

NBCI STATE AGENCY BOBWHITE HABITAT INVENTORY INDEX 2015

The NBCI Habitat Inventory is an index of the potential for bobwhite to occur on the landscape, now or in the near future, as identified by the state's quail coordinator. For 2015, 21 state agency coordinators reported 2,695,645 acres of bobwhite habitat management, with individual programs ranging in size from 294 to 365,901 acres. Coordinators are encouraged to report key contributions to bobwhite management in their state, and regardless of program size, has potential for bobwhites to benefit, and partners are recognized in a national forum.

Introduction

This is the fifth 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, prescribed 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 2015 reporting year, which varies across states and among years.

The Inventory is divided into 3 primary land categories based on a combination of ownership, leadership and funding source: (1) State Agency Public Land, includes management on the wildlife agency's land (Figure 1); (2) State Agency-Based Private Land, includes management on private lands that is funded, led or made possible by the wildlife agency, and is generally not reported in other private land categories (Figure 2); and (3) USDA 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. In addition, for the first time, most participating state agencies reported acres of habitat management on NBCI Coordinated Implementation Program (CIP) Focal Areas (see article on page 26).

Multiple management treatments on any one acre can be counted >1 time per year (e.g., burning, chemical treatment and planting 1 acre in same year equals 3 acres of habitat management). Less common and avoided when feasible, acres are sometimes counted more than once across land categories. For example, NBCI CIP Focal Area acreage might be also counted in Figures 1-3, and 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 effected by weather and other non-habitat factors, and by movement into an area, which is affected by distance from existing populations 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 7 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 CIP Focal Areas. Such detailed measurement, however, is not feasible at large scales, so the Inventory's coordinator confidence ratings provide a qualifier for expectations for bobwhite to occupy habitat and/or to be abundant. This is particularly useful for large areas where bobwhites were known to exist and some kind of habitat program had been implemented, but there is no measurement of habitat quality (e.g., stage of plant succession) or actual bobwhite abundance.

In summary, the NBCI Inventory is an index of the potential for bobwhite to occur on the landscape, as identified by each state's quail coordinator. 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 are conservative in what they report, 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 2015 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

Twenty-one state agency coordinators reported 2,695,645 acres of bobwhite habitat management, 31% more than 2.05 million acres reported last year. Management included 881,181 acres on state wildlife agency publicly-owned lands (Figure 1), 478,019 acres on private lands through state wildlife agency efforts (State Agency-Based Private Land Management, Figure 2), 603,963 acres on private lands through the USDA Farm Bill (Figure 3), 715,214 acres on public and private lands not reported in Figures 1-3, categorized as miscellaneous land ownership (Figure 4), and 17,268 acres of habitat management on NBCI Coordinated Implementation Program Focal Areas (see article on page 26). The “reporting year,” 2015, included dates ranging from July 1, 2014 to March 31, 2016, varying with fiscal years, accounting systems, etc.

Across all 5 land categories, acreage for the 21 reporting states was as follows: 95,000 acres (AL), 18,241 (AR), 4,935 (DE), 269,665 (FL), 402,707 (GA), 30,222 (IA), 14,919 (IL), 371,036 (KS), 15,613 (KY), 17,472 (LA), 4,332 (MD), 191,368 (MO), 22,863 (MS), 26,316 (NC), 102,691 (NE), 7,655 (NJ), 513,533 (OK), 142,884 (SC), 90,764 (TN), 293,833 (TX), and 59,596 acres (VA).

State Agency Public Land Management

Twenty-one state agencies reported 881,181 acres of bobwhite habitat management (Figure 1). The top 5 states, reporting 90,764 to 182,423 acres, were Florida, Kansas, Oklahoma, Tennessee, and Texas. State coordinator acreage reports (state, coordinator confidence rating) included the following: 50,000 acres (AL, moderately confident), 10,212 (AR, neutral), 3,265 (DE, somewhat confident), 99,056 (FL, moderately confident), 18,493 (GA, moderately confident), 11,373 (IA, very confident), 14,094 (IL, moderately uncertain), 128,717 (KS, somewhat uncertain), 7,867 (KY, somewhat confident), 4,707 (LA, moderately confident), 2,304 (MD, somewhat confident), 51,355 (MO, moderately confident), 6,338 (MS, very confident), 15,407 (NC, somewhat confident), 68,832 (NE, very confident), 840 (NJ, very confident), 182,423 (OK, moderately confident), 14,032 (SC, very confident), 90,764 (TN, somewhat confident),

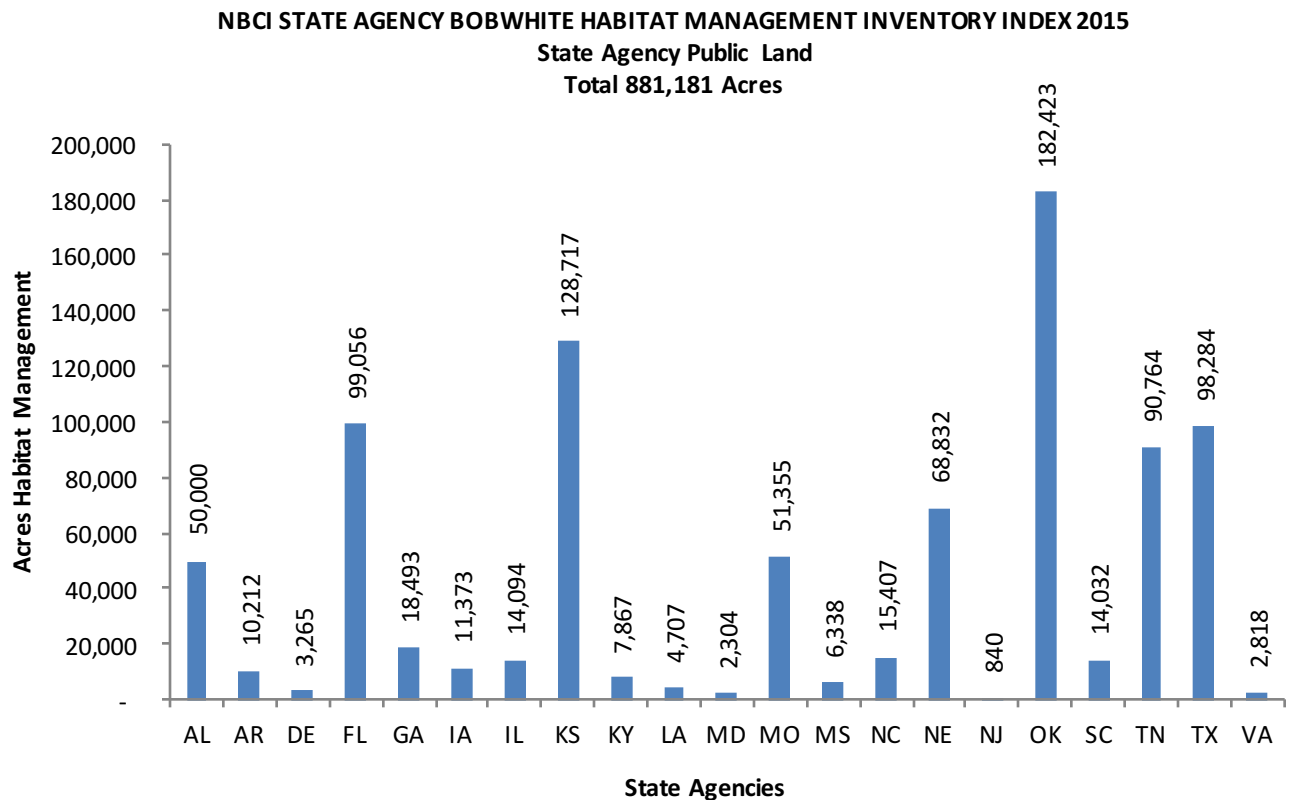


Figure 1. 2015 NBCI State Agency Bobwhite Habitat Management Index for 21 state public land programs. Index is acres of habitat managed by prescribed fire, disking, prescribed grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2014 to March 31, 2016).



98,284 (TX, very confident) and 2,818 acres (VA, moderately confident).

State Agency-Based Private Land Management

Nineteen state agencies reported 478,019 acres of bobwhite habitat management (Figure 2). The top 5 states, reporting 32,674 to 166,093 acres, were Alabama, Nebraska, Oklahoma, South Carolina, and Texas. State coordinator acreage reports (state, coordinator confidence rating) included the following: 45,000 acres (AL, moderately confident), 6,822 (AR, neutral), 4,922 (FL, very confident), 6,065 (GA, moderately confident), 10,089 (IA, very confident), 825 (IL, somewhat confident), 5,511 (KS, moderately confident), 6,301 (KY, somewhat confident), 5,637 (LA, moderately confident), 450 (MD, somewhat confident), 21,890 (MO, moderately confident), 12,722 (MS, very confident), 9,399 (NC, somewhat confident), 32,674 (NE, very confident), 732 (NJ, very confident), 53,081 (OK, moderately confident), 89,002 (SC, moderately uncertain), 166,093 (TX, moderately confident), and 804 acres (VA, somewhat confident). Private lands in this category are not generally part of the USDA Farm Bill.

10,089 (IA, very confident), 825 (IL, somewhat confident), 5,511 (KS, moderately confident), 6,301 (KY, somewhat confident), 5,637 (LA, moderately confident), 450 (MD, somewhat confident), 21,890 (MO, moderately confident), 12,722 (MS, very confident), 9,399 (NC, somewhat confident), 32,674 (NE, very confident), 732 (NJ, very confident), 53,081 (OK, moderately confident), 89,002 (SC, moderately uncertain), 166,093 (TX, moderately confident), and 804 acres (VA, somewhat confident). Private lands in this category are not generally part of the USDA Farm Bill.

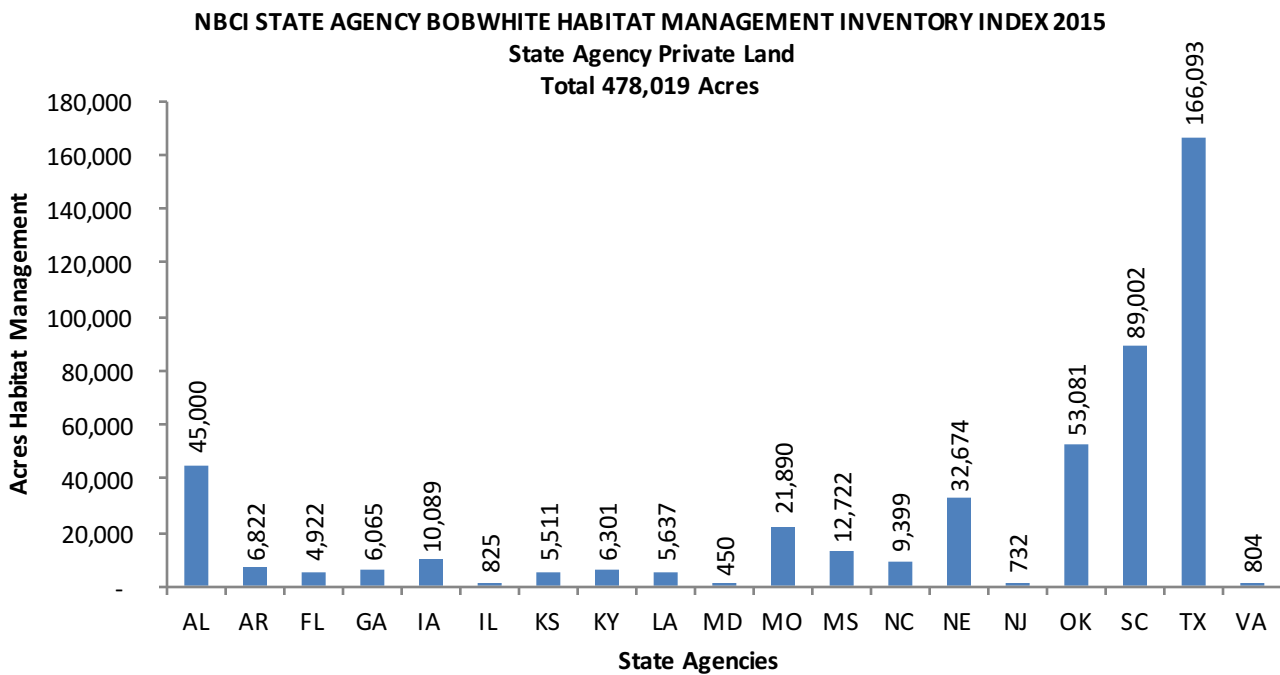


Figure 2. 2015 NBCI State Agency Bobwhite Habitat Management Index for 19 state-led private land programs. Index is acres of habitat managed by prescribed fire, disking, prescribed grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2014 to March 31, 2016).



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

Nine state agencies reported on 14 programs, practices and management delivered by partners, for a total 603,963 acres of bobwhite habitat management (Figure 3). Among states, bobwhite-friendly USDA Farm Bill management was by far highest in Kansas (total 225,958 acres) and Oklahoma (total 270,069 acres). State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 6,954 acres (IA, delivered by Pheasants Forever, moderately confident), 201,554 (KS, EQIP,

somewhat confident), 24,404 (KS, CCRP, moderately confident), 7,128 (LA, NRCS, moderately confident), 1,578 (MD, Farm Bill, neutral), 34,950 (MO, delivered by Missouri Department of Conservation, somewhat confident), 22,608 (MO, delivered by Quail Forever, somewhat confident), 1,141 (NJ, CRP, very confident), 294 (NJ, GSP, very confident), 2,648 (NJ, EQIP, very confident), 210,637 (OK, NRCS, moderately confident), 59,432 (OK, FSA, moderately confident), 28,884 (TX, Farm Bill, moderately confident), and 1,751 acres (VA, NRCS, moderately confident).

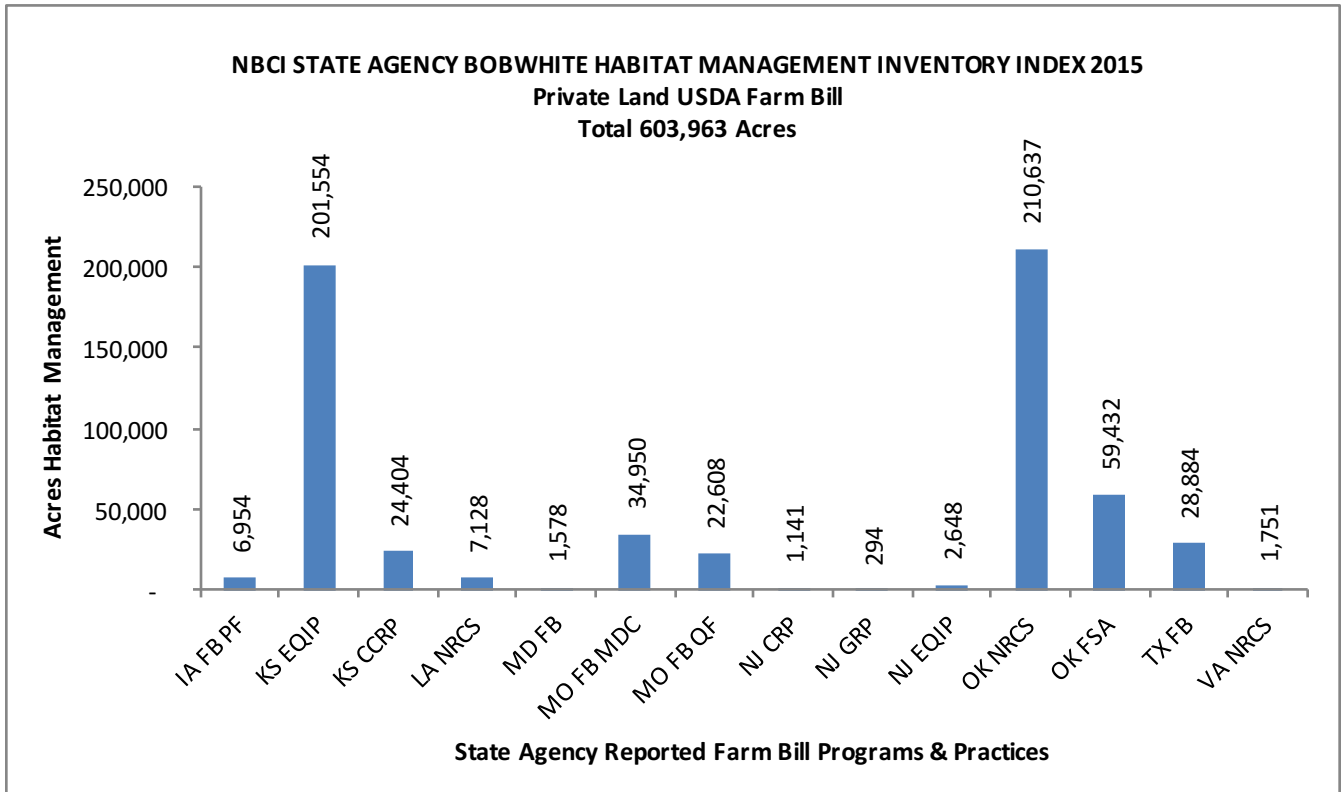


Figure 3. 2015 NBCI State Agency Bobwhite Habitat Management Index for 9 states and 14 U.S. Department of Agriculture Farm Bill funded programs. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2014 to December 31, 2015). Acronyms: CCRP—Continuous Conservation Reserve Program, CRP—Conservation Reserve Program, EQIP—Environmental Quality Incentives Program, FB—Farm Bill (CCRP, CRP, EQIP, GRP, etc.), FSA—Farm Service Agency, GRP—Grassland Reserve Program, MO-program delivery by MDC (Missouri Department Conservation) and QF (Quail Forever) biologists, NRCS—Natural Resources Conservation Service, and PF (Pheasants Forever) biologists delivered.

U.S. Department of Agriculture (USDA) Farm Bill programs, or delivery, as reported by state quail coordinator, and acronyms, are as follows: CCRP—Continuous Conservation Reserve Program; EQIP—Environmental Quality Incentives Program, FB—Farm Bill (CCRP, CRP, EQIP, GRP, etc.); FSA—USDA Farm Service Agency; GRP—Grassland Reserve Program; and, NRCS—USDA Natural Resources Conservation Service.



Miscellaneous Land

For federal public lands, and private lands not enrolled in the USDA Farm Bill (Figure 3), 11 state agencies reported on 17 partner programs and 715,214 acres of management (Figure 4), similar to 661,642 acres in 2014. The 2014 report included management acres for NBCI Coordinated Implementation Program Focal Areas for Kentucky and New Jersey—this management is reported separately for 2015, under CIP Focal Areas, below, and in feature article on page 26.

Some notable programs included Tall Timbers Research Station and Land Conservancy in Florida and Georgia (total 531,588 acres), Quail and Upland Wildlife Federation in Kansas, Missouri, Mississippi, North Carolina and Virginia (total 67,285 acres), U.S. Forest Service in South Carolina and Virginia (total 55,595 acres), and Quail Forever in Missouri and Oklahoma (total 12,709 acres). State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 165,687 acres (FL, Tall Timbers Research Station and Land Conservancy, very confident), 365,901 (GA, Tall Timbers Research Station and Land Conservancy, moderately confident), 12,248 (GA, Jones Ecological Research Center at Ichuaway, moderately confident), 10,850 (KS, Quail and Upland Wildlife Federation, neutral), 600 (KY, Shaker Village, very confident), 8,459 (MO, Quail Forever, somewhat confident), 51,775 (MO, Quail and Upland Wildlife Federation, somewhat confident), 1,650 (MS, Quail and Upland Wildlife Federation, very confident), 1,510 (NC, Quail and Upland Wildlife Federation, somewhat confident), 1,500 (NJ, New Jersey Audubon, very confident), 100 (NJ, South Jersey Quail Project, very confident), 4,250 (OK, Quail Forever, somewhat

confident), 1,353 (SC, South Carolina Parks, Recreation and Tourism Management, moderately confident), 37,496 (SC, U.S. Forest Service—Francis Marion District and Enoree Districts, moderately confident), 32,100 (VA, U.S. Department of Defense, somewhat confident), 18,099 (VA, U.S. Forest Service, somewhat uncertain), and 1,636 acres (VA, Quail and Upland Wildlife Federation, somewhat confident).

Focal Areas

Twelve state coordinators reported 17,268 acres of habitat management for NBCI Coordinated Implementation Program (CIP) Focal Areas. These are the first CIP data to be published, and include states that have collected and submitted bird or quail population data to NBCI, and states that plan to in 2016, and states with CIP focal areas in development (Mississippi). NBCI CIP progress and a habitat chart are described in feature article on page 26. State coordinator acreage reports (state, CIP focal area name, coordinator confidence rating) included the following: 1,207 acres (AR, Pea Ridge, neutral), 1,670 (DE, Cedar Swamp, moderately confident), 470 (IA, Ringgold, private land, very confident), 1,336 (IA, Ringgold, public land, very confident), 845 (KY, Livingston County, moderately confident), 331 (MO, 2C, moderately confident), 2,153 (MS, Charles Ray Nix WMA, very confident), 670 (NE, Meridian Quail Initiative, private land, very confident), 515 (NE, Meridian Quail Initiative, public land, very confident), 400 (NJ, Dix WMA, very confident), 3,710 (OK, Cross Timbers, very confident), 1,001 (SC, U.S. Forest Service Indian Creek, very confident), 572 (TX, Austin County, very confident), and 2,388 acres (VA, Big Woods/Piney Grove, moderately confident).



TOM DAILEY



NBCI STATE AGENCY BOBWHITE HABITAT MANAGEMENT INVENTORY INDEX 2015

Miscellaneous Ownership
Total 715,214 Acres

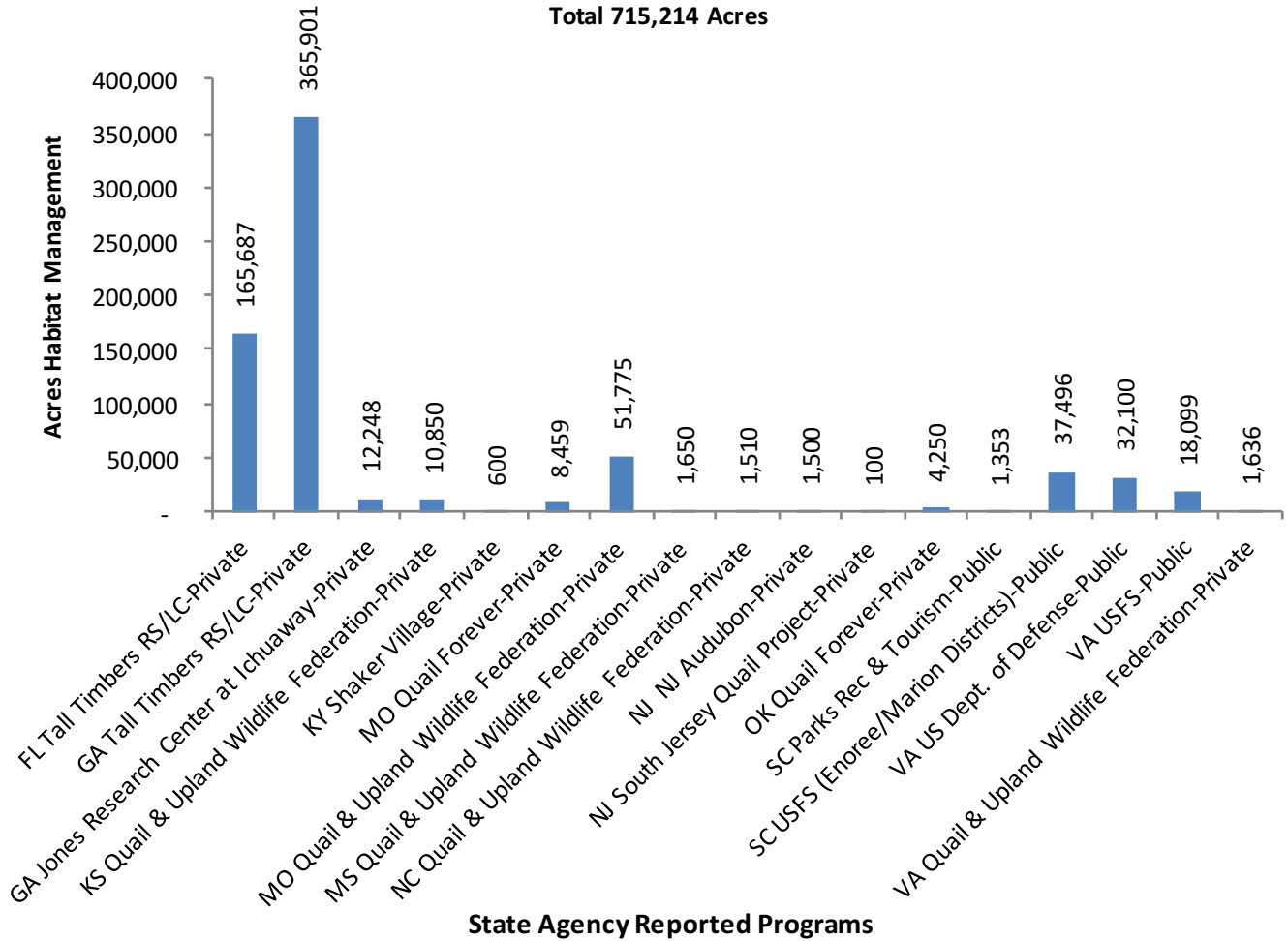


Figure 4. 2015 NBCI State Agency Bobwhite Habitat Management Index for 17 miscellaneous public and private land programs. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from January 1, 2014 to December 31, 2015). Acronyms: USDOD (U.S. Department of Defense), LC (Land Conservancy), RC (Research Center), RS (Research Station), S (South) and USFS (U.S. Forest Service).



Summary

In this fifth year of the NBCI State Agency Habitat Management Inventory, state agency participation remained stable with 19-22 states providing data during 2011-15. The capacity and interest to track bobwhite habitat management has increased in some states, as noted in 2015 Inventory data by Dr. Jeffrey Lusk for Nebraska: “tracking of acres affected by management has continued to increase, as well as the reports (e.g., spreadsheets) produced, particularly as inventories such as this are taken into account.”

Considerable variability remains, however, as evidenced by coordinators’ moderate confidence in particular programs, and the absence or presence of major habitat programs across years and states. Therefore, the description of the Inventory as an index of habitat-based potential for bobwhites to occur on the landscape is accurate and pragmatic, and points to the importance of measuring bobwhite response in the NBCI Coordinated Implementation Program. As an index, the NBCI Inventory has documented major trends in bobwhite-friendly habitat management.

Across the past five years, three of the NBCI Inventory land categories—State Agency Public Land, State Agency-Based Private Land, and Private Land enrolled in USDA Farm Bill—have been standardized and are displayed in Figure 5. For State Agency Public Land, the 881,181 acres in 2015 are a 37% increase over 0.642 million acres reported in 2014 and about the same as 0.825 million acres in 2013. For State Agency-Based Private Land (agency provided leadership, funding, etc.), the 478,019 acres in 2015 are a 53% increase over 0.313

million acres in 2014 and 56% greater than 0.307 million acres in 2013. For Private Land Enrolled in USDA Farm Bill, 603,963 acres reported in 2015 are a 39% increase over the 435,329 acres reported in 2014, but remains down from the previous years.

A shift in source of habitat management is apparent from the NBCI Inventory, with the percentage of the management acreage in 2011 being 67% for Private Land under USDA Farm Bill, and only 33% for State Agency Public and Private Lands combined, whereas in 2015 this is reversed with State Agency management constituting 69% of the total. Put another way, comparing 2011 to the past couple years, Inventory acreage for the USDA Farm Bill is down half, and State Agency efforts have doubled. As explained in previous Inventory reports, because the Inventory is only an index, these trends are difficult to interpret, but they do coincide with decreased enrollment in the USDA Farm Bill, and a drought-caused management decline in major bobwhite landscapes in 2012 and subsequent rebound beginning in 2013. It also appears that slack in USDA Farm Bill programs has been picked up by the State Agencies. Although bobwhite-friendly USDA Farm Bill acreage has declined considerably, states have worked with the USDA to increase focus on bobwhites and other wildlife in remaining practices.

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

NBCI STATE AGENCY BOBWHITE HABITAT MANAGEMENT INVENTORY TRENDS

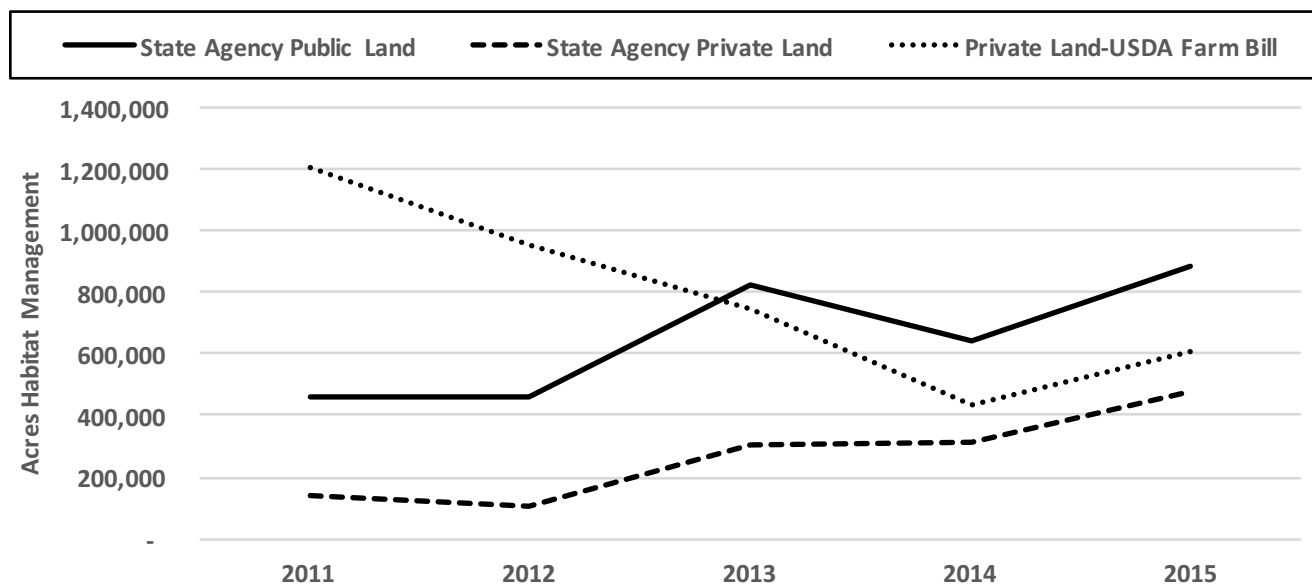


Figure 5. Trends in NBCI State Agency Bobwhite Habitat Inventory Index, 2011-2015. Includes data from standardized categories identified in Figures 1-3.



NBCI launched a new web site, www.quailcount.org. Quailcount.org complements NBCI's outreach website, www.bringbackbobwhites.org, and meets state agency desire for centralized and secure data management. It includes information on the CIP monitoring protocols (Breeding Birds, Fall Coveys and Habitat), the NBCI 2.0 Conservation Planning Tool, the NBCI Inventory, and Quail 8. A few highlights:

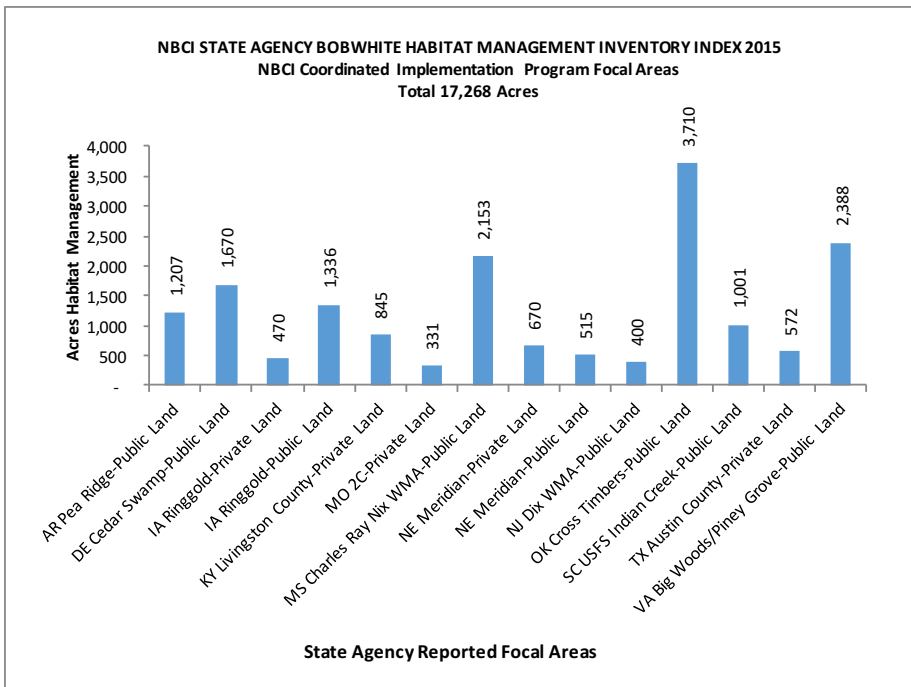
- The geospatial version of NBCI 2.0, known as the Biologist Ranking Information (BRI), provides access to state agencies' NBCI priority bobwhite areas through an interactive web map (www.quailcount.org/briwebmap.html). BRI is also accessible in the field through a geolocation feature that extracts BRI information for the user's location.
- Monitoring protocol and training associated with the NBCI CIP are well illustrated with the first version of a habitat assessment manual and various "how-to" videos. Be sure to check out the testimonial videos from NBCI work in Kansas on quail monitoring and the thrill of doing a fall bobwhite covey count.
- "For biologists only" — As a technical web site some services are available only to participating partners, and a top request from state agencies was a centralized and secure database for quail and songbird abundance data. Quailcount.org

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"Continuous census is the yardstick of success or failure in conservation." (Aldo Leopold 1933, Game Management).

offers an on-line data entry system for states participating in the CIP. As of March 2016, the NBCI database had over 10,000 observations. The national database reduces individual state costs for data management, analysis and reporting, and the large pool of data increases the value of analyses.

Quailcount.org is also the main website for the upcoming Quail 8 national technical conference. NBCI and the Tennessee Wildlife Resources Agency are co-hosting the Eighth National Quail Symposium in Knoxville in July 2017. The preliminary program is published with abstracts for 80 presentations. Quail hunters will particularly like 6 abstracts viewable in the program that cover bird dogs and hunting efficiency.

The launch of Quailcount.org is a major step forward in national coordination of quail conservation. It is just the beginning of continued work by NBCI to provide essential technical tools to state and partner biologists.



2015 NBCI State Agency Bobwhite Habitat Management Index for 12 Coordinated Implementation Program Focal Areas. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from January 1, 2014 to December 31, 2015). Further information can be found in the Habitat Inventory section.

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"It originated from the field because we wanted to get a better handle on what our quail population was, and the impact that our management decisions were having."
 Kansas Department of Wildlife, Parks & Tourism, Wildlife Area Manager, Scott Thomasson, on why NBCI was asked to provide training in Carneiro, Kansas, on October 6-7, 2015.

