschutz, todd.bogenschutz@dnr.iowa.gov





Kansas – Kansas Department of Wildlife, Parks and Tourism

Population: 2014 statewide bobwhite breeding abundance index was 38% above 2013 index and 9%, and 3% above previous 5-, and 10-year averages, respectively.

Hunting: During the 2013–14 hunting season, 38,351 quail hunters harvested 174,940 bobwhites.

Management: Kansas Department of Wildlife, Parks, and Tourism (KDWPT) continues to manage bobwhite throughout the state by partnering with multiple agencies, non-government organizations and private citizens, as well as the NBCI. Quail management highlights include the following:

- In 2012 KDWPT designated two focus areas in eastern Kansas for bobwhite quail restoration, and is teaming with NBCI on these projects. To date habitat improvements have been completed or obligated on 1,963 acres of private land and 4,878 acres of public land within these areas.
- Bobwhites are a species of conservation importance for both State Wildlife Grant and USDA program funding ranking process.
- KDWPT continues to evaluate CP33 Habitat Buffers for Upland Birds throughout the state working with Kansas State University researchers.
- Reported 296,497 acres of quail management for the NBCI Habitat Management Inventory (Figures 1–3).
- A Hunting Access and Conservation Habitat (HACH) program was used to create incentives for long-term lease agreements on quality properties through the existing Walk-In Hunting Access program. The program enrolled properties newly enrolling in or performing wildlife enhancements to Conservation Reserve Program (CRP) and Continuous CRP. Access was added to 68,620 acres on 275 properties where access contracts are for the life of the CRP contract.

NBCI State Quail Coordinator: Jeff Prendergast, Jeffrey.prendergast@ksoutdoors.com

Kentucky – Kentucky Department of Fish & Wildlife Resources

Population: According to the Kentucky Department of Fish and Wildlife Resources (KDFWR) statewide mail carrier survey, the bobwhite population has declined by more than 77% since 1968. The 2014 index is 58.8% below our 1981 restoration target. A 15% decrease in quail was observed between 2013 and 2014.

Hunting: Hunting trips per hunter cooperator has increased 31% over the 5-year average. Hunter harvest has increased by 5.6% over the same period.

Management: KDFWR continues to operate under a statewide Quail Plan and as a partner with the NBCI. Quail management highlights include the following:

- KDFWR released its 5-Year Benchmark Report which features bobwhite population increases across all six focal areas. The report was promoted at three public meetings.



- Habitat and bird data were collected in the 6,000-acre Livingston County National Quail Focus Area, Kentucky's first NBCI Coordinated Implementation Program focal area in a privately held landscape.
- Reported 16,494 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2, 4).
- Researching effect of patch-burn grazing on bird abundance at the Bluegrass Army Depot in Central Kentucky In partnership with the University of Tennessee.
- KDFWR hosted the first-ever Peabody Wildlife Management Area (WMA) Bobwhite Camp-o-ree with the Boy Scouts of America. More than 80 specialized brush piles were created by more than 100 boy scouts and volunteers. The event generated \$10,000 in donations from conservation partners.
- Hosted the second Peabody WMA Quail Consortium, where researchers and managers met to discuss research findings and develop recommendations for future management.
- The Kentucky Bobwhite Battalion Facebook community increased to more than 2,900 members.
- The Clay WMA Focal Area recently completed Kentucky's first ever commercial timber harvest designed to benefit upland game birds.

NBCI State Quail Coordinators: John Morgan, john.morgan@ky.gov, and Ben Robinson, ben.robinson@ky.gov

Louisiana – Louisiana Department of Wildlife & Fisheries

Population: The Louisiana Department of Wildlife and Fisheries (LDWF) annual 2014 Bobwhite Whistle Survey combined results were not significantly different from 2013. Quail whistles heard were lower and continue to be near the lowest numbers since the survey began in 1983.

Hunting: The Big and Small Game Harvest Survey for 2013–14 estimated that 1,100 persons hunted wild quail and bagged an estimated 1,200 quail.

Management: LDWF continues to work with private, corporate, and government landowners to improve quail habitat. Within the LDWF East Gulf Coastal Plain Prescribed Burn Initiative, 3,137 acres were burned and 1,659 within the West Gulf Coastal Plain was burned. Through USDA Natural Resource Conservation Service (NRCS) programs in 2014, an additional 2,026 acres were planted in longleaf pine and 5,262 acres burned.

- Worked with the NRCS, National Wild Turkey Federation, and other agencies to hold longleaf pine workshops for private landowners and land managers.
- Continued work on a quail emphasis area on the Vernon Unit of the US Forest Service Kisatchie National Forest.
- Continued quail habitat improvements at Sandy Hollow Wildlife Management Area (WMA).
- Additional prescribed burning was contracted on Clear Creek, West Bay, and Bodcau WMAs.
- Reported 15,084 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2).

NBCI State Quail Coordinator: Jimmy Stafford, jstafford@wlf.la.gov

Maryland – Maryland Department of Natural Resources

Population: The 2014 USGS North American Breeding Bird Survey estimates the Maryland statewide bobwhite population increased 25% since 2013 and is 3% higher than the five year average. However, the population index is still 45% below the 10 year average and 96% below the 45 year average. The population declined substantially during the severe winter of 2009–10. Some areas appear to have recovered fully since that time but others have not. The highest densities currently are found in the eastern region.

Hunting: The Maryland Department of Natural Resources (MD DNR) 2013–14 Annual Hunter Mail Survey estimated 430 bobwhite hunters spent 1,600 days afield and harvested 670 wild birds. The survey only requests data on wild quail hunts but some pen-raised, released quail hunts are likely reported. Hunting participation and harvest have declined more than 95% since the mid-1970s. Hunting of pen-raised quail remains popular but has not been quantified.

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

- Four MD DNR Wildlife Management Areas 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.
- Interest and enrollment in USDA Farm Bill programs has generally declined in Maryland in recent years. However, approximately 24,000 acres are still currently enrolled in quail-friendly practices under the Conservation Reserve Program and 740 acres in CP33 Habitat Buffers for Upland Birds.
- Reported 4,781 acres of management for the NBCI Habitat Management Inventory (Figures 1–3).
- Funding levels have precluded the full implementation of any NBCI-designated habitat focal areas. However, MD DNR staff has increased technical assistance, outreach, and monitoring efforts on public and private lands in two portions of the state where significant potential for population restoration exists.



- Translocation of wild bobwhite from within and outside of Maryland to several sites was conducted in early spring 2014.
- Numerous information packets were distributed and several habitat seminars were conducted.

NBCI State Quail Coordinator: Bob Long, bob.long@maryland.gov

Mississippi – Mississippi Department of Wildlife, Fisheries, and Parks

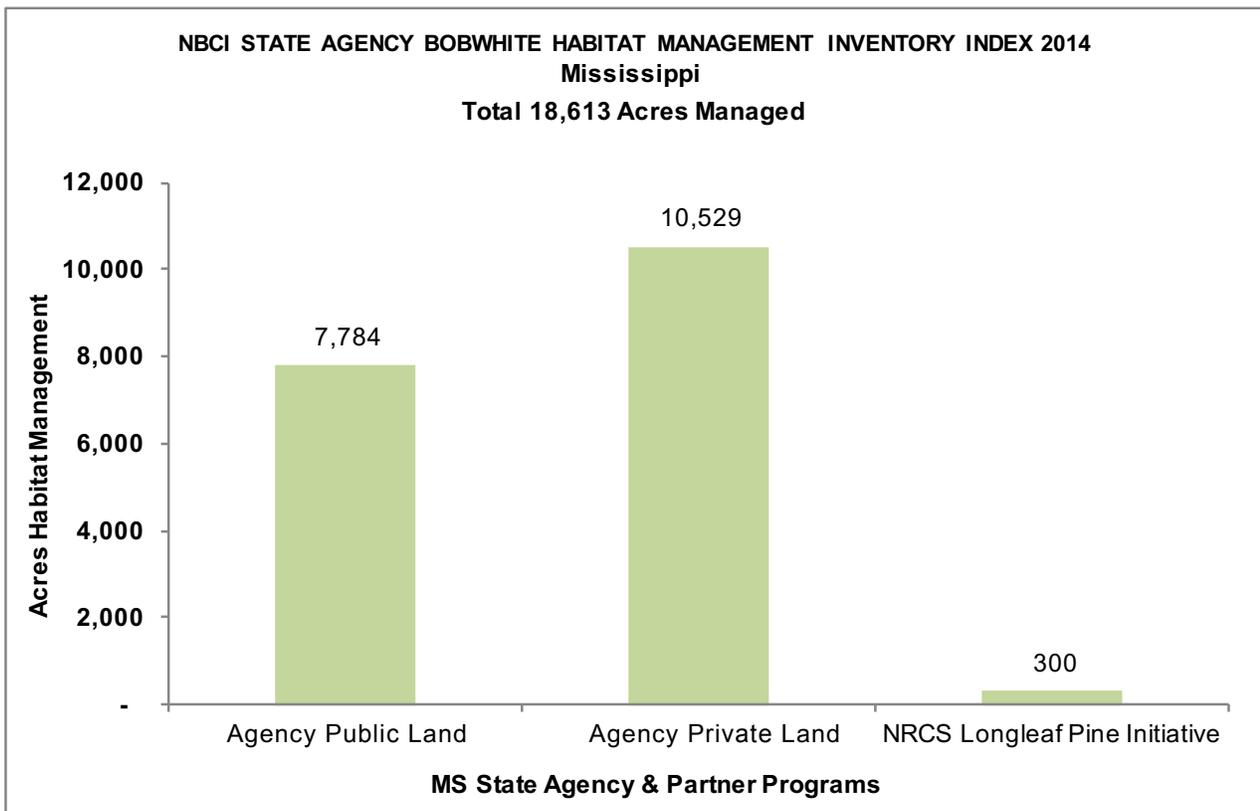
Population: Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) 2014 wildlife management area (WMA) bobwhite abundance index was 12% above 2013 index.

Hunting: 2013–14 hunting season statistics were below previous year, above previous five-year average, and above previous 10-year average.

Management: The MDWFP continues to operate under a statewide quail plan and as a partner with NBCI. Quail management highlights include the following:

- Continued promotion of Conservation Reserve Program CP38 quail and prairie, and CP33 Habitat Buffers for Upland Birds practices.
- Cooperated with conservation partners to implement quail-friendly habitat management via USFWS Mississippi Partners for Fish and Wildlife Program Uplands, Prairie, and Longleaf Committees, State Wildlife Grants, and Fire on the Forty Initiative.
- Provided early successional habitat management technical assistance to private landowners statewide.
- Conducted quail-friendly forest and field management (prescribed burning, disking, selective herbicide, and other practices) on 11 wildlife management areas.
- Reported 18,613 acres of management for the NBCI Habitat Management Inventory (chart below; Figures 1–3).
- Continued monitoring quail abundance on public lands and six quail focus areas.
- Continued education and outreach via public contacts, website, and two quail management and four prescribed fire workshops.

NBCI State Quail Coordinator: Rick Hamrick, rickh@mdwfp.state.ms.us



Missouri — Missouri Department of Conservation

Population: The Missouri Department of Conservation (MDC) 2014 state bobwhite abundance index of 1.95 quail per 30-mile route was 80.6% above the 2013 index of 1.08. This is 24% above the 5-year average (2010–2014 average = 1.57) and 16% below the 10-year average (2005–14 average = 2.32).

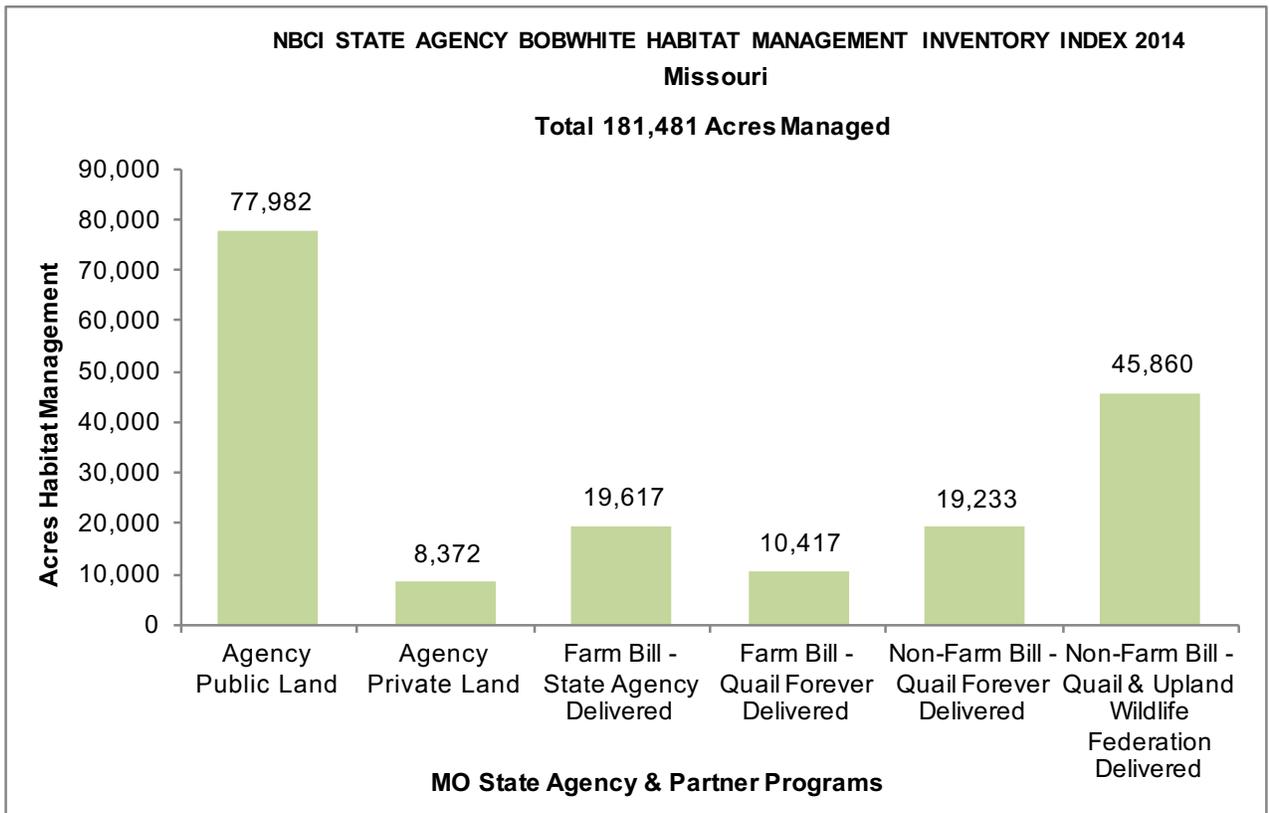
Hunting: Missouri quail harvest and quail hunting surveys are conducted every other year, so numbers from the 2014–15 season are not available. Based on anecdotal reports from hunters and conservation area managers, harvest during the 2014–15 season was up noticeably over the previous several years, but actual numbers are unknown.

Management: Quail management highlights in 2014 include the following:

- MDC's Quail and Small Game Task Force continued to elevate small game issues with working groups focused on habitat, populations, outreach, focus areas, partners, and program review and assessment.
- Under the state's quail recovery plan, MDC staff identified 26 private land Quail Focus Areas (QFA) and 21 public land Quail Emphasis Areas (QEA) in which to focus management efforts. These focus areas rank Medium or High using the Biologist's Ranking Information process of NBCI 2.0. QEAs receive additional considerations during the budgeting and planning process, and private land QFAs are eligible for enhanced cost-share habitat assistance.
- Continued monitoring quail abundance on 19 QEAs and two QFAs.
- MDC continues participation in the NBCI Coordinated Implementation Program with a focal area project in Carroll County.
- Reported 181,481 acres of management for the NBCI Habitat Management Inventory (chart below; Figures 1–4).
- Outreach efforts continued via a new Small Game Prospects resource, Covey Headquarters Newsletter, quail website, periodic MOre Quail blog, a habitat management calendar, news items and public events.
- MDC continues to leverage conservation dollars through cooperative partnerships with the National Wild Turkey Federation, Quail Forever, and the Quail and Upland Wildlife Federation. These partnerships have been used to increase private land cost-share funding pools, fund cooperative Farm Bill Biologist positions, and create and promote youth hunting opportunities.
- MDC staff continued a 5-year research study of reproductive success and population response to a traditional management model (crop strips, linear shrub rows, discrete patches of nesting cover, etc.) versus a grassland landscape management model (native grassland community managed with fire and grazing). Preliminary results suggest that bobwhites on extensive grassland landscapes managed with fire and grazing initiate earlier covey break-up, pairing, and nesting. In addition, nest success on these grassland landscapes appears to be considerably better than on areas under traditional management. Based on telemetry locations of adults with broods, bobwhites choose present-year grazing patches and 1-year post-grazing units for brood habitat. Units that have received neither burning nor grazing for >2 years show very little use by bobwhites.

NBCI State Quail Coordinator: Scott Sudkamp, scott.sudkamp@mdc.mo.gov





Nebraska — Nebraska Game & Parks Commission

Population: The Nebraska Game & Parks Commission (NGPC) statewide abundance index from the 2014 Bobwhite Whistle Count survey was higher compared to 2013, with increases in indices of relative abundance ranging from 6% in the Republican region to 70% in the Northeast region. Data from the 2014 July Rural Mail Carrier survey indicated statewide indices were higher than in 2013, but were down 32% compared to the 20-year mean. The population seems to be rebounding from the impacts of the extreme drought of 2012, and continued fair weather should foster this recovery.

Hunting: Data from the 2014–15 season is not yet available. During the 2013–14 bobwhite hunting season (26 October 2013–31 January 2014), 11,161 hunters harvested 33,420 bobwhites during 72,319 days afield. These figures were down compared to the 12,514 hunters (-11%) harvesting 36,519 bobwhites (-9%) during 83,418 days afield (-13%) the previous year.

Management: NGPC continues to participate in the NBCI and to implement early successional habitat management on public lands for the benefit of bobwhites and other upland game species. Nebraska implemented the NBCI Coordinated Implementation Program on the Meridian Quail Initiative Focus Area in Jefferson and Thayer counties (MQI). Pre-management spring whistle and fall covey count surveys were completed in the focus area and the reference area in 2014. Edge feathering and other habitat management activities were conducted on private land and public hunting areas within the focus area, using funds from a grant awarded by the Nebraska Environmental Trust. A summary of habitat improvements and research follows:

- As part of the Early Successional Habitat Initiative, 36,787 acres across the state were managed for the benefit of quail, and pheasants and other upland game.
- As part of the Focus on Pheasants program, 24,833 acres were managed for upland game, including bobwhite, and 1,936 acres were managed for upland game through the Habitat Share program.
- On private land, Farm Bill Biologists affected management activities beneficial to quail and pheasants on 28,162 acres.
- Reported 146,218 acres of quail management for the NBCI Habitat Management Inventory (Figures 1, 2).
- Doctoral student Mandy Lipinski will begin field work this fall on a Federal Aid in Wildlife Restoration project investigating micro-climatic impacts on bobwhite habitat use and population dynamics in south-central Nebraska. There is also a potential to bring on an MS student to address additional, related questions.
- NGPC staff received training in Kentucky on the NBCI CIP habitat assessment, and will begin habitat assessments within the MQI focus and reference areas.

NBCI State Quail Coordinator: Dr. Jeffrey J. Lusk, jeff.lusk@nebraska.gov



New Jersey — New Jersey Department of Environmental Protection, Division of Fish & Wildlife

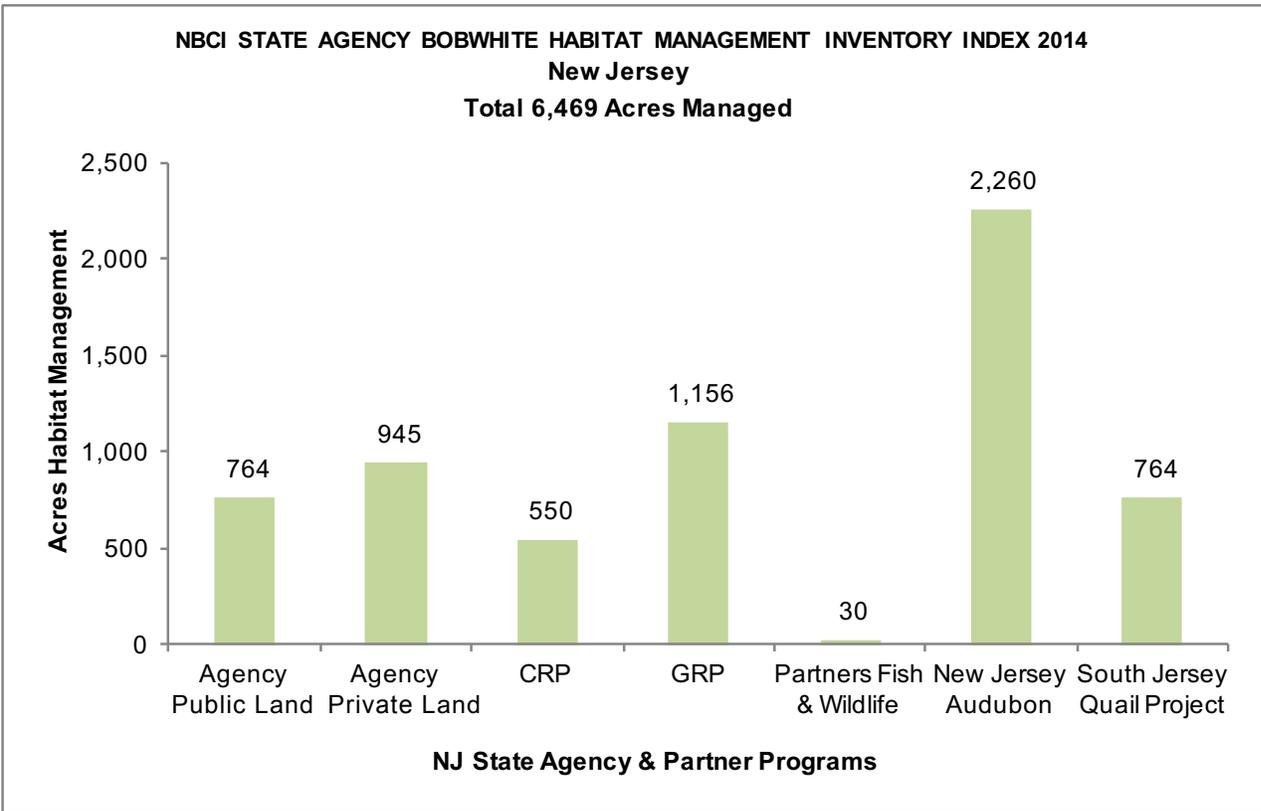
Population: Very low. Zero quail heard on 19 USGS North American Breeding Bird Survey routes in 2014. By comparison, the mean number of quail heard per route was 0.1 in 2013, 0.1/route during 2010–14, 0.1/route during 2005–14 and 6.2/route during 1966–2014.

Hunting: Wild quail hunting season closed since September 2011. Hunting pen-raised birds permitted at two New Jersey Division of Fish and Wildlife (NJDFW) wildlife management areas (WMAs) and on licensed shooting preserves. NJDFW hunting survey reveals continued quail hunting, mostly of released birds, but unpublished 2013–14 hunting season statistics (4,601 quail hunters harvested an estimated 65,992 bobwhites; pen-raised—91% of total harvest) indicates possibility of wild quail harvest. No survey conducted during 2014–15.

Management: NJDFW continues to operate under a statewide Quail Plan and partner with multiple agencies, non-government organizations (NGO) and private citizens. Quail management highlights include the following:

- Conservation partners NJ Audubon, Tall Timbers Research Station, US Fish & Wildlife Service, University of Delaware, NJDFW, Pine Island Cranberry Company and Pine Creek Forestry embarked on a multi-state research project involving wild quail obtained from Georgia and released in the Pinelands Region, where quail are classified as extirpated. Eighty quail were captured, leg-banded, fitted with radio transmitters and released on site in April 2015, a process to be repeated in 2016 and 2017. This effort will compliment NJDFW efforts focusing on habitat enhancement on public lands in southwestern counties.
- NJDFW staff visited nine interested landowners (2,712 acres owned) within the NBCI Focal Region and provided management plans. About 764 acres of management occurred via ongoing cooperation between the South Jersey Quail Project and NJDFW on quail habitat projects at two sand mining companies and a local sewage authority.
- Reported 6,469 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1–4).
- Quail in the Classroom initiated in cooperation with the NJ Outdoor Alliance and the NJ Quail Project is now in 5th year with about 25 participating school systems.

NBCI State Quail Coordinator: Andrew W Burnett, andrew.burnett@dep.state.nj.us



North Carolina – North Carolina Wildlife Resources Commission

Population: The North Carolina Wildlife Resources Commission (NCWRC) statewide spring bobwhite call survey was discontinued in 2013. Due to the continued loss of routes from suburban sprawl and declining quail habitat and abundance, the survey no longer fulfilled its original monitoring objectives at the statewide or regional level. Remaining route locations were no longer representative of the original landscape study design, and low counts no longer provided an adequate degree of precision to detect short-term trend changes. The USGS North American Breeding Bird Survey serves as the state's primary quail monitoring reference.

Hunting: Results from the 2013–14 hunting season indicate a continued decline of quail hunters, quail hunting days, and covey flush rates (Avid Hunter Survey).

Management: NCWRC continued the early successional habitat program, Cooperative Upland habitat Restoration and Enhancement (CURE), which focuses on multiple species and ecosystems. Quail management highlights include:

- Management of a four-county private lands focal area in southeastern North Carolina, which provides over 10,000 acres of suitable quail habitat. On public lands, four CURE game lands provide approximately 10,000 quail-friendly acres. Additionally, agency staff are involved with the management of 15,000 and 32,000 acres, respectively, of private and game lands suitable quail habitat across the state. Other initiatives include agency biologists working closely with USDA Natural Resource Conservation Service staff in all three of North Carolina's administrative regions.
- Reported 23,337 acres of management for the NBCI Habitat Management Inventory (Figures 1, 2).
- Continued outreach via The Upland Gazette, covering early successional species and habitats.

NBCI State Quail Coordinator: Christopher D. Kreh, chris.kreh@ncwildlife.org

Ohio – Ohio DNR Division of Wildlife

Population: Ohio Department of Natural Resources Division of Wildlife's (ODNR) 2014 statewide bobwhite abundance index declined 50% from 2013, with an average of 0.06 males per stop heard on 64 routes in southern Ohio, each with 12 survey stops. These values were 32% below the 5-year average. Long-term trend analysis indicates that Ohio's bobwhite population declines at a rate of 9% annually. Quail were detected on 4% of survey stops, representing a 24% decline in distribution.

Hunting: Analyses of 2011–12 hunter harvest surveys suggests that there are about 3,000 hunters pursuing bobwhites in Ohio, a 70% decline from 2010. Of those identifying themselves as quail hunters, 65% of hunters harvest no quail during the year, whereas about 5% of hunters report harvesting 10 or more quail each season. Ohio's quail season is 24 days long in November.

Management: ODNR quail management is included in grassland ecosystem management guided by a statewide Grassland Tactical Plan, revised in 2011. Quail management highlights for 2014 include the following:

- Partnered with Pheasants Forever/Quail Forever (PF/QF) to develop early successional habitat (edge feathering) on private lands in southwest Ohio.
- Partnered with PF/QF to contract invasive woody species removal from public wildlife areas at several locations in southern Ohio.
- Began development of Ohio's first quail focus area, to be part of the NBCI Coordinated Implementation Program—the Fallsville Quail Heritage Area in Highland County, Ohio. Initial efforts have included identifying boundaries of state quail landscapes, identifying boundaries for the focus area and reference area, surveying landowners to gauge interest and participation, and holding a dinner meeting with landowners to inform them about the focus area and quail habitat needs.

NBCI State Quail Coordinator: Nathan Stricker, Nathan.Stricker@dnr.state.oh.us

Oklahoma – Oklahoma Department of Wildlife Conservation

Population: Oklahoma's 2014 August quail roadside surveys still showed a 31% decline from the 24-year average.

However, the Quail Forecast for both August and October surveys combined yielded an increase in the population index of 66% from 2013 results. The severe drought of 2011 and 2012 likely hampered reproductive success. However, the summers of 2013 and 2014 showed promise for the population. We had a model year for rainfall and cooler temperatures and populations increased statewide, with a significant increase from our 2013 results in the north-central and southeast (94% increase), northwest (71%), northeast (57%) and southwest (50%) regions. The only region of the state that showed a decrease was the south-central, at 50%. Good reports of birds and weather are occurring this summer (2015).

Hunting: From 1986–2014, hunter numbers have declined by 81.7% (111,000 to 21,347), but are up 67% from 2013. The estimated number of quail harvested has also decreased by 89.9% (2,700,000 to 273,449), but we are up over double the harvest from last year (116,719 in 2013; 273,449 in 2014). These numbers are higher due to successful back to back reproductive seasons and more private landowners being aware and managing their

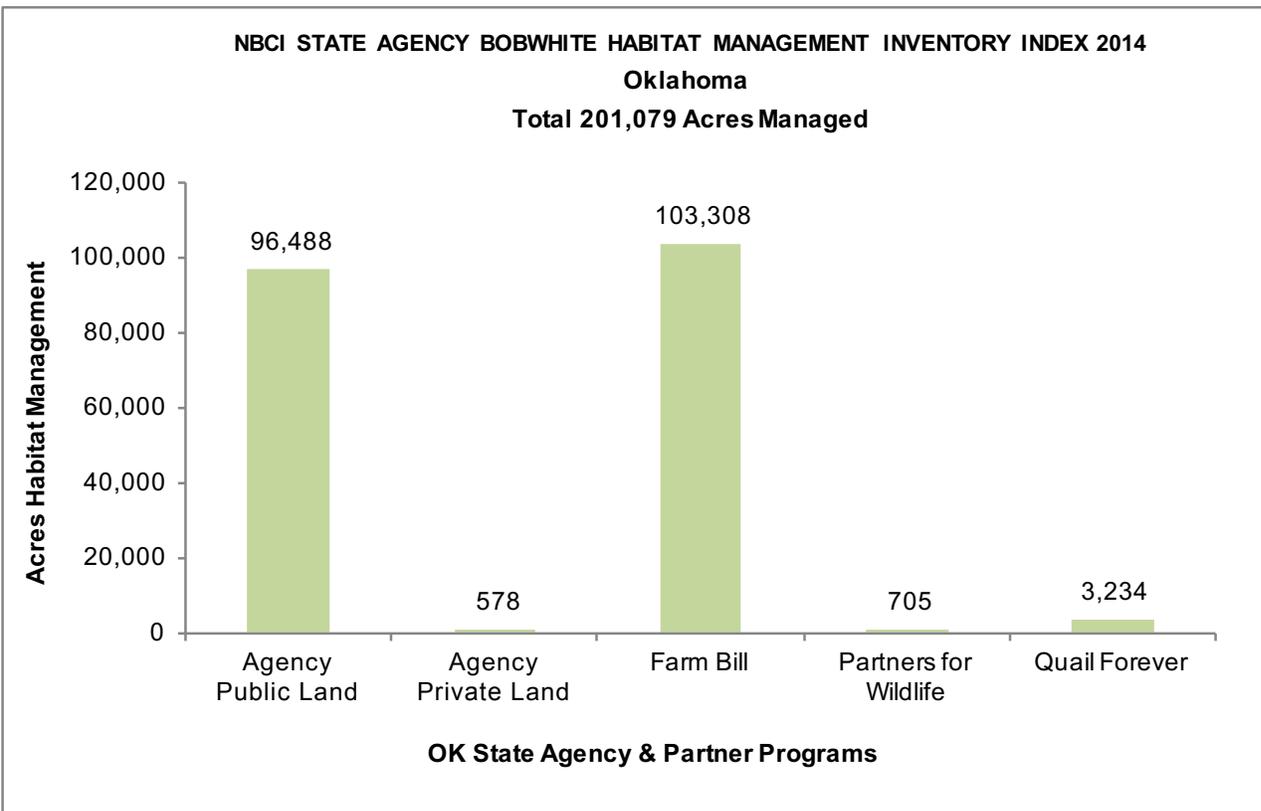


properties with prescribed burning, cattle grazing, pasture resting, eastern red cedar removal, less herbicide and less mowing and haying.

Management: Technical assistance is provided on thousands of acres each year to private landowners. Highlights:

- Oklahoma Department of Wildlife Conservation (ODWC) is a cooperator in the disease-based Operation Idiopathic Decline project. Biological samples were taken from quail trapped on 10 ODWC wildlife management areas (WMAs) and sent to Texas universities for analysis. The final sampling session was in October 2013. The 10 WMAs were analyzed by zones, southern and northern—26% and 42% of sampled birds had eyeworms, respectively. Across 2011–2013, percent of birds sampled with eyeworms was 50, 0 and 50, respectively. Across three years, WMAs percent of sampled birds with eyeworms was Black Kettle—40%, Beaver—17%, Packsaddle—0%, Sandy Sanders—50%, and Cooper—67%. WMA quail numbers have increased significantly during the past two seasons despite the occurrence of eyeworms. Rain, cooler temperatures, better reproduction and habitat have been the key to recent population increases.
- ODWC continued a series of research projects with Oklahoma State University (OSU) on two ODWC WMAs, including a 4th field season of studying quail population, habitat and arthropods, and a 3rd field season on predators and aflatoxicosis. Also, studying thermal modeling and quail/weather relationships.
- ODWC initiated the NBCI Coordinated Implementation Program monitoring in south-central to north-central Oklahoma. The ODWC, Oaks and Prairies Joint Venture and OSU are collaborating on monitoring in Love, Jefferson, Pontotoc, Johnston, Pawnee, Osage, Nowata, and Craig counties.
- Reported 201,079 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1–4).
- ODWC is revising the Oklahoma Quail Habitat Guide (published in the May/June 2013 issue of the agency’s magazine Outdoor Oklahoma) to be used as a technical assistance tool. Planning for a comprehensive plant and seed guide for hunters and landowners, online and book. Purpose is to promote plants and forbs for quail and upland bird use and how these plants are utilized seasonally.

NBCI State Quail Coordinators: Scott Cox, scott.cox@odwc.ok.gov, and Kyle Johnson, kyle.johnson@odwc.ok.gov



Pennsylvania – Pennsylvania Game Commission

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 USA (USGS North American Breeding Bird Survey data 1966–2012; BBS). Pennsylvania Game Commission (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: In 2013–14, hunting season was closed in 20 counties in south-central and southeast Pennsylvania. The remainder of the state was open with a daily bag limit of four and a possession limit of eight. 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. Based on PGC Game Take Survey, 2,280 quail hunters harvested 127 bobwhite. This does not include harvest on regulated shooting preserves. We believe the harvest is from pen-reared and released birds. Because of a small sample size, the confidence intervals for these mean estimates are very large.

Management: PGC completed a statewide quail plan and is a partner with NBCI. The plan does recommend identifying the best locations for restoration, the establishment of bobwhite focus areas, and wild bobwhite reintroduction efforts, if necessary, to re-establish populations of this once native game bird. The PGC Board of Commissioners announced in June 2015 plans to establish the first Pennsylvania Northern Bobwhite Quail Focus Area (BQFA) in cooperation with the Pennsylvania Department of Military Affairs (PDMA) at Fort Indiantown Gap. In addition, discussions are underway with other federal and state partners to establish BQFAs. Reintroduction efforts will require the support of other states in providing wild northern bobwhite for Pennsylvania reintroduction efforts.

NBCI State Quail Coordinator: Scott R. Klinger, scklinger@pa.gov

South Carolina – South Carolina Department of Natural Resources

Population: The South Carolina Department of Natural Resources (SCDNR) 2014 statewide bobwhite population abundance index was 30% above the 2013 index and 68% below the long-term average.

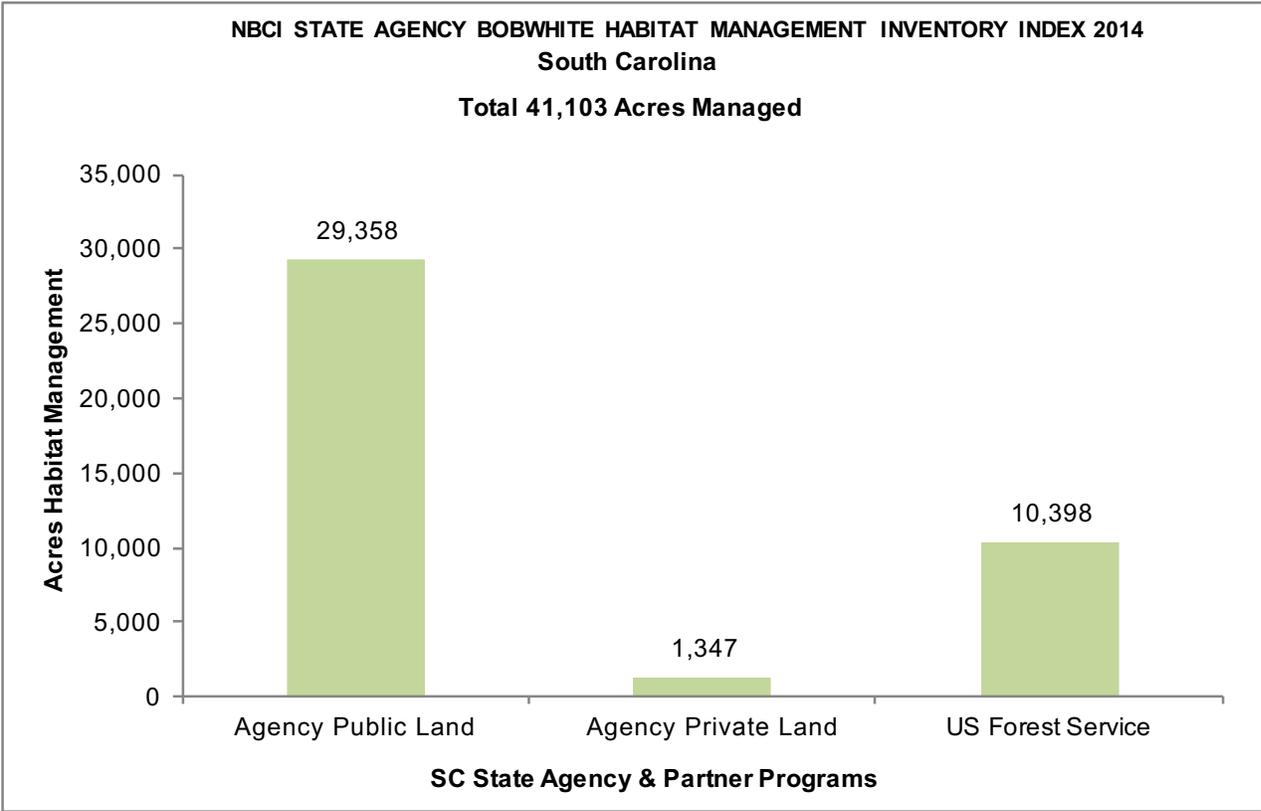
Hunting: Most recent information on statewide quail hunting (2005) indicated that about 6,500 quail hunters hunted 29,000 days and harvested 59,470 wild quail. Average hunter success in the annual Quail Hunter Survey, most recently published for 2014–15 hunting season, was 0.46 coveys per hour of hunting.

Management: SCDNR has recently released a statewide quail management plan utilizing the tools and data contained in the NBCI 2.0. Quail management highlights for 2014 include:

- Conducted a bobwhite summer brood survey for the 21st consecutive year.
- Conducted fall covey count on the Indian Creek Habitat Restoration Area.
- Since 2006, SCDNR has cooperated with the USDA Forest Service and multiple other partners in developing habitat on the Indian Creek Wildlife Habitat Restoration Area. Over 3,000 acres of USFS lands are in the process of being restored to pine savanna.
- Reported 41,103 acres of management for the NBCI Habitat Management Inventory (chart below; Figures 1,2 and 4). On agency lands, 23,339 acres were prescribed burned and 2,309 acres of timber were thinned.
- Maintained quail page on the SCDNR web site.

State Quail Coordinator: Michael Hook, hookm@dnr.sc.gov





Tennessee – Tennessee Wildlife Resources Agency

Population: Tennessee’s quail population continues to decline. We are starting population surveys on our anchor and focus areas.

Hunting: Tennessee Wildlife Resources Agency (TWRA) has no harvest estimate but is developing a survey for anchor areas.

Management: Last year a bobwhite restoration plan was completed and it has been implemented. There are four anchor wildlife management areas (WMAs) selected and these areas will be preparing detailed management plans and conducting population surveys. Private lands biologists are preparing plans for implementing bobwhite restoration on focus areas adjoining the anchor wildlife management areas. Anchor wildlife management area managers toured Kyker Bottoms WMA which is our initial demonstration site and have begun developing management programs following the Kyker Bottoms model. TWRA now has a full-time statewide public lands coordinator who is responsible for guiding planning of WMAs including those four selected as bobwhite anchors. Reported 20,398 acres of quail management for the NBCI Management Inventory (Figure 1).

NBCI State Quail Coordinator: Roger Applegate, roger.applegate@tn.gov

Texas – Texas Parks and Wildlife Department

Population: According to Texas Parks and Wildlife Department (TPWD) surveys, bobwhite populations have dramatically declined in recent years in prime areas, primarily due to long-term drought. However, bobwhite numbers appear to be recovering beginning with the 2014–15 season and habitat conditions look excellent going into the 2015 breeding season.

Hunting: TPWD hunter numbers for 2013–14 increased for the first time in five years, from 20,924 in the previous year to 31,568; estimated quail harvest increased 56% from previous year (220,502). The small game hunter survey questionnaire was changed to exclude pen-reared birds in the harvest estimate in 2013.

Management: quail conservation efforts include the development of quail focal areas as outlined by the NBCI Coordinated Implementation Program, in four ecological regions. Only one focal area has been reporting both spring and fall counts. TPWD quail management highlights include:

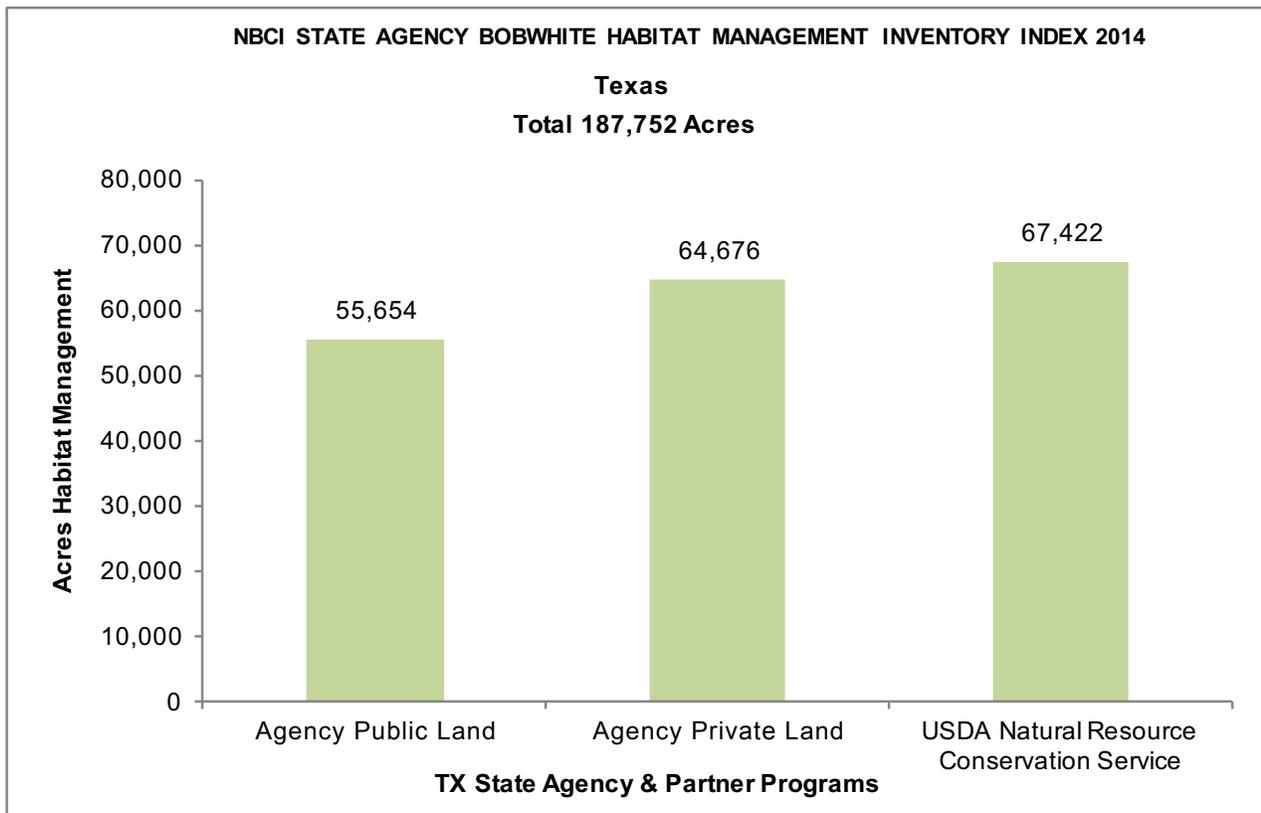
- A grant program is nearing completion to support upland game bird habitat projects in focal counties. TPWD received authority to spend \$4 million of state funds (game bird stamp) for quail focus area development during fiscal year 2014 (\$2 million) and fiscal year 2015 (\$2 million). Projects are ongoing in



collaboration with conservation partners primarily in focal counties. All work must be complete by August 31, 2015.

- About 64,676 acres of quail habitat were developed on private lands and another 55,654 acres on public lands under the direction of state wildlife personnel.
- Farm Bill habitat programs specific to quail were implemented on 67,422 acres in fiscal year 2014. Programs specific to lesser prairie-chickens (USDA CP38 State Acres for Wildlife Enhancement, SAFE) and bobwhite are included in this estimate.
- Reported 187,752 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1–3).
- Current bobwhite research across several conservation entities and institutions includes the following: monitoring bobwhite population response to habitat management at the cooperative and county scale; human dimensions (landowner attitudes towards quail and grassland bird conservation); evaluation of wild quail translocation; population threshold hypothesis; potential disease, parasite and toxin impacts; and quail genetics, dispersal, and productivity.

NBCI State Quail Coordinator: Robert Perez, robert.perez@tpwd.texas.gov



Virginia – Virginia Department of Game & Inland Fisheries

Population: Virginia’s quail population continues to decline in many areas, but populations seem to have stabilized in some areas, and there are a few areas where increases seem likely, but are hard to document. New monitoring techniques this year may increase the ability to detect changes.

Hunting: For the 2014–15 hunting season, 34 avid quail hunters reported on 447 hunts. They found 489 coveys and averaged finding 1.09 coveys per hunt with a statewide average of 2.9 hours per covey find. These numbers are all somewhat worse than the previous year’s results. Hunter harvest and effort survey for the 2013–14 season indicated the number of quail hunters decreased slightly from 5.1 to 3.7 % of all licensed hunters.

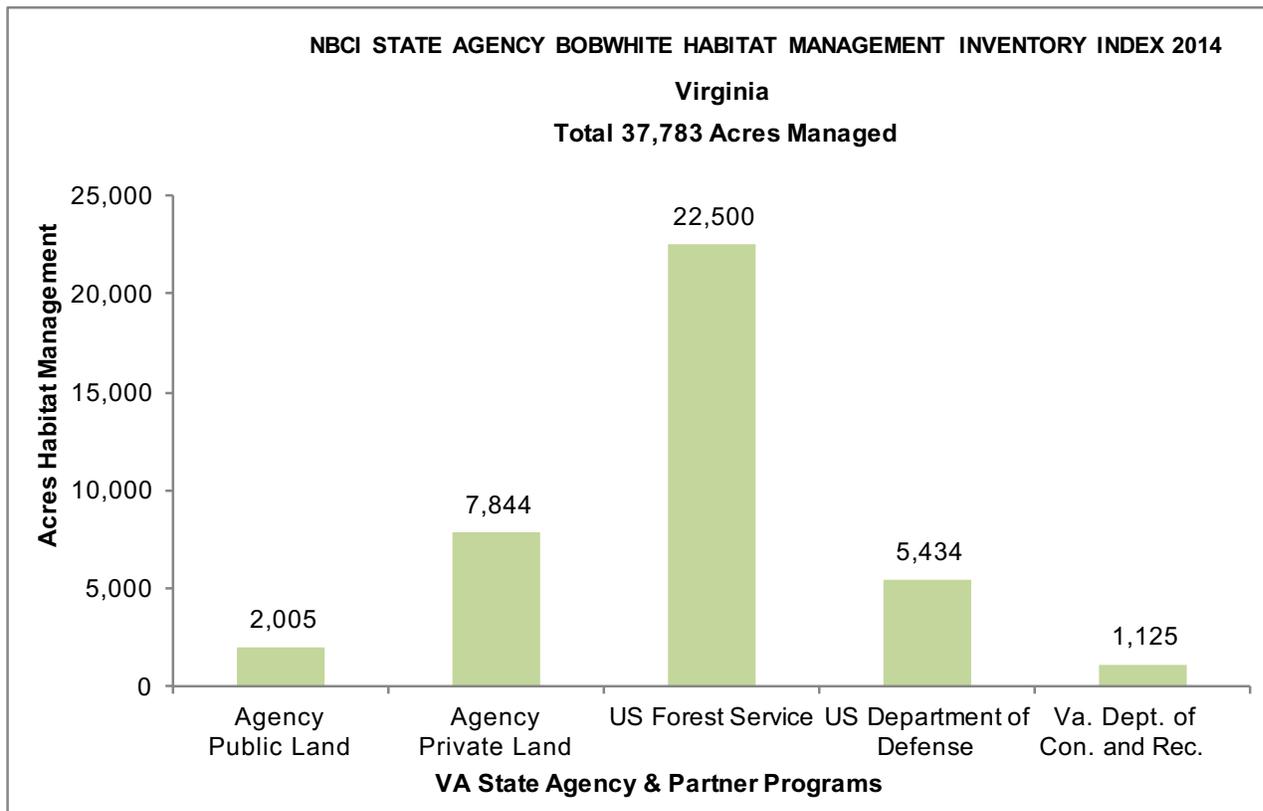
While the degree of error was high due to the low number of hunters in the survey, the survey indicated a total of 172,148 (SE ± 64,755) quail were harvested, of which 31,787 (SE ± 17,073) were wild quail.

Management: Virginia Department of Game and Inland Fisheries (VDGIF) Quail Recovery Initiative completed its 5th implementation year on June 30th, 2014. A comprehensive report was prepared on the agency’s actions on behalf of bobwhites since 1980 (see General Assembly Report). Quail management highlights through the first five years included:



- Five private lands wildlife biologists worked with 1,631 new contacts that collectively owned over 554,485 acres.
- 2,498 sites visits, 1,513 management plans written, 135 outreach events.
- Quail DVD Answering the Call widely distributed.
- 389 tracts of land and 379 landowners in the Quail Management Assistance Program totaling 88,802 acres enrolled with 13,186 (15%) under some form of quail management.
- Collectively through all programs and in conjunction with partners allocated over \$4.3 million in habitat funding, totaling approximately 33,700 acres.
- New forestry related BMPs Memorandum of Understanding with Virginia Department of Forestry signed and program underway and revised offering cost-share for eight wildlife-friendly forestry BMPs including prescribed fire—680 acres enrolled in two years.
- Reported 37,783 acres of quail management for the NBCI Habitat Management Inventory (chart below; Figures 1–2, 4).
- Preparing for third year of June call counts and point habitat assessments per NBCI Coordinated Implementation Program monitoring protocol for focal areas.

NBCI State Quail Coordinators: Marc Puckett, marc.puckett@dgif.virginia.gov, and Jay Howell, jay.howell@dgif.virginia.gov



West Virginia – West Virginia Division of Natural Resources

Population: The West Virginia Division of Natural Resources (WVDNR) does not have a statewide population estimate, rather relies on USGS North American Breeding Bird Survey (BBS) data to track long term trends in abundance. Our recent (2009–14) BBS reported declines in all observation categories for northern bobwhites. Survey blocks with possible observations were down 80%, while those identified as probable were off by 33%. Most disturbingly, only two blocks out of 469 had confirmed observations and these declined 94% from the earlier survey. Due to observers’ inability to distinguish pen-reared and released singing males from wild birds, these two blocks may not represent the actual occurrence of our wild population.

Hunting: No current harvest estimate is available.

Management: WVDNR has completed a statewide bobwhite management plan. This plan incorporates quail habitat management techniques and opportunities into our overarching Early Successional Habitat Management Plan for our wildlife management areas. Being a state that is 82% forested, we intend to focus most of our efforts on young forest species.

State Quail Coordinator: Keith Krantz, Keith.D.Krantz@wv.gov



NBCI STATE AGENCY BOBWHITE HABITAT INVENTORY INDEX 2014

NBCI Inventory is an index of the potential for bobwhite to occur, now or in the near future, as identified by the state's quail coordinator. For 2014, 22 state agency coordinators reported 2,049,119 acres of bobwhite habitat management. This management continued trends of targeting of management at a landscape level and the bobwhite's reliance on state agency programs and private lands not enrolled in the USDA Farm Bill.

Introduction

This is the fourth annual 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, grazing, cutting, chemical application, etc.), planting vegetation, and protecting vegetation (deferred grazing and haying, leaving crop residue, leaving standing crops, etc.). Inventory management is for the 2014 reporting year, ranging from July 1, 2013 to March 31, 2015, depending on state accounting systems.

The Inventory is divided into three primary 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 the wildlife agency, and is generally not reported in other private land categories (Figure 2); and (3) Farm Bill, includes acres managed under the USDA Farm Bill program (Figure 3). The Miscellaneous category (Figure 4) includes programs administered by agencies, organizations and institutions not included in Figures 1–3.

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). In a change from previous years, acres are sometimes counted more than once across the four categories. For example, focus area acreage in Figure 4 might be also counted in Figures 1–3. Similarly, state coordinators sometimes lack a system for separating management jointly delivered by >1 partner. Importantly, contributions by all partners are recognized.

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 the area and habitat fragmentation.

Further, as described in detail in 2012 and 2013 State of the Bobwhite reports, because of much 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 six levels of confidence (very 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 Coordinated Implementation Program. 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, as identified by each state's quail coordinator. As one state coordinator put it, “Although I classified my confidence as Very Uncertain because I lack data, I know those acres provide a great deal of benefit to bobwhites so I wanted to report something. Thus, I took a wild stab just so that practice would be identified as an important one in our state.”

On the other hand, some states were conservative in what they reported, limiting acres to those enrolled in specific quail habitat programs with annual verification of compliance.

In addition to differences among states in capacity to collect data and reporting strategy (e.g., conservative or liberal inclusion of habitat management), some states were constrained in 2014 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, and thus did not submit data. Per NBCI Inventory protocol, presence or potential presence (immigration or translocation) of wild bobwhite is a minimum criteria for claiming habitat management for an area.

Results

State coordinators reported 2,049,119 acres of bobwhite habitat management for the 2014 NBCI Habitat Inventory. The number of participating states for 2014, 2013, 2012 and 2011 was 22, 21, 22 and 19, respectively. Management included 641,283 acres on state wildlife agency publicly-owned lands (State Agency Public Land Management, Figure 1), 310,865 acres on private lands through state wildlife agency efforts (State Agency-Based Private Land Management, Figure 2), 435,329 acres on private lands through the USDA Farm Bill (Private Land U.S. Department of Agriculture Farm Bill, Figure 3), and 661,642 acres on public and private lands not reported in Figures 1–3, categorized as miscellaneous lands (Miscellaneous land, Figure 4).

Across all four land categories acreage for the 22 reporting states was as follows: 78,000 (AL), 21,998 (AR), 1,396 (DE), 266,827 (FL), 431,549 (GA), 20,202 (IA), 13,170 (IL), 14,729 (IN), 296,497 (KS), 16,494 (KY), 15,084 (LA), 4,781 (MD), 181,481 (MO), 18,613 (MS), 23,337 (NC), 146,218 (NE), 6,469 (NJ), 201,079 (OK), 41,103 (SC), 20,398 (TN), 187,752 (TX) and 37,783 (VA).

Considering leading program contributions to quail habitat management within individual states, the Inventory was relatively high for the following categories and states:

- State Agency Public Land category (Figure 1): Florida (97,336 acres), Oklahoma (96,488 acres), Missouri (77,982 acres), Kansas (71,514 acres), and Texas (55,654 acres);
- State Agency Private Land category (Figure 2): Nebraska (107,495 acres), Texas (64,676 acres), and Alabama (38,000 acres);
- USDA Farm Bill category (Figure 3): Kansas (220,628 acres), Oklahoma (103,308 acres), and Texas (67,422 acres).
- Drawing from non-primary program category programs (Figure 4), private land management reported for quail plantations and institutes in Florida and Georgia continued to be a major source of quail habitat—Tall Timbers Research Station and Land Conservancy and Jones Ecological Research Center at Ichuaway accounted for 27% (546,861 acres) of all management reported for the Inventory. Also, across all management on private lands not

enrolled in the USDA Farm Bill, Missouri reported 73,465 acres from management delivered by the agency, Quail Forever and Quail and Upland Wildlife Federation,

The 2014 Inventory total of 2.05 million acres was a 23% reduction from 2.67 million acres in 2013, but above the pre-drought level reported in 2011 (1.8 million acres). Because the previous reporting year, 2013, followed the drought year of 2012 (when relatively little habitat management occurred), management in 2014 is likely more typical of a “normal” year, and lower than the spike in management in 2013.

A shift in source of habitat management appears to be occurring, at least as reported for NBCI Inventory program categories (Figures 1–3). As a percentage of the total management acreage (2,049,119), 2014 proportions were 31% for State Agency Public Land (acreage down 22% from 825,349 in 2013), 21% for USDA Farm Bill enrolled lands (acreage down 42% from 743,813 in 2013) and 15% for State Agency Private Land category (acres up 1% from 307,281 in 2013). Past Inventory reports identified USDA Farm Bill acreage as being far greater than other programs, but increasing crop value and declining Farm Bill program enrollment are resulting in far less quail-friendly management via these important programs—1,207,957 acres in 2011, 959,064 acres in 2012, 743,813 acres in 2013, and 435,329 acres in 2014.

State Agency Public Land Management

For management of state wildlife agency public lands in 2014, 22 state agencies reported 641,283 acres (Figure 1), a 31% decrease from the 0.83 million acres reported in 2013, but a 40% increase over the 0.46 million acres reported in 2012 and in 2011.

State coordinator acreage reports (state, coordinator confidence) included the following: 40,000 acres (AL, moderately confident), 16,891 acres (AR, neutral), 900 acres (DE, moderately confident), 97,336 acres (FL, moderately confident), 32,328 acres (GA, moderately confident), 9,187 acres (IA, very confident), 13,170 acres (IL, moderately uncertain), 5,354 acres (IN, moderately confident), 71,514 acres (KS, moderately confident), 5,065 acres (KY, somewhat uncertain), 3,000 acres (LA, somewhat confident), 2,284 acres (MD, neutral), 77,982 acres (MO, moderately confident), 7,784 acres (MS, very confident), 14,827 acres (NC, somewhat confident), 38,723 acres (NE, very confident), 945 acres (NJ, moderately confident), 96,488 acres (OK, somewhat confident), 29,358 acres (SC, moderately confident), 20,398 acres (TN, moderately confident), 55,654 acres (TX, moderately confident), and 2,005 acres (VA, somewhat confident).



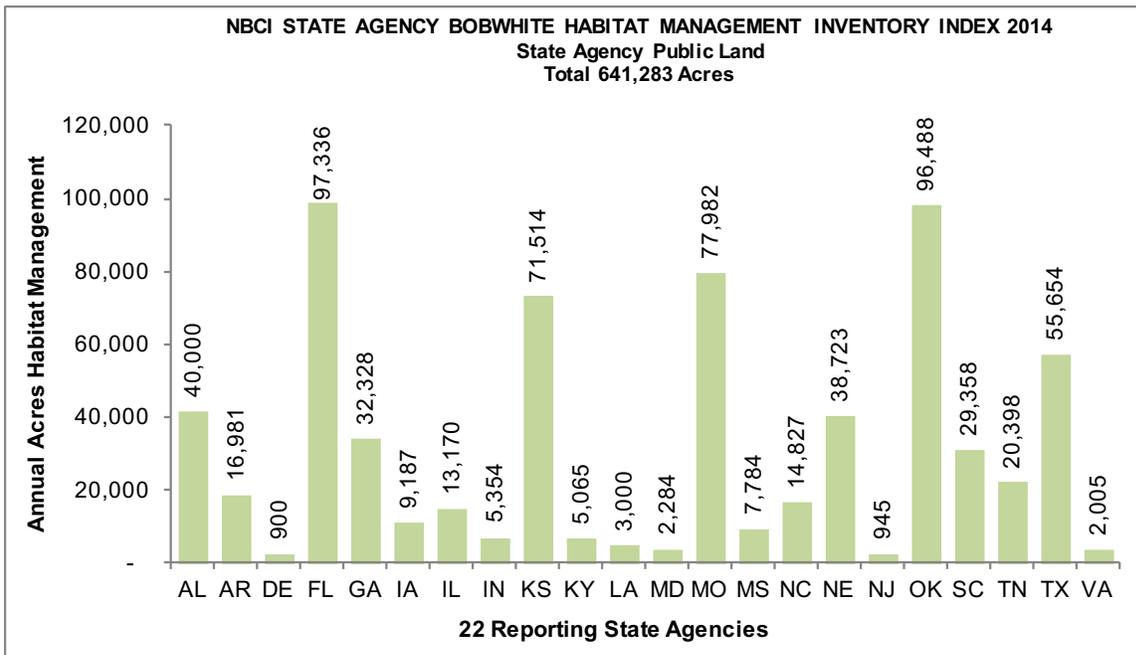


Figure 1. NBCI State Agency Bobwhite Habitat Management Index for 22 state public land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to March 31, 2015).

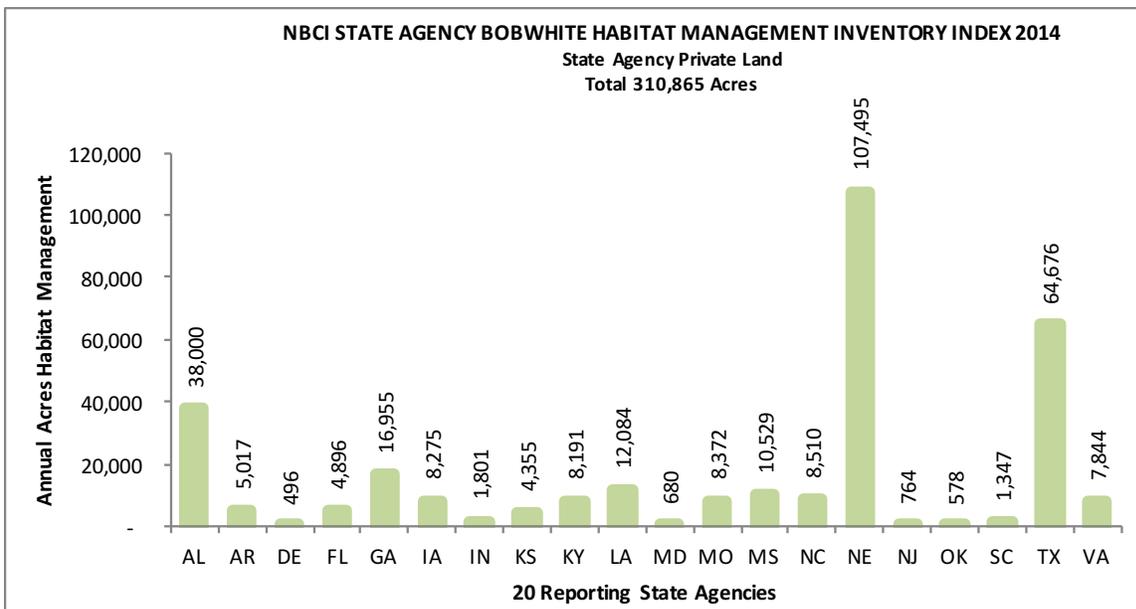


Figure 2. NBCI State Agency Bobwhite Habitat Management Index for 20 state private land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to March 31, 2015).



State Agency-Based Private Land Management

For 2014 on private lands where management was based on state agency work, and not generally a part of the Farm Bill, 20 state agencies reported 310,865 acres (Figure 2), a 1.5% increase over 307,281 acres in 2013, a 204% increase over 103,063 acres in 2012, and 128% greater than 137,309 acres in 2011. State coordinator acreage reports (state, coordinator confidence) included the following: 38,000 acres (AL, moderately confident), 5,017 acres (AR, somewhat confident), 496 acres (DE, moderately confident), 4,896 (FL, somewhat confident), 16,955 (GA, moderately confident), 8,275 acres (IA, very confident), 1,801 acres (IN, very confident), 4,355 acres (KS, moderately confident), 8,191 acres (KY, somewhat uncertain), 12,084 acres (LA, moderately confident), 680 acres (MD, moderately confident), 8,372 acres (MO, very confident), 10,529 acres (MS, very confident), 8,510 acres (NC, somewhat confident), 107,495 acres (NE, very confident), 764 acres (NJ, moderately confident), 578 acres (OK, moderately confident), 1,347 acres (SC, moderately confident), 64,676 acres (TX, moderately confident), and 7,844 acres (VA, somewhat confident).

Private Land Enrolled in U.S. Department of Agriculture Farm Bill

For 2014 on private lands where management was based on USDA Farm Bill programs, nine state agencies reported on 14 programs, practices and management delivered by partners, for a total 435,329 acres (Figure 3).

State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 2,540 acres (IA, Farm Bill delivered by Pheasants Forever, very confident), 2,918 acres (IN, NOBO SAFE, very confident), 4,656 acres (IN, CP33, very confident), 73,207 acres (KS, MCM, somewhat confident), 7,379 acres (KS, CCRP, moderately confident), 140,042 acres (KS EQIP, somewhat confident), 1,817 acres (MD, Farm Bill, neutral), 10,417 acres (MO, Farm Bill delivered by Quail Forever, moderately confident), 19,617 acres (MO, Farm Bill delivered by STATE agency, moderately confident), 300 acres (MS, NRCS Longleaf allocation, very confident), 1,156 acres (NJ, GRP, neutral), 550 acres (NJ, CRP, neutral), 103,308 acres (OK, Farm Bill, somewhat confident), and 67,422 acres (TX, Farm Bill, moderately confident).

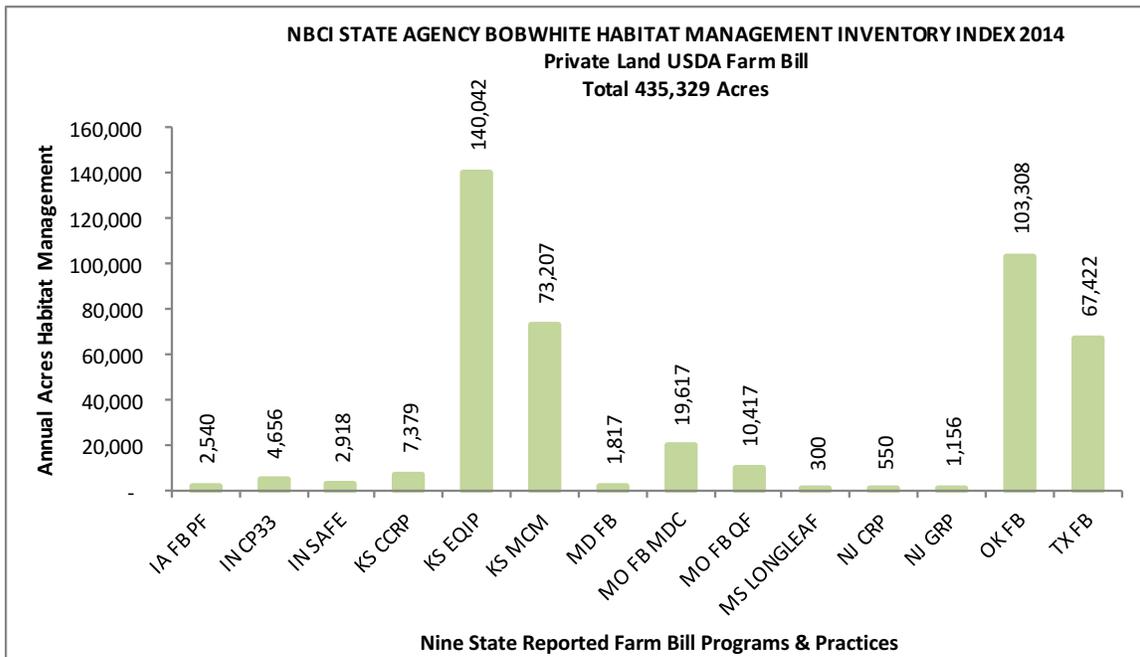


Figure 3. NBCI State Agency Bobwhite Habitat Management Index for 14 U.S. Department of Agriculture Farm Bill funded programs. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to December 31, 2014). Acronyms: CCRP–Continuous Conservation Reserve Program, CRP–Conservation Reserve Program, CP33–Habitat Buffers for Upland Birds, EQIP–Environmental Quality Incentives Program, FB–Farm Bill (CCRP, CRP, EQIP, GRP, MCM, etc.), GRP–Grassland Reserve Program, Longleaf (allocation by USDA Natural Resource Conservation Service for longleaf pine restoration and management), MCM–Conservation Reserve Program Mid-Contract Management, MO–program delivery by MDC (Missouri Department of Conservation) and QF (Quail Forever), IA–program delivery by PF (Pheasants Forever), and SAFE–Conservation Reserve Program State Acres For Wildlife Enhancement (CP38).



Miscellaneous Land

For 2014, eight state agencies reported on 18 public and private land programs that contribute to quail management, for a total of 661,642 acres (Figure 4). The 2014 Miscellaneous Land category builds on last year's report by including state agency focus and NBCI Focal Areas reported by Kentucky and New Jersey. In the future as state agency data are included in the centralized NBCI data base, all NBCI Focal Areas will be added as a separate primary category.

State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 164,595 acres (FL, Tall Timbers Research Station and Land Conservancy, very confident), 365,901 acres (GA, Tall Timbers Research Station and Land Conservancy, very confident), 16,365 acres (GA, Jones Ecological Research Center at Ichuaway, very confident), 460 acres (KY, Shaker Village, very confident), 537 acres (KY, Bluegrass Army Depot Focus Area, moderately confident), 1,355 acres (KY, Livingston County National Focal Area, moderately confident), 886 acres (KY, Peabody Focus Area, moderately confident), 45,860 acres (MO, Quail and Upland Wildlife Federation, somewhat confident), 19,233 acres (MO, Quail Forever, moderately confident), 2,260 acres (NJ, New Jersey Audubon, moderately confident), 30 acres (NJ, New Jersey Partners for Wildlife, moderately confident), 764 acres (NJ, South Jersey Quail Project, moderately confident), 705 acres (OK, Oklahoma Partners for Wildlife, moderately confident), 3,234 acres (OK, Quail

Forever, very confident), 10,398 acres (SC, U.S. Forest Service, moderately confident), 1,125 acres (VA, Virginia Department of Conservation & Recreation Lands, somewhat confident), 5,434 acres (VA, US Department of Defense,) and 22,500 acres (VA, US Forest Service, somewhat uncertain).

Conclusion

In the fourth year of the NBCI State Agency Habitat Management Inventory Index, the majority of states contributed data. State coordinators are encouraged to include key contributions to bobwhite habitat management, and whether the area is 10 acres, or 100,000 acres, there is potential for bobwhites to benefit, and partners are being recognized in a national forum.

Over the past few years there has been a shift in sources of bobwhite habitat with a relatively large amount of active management being delivered recently through state agency programs and private lands not enrolled in the USDA Farm Bill. Similarly, across all habitat programs effort is increasingly being targeted at a landscape level, reflecting the need to more wisely use limited financial resources and to increase the chances that bobwhite populations will benefit in a measurable fashion.

The Inventory provides only an index of the potential for bobwhites to occupy landscapes, and recent trends in weather, abundant rainfall in the Great Plains and severe cold and snow in the Midwest, translate to expansion of bobwhites in the former, and contraction in the latter. Weather has always tempered expectations for finding quail.

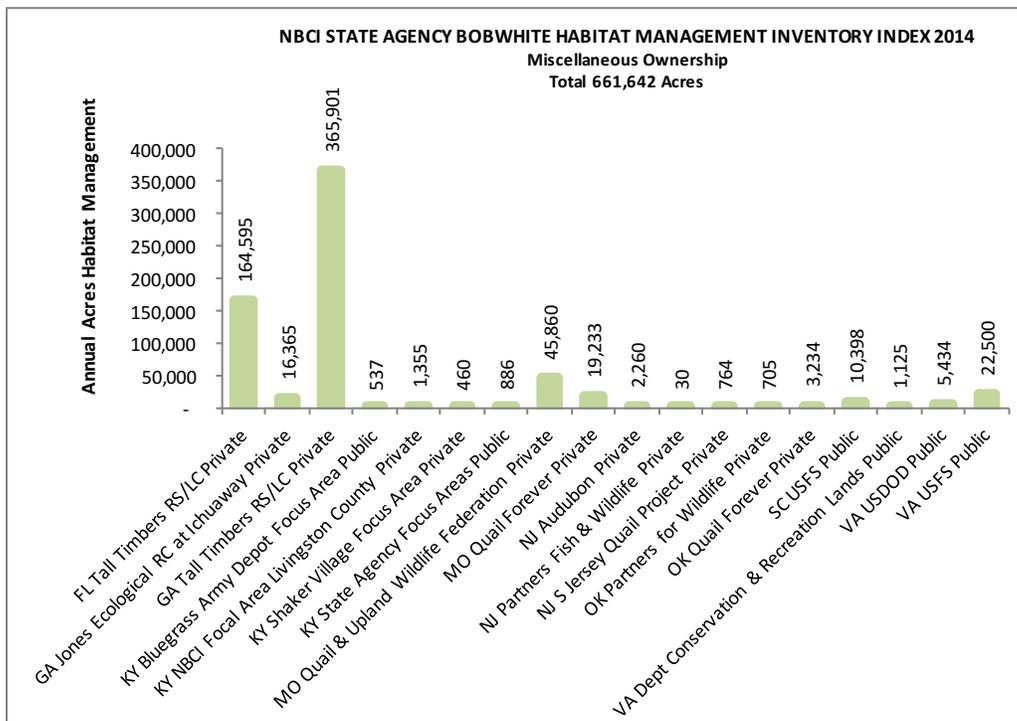


Figure 4. NBCI State Agency Bobwhite Habitat Management Index for miscellaneous public and private lands. Index is acres of habitat management for the reporting year, ranging from July 1, 2013 to December 31, 2014. Acronyms: USDOD (U.S. Department of Defense), LC (Land Conservancy), RC (Research Center), RS (Research Station), S (South) and USFS (U.S. Forest Service).



NBCI STATE AGENCIES

Alabama Department of Conservation & Natural Resources
Arkansas Game & Fish Commission
Delaware Division of Fish & Wildlife
Florida Fish & Wildlife Conservation Commission
Georgia Department of Natural Resources
Illinois Department of Natural Resources
Indiana Division of Fish & Wildlife
Iowa Department of Natural Resources
Kansas Department of Wildlife, Parks & Tourism
Kentucky Department of Fish & Wildlife Resources
Louisiana Department of Wildlife & Fisheries
Maryland Department of Natural Resources
Mississippi Department of Wildlife, Fisheries and Parks
Missouri Department of Conservation
Nebraska Game & Parks Commission
New Jersey Division of Fish & Wildlife
North Carolina Wildlife Resources Commission
Ohio Department of Natural Resources
Oklahoma Department of Wildlife Conservation
Pennsylvania Game Commission
South Carolina Department of Natural Resources
Tennessee Wildlife Resources Agency
Texas Parks & Wildlife Department
Virginia Department of Game & Inland Fisheries
West Virginia Division of Natural Resources

ACRONYMS

BBS – USGS North American Breeding Bird Survey
CP – Conservation Practice (as used in the Conservation Reserve Program)
CP33 – Habitat Buffers for Upland Birds CRP
CP38 – State Acres for Wildlife Enhancement, SAFE
CRP – Conservation Reserve Program
DNR – Department of Natural Resources
EQIP - Environmental Quality Incentives Program
NBCI – National Bobwhite Conservation Initiative
NBTC – National Bobwhite Technical Committee
NGO – Non-Governmental Organization
USDA NRCS – Natural Resources Conservation Service
SAFE – State Acres for Wildlife Enhancement, CP38
USDA – United States Department of Agriculture
USGS – United States Geological Survey
VPA-HIP – Voluntary Public Access and Habitat Incentive Program
WMA – Wildlife Management Area

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DNR
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