

# 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).



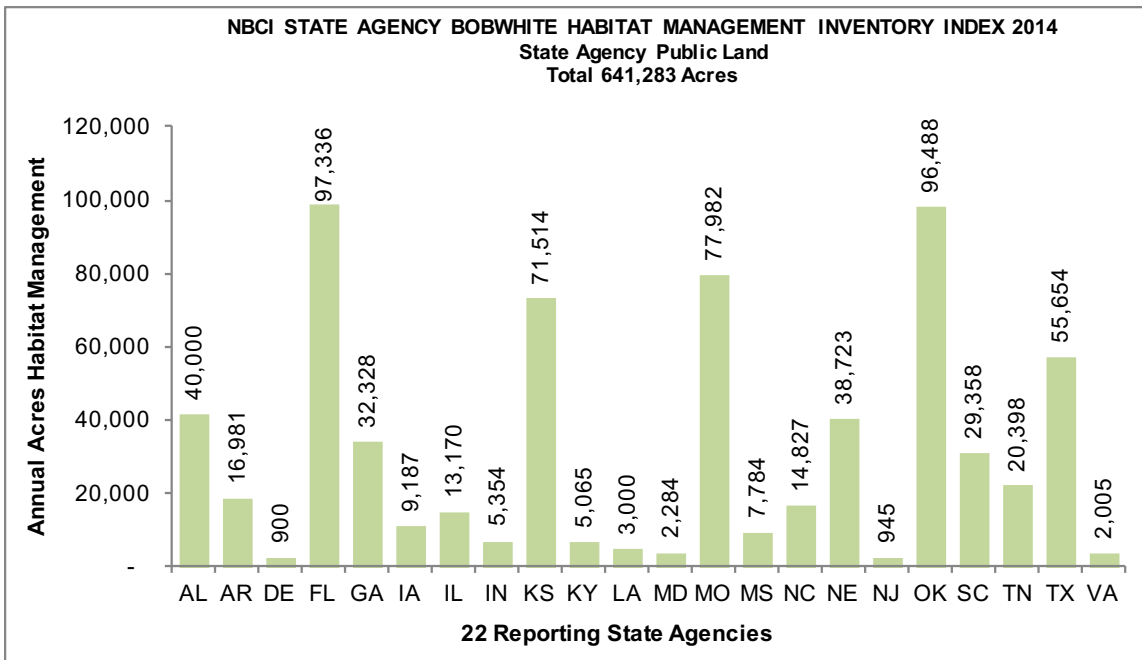


Figure 1. NBCI State Agency Bobwhite Habitat Management Index for 22 state public land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to March 31, 2015).

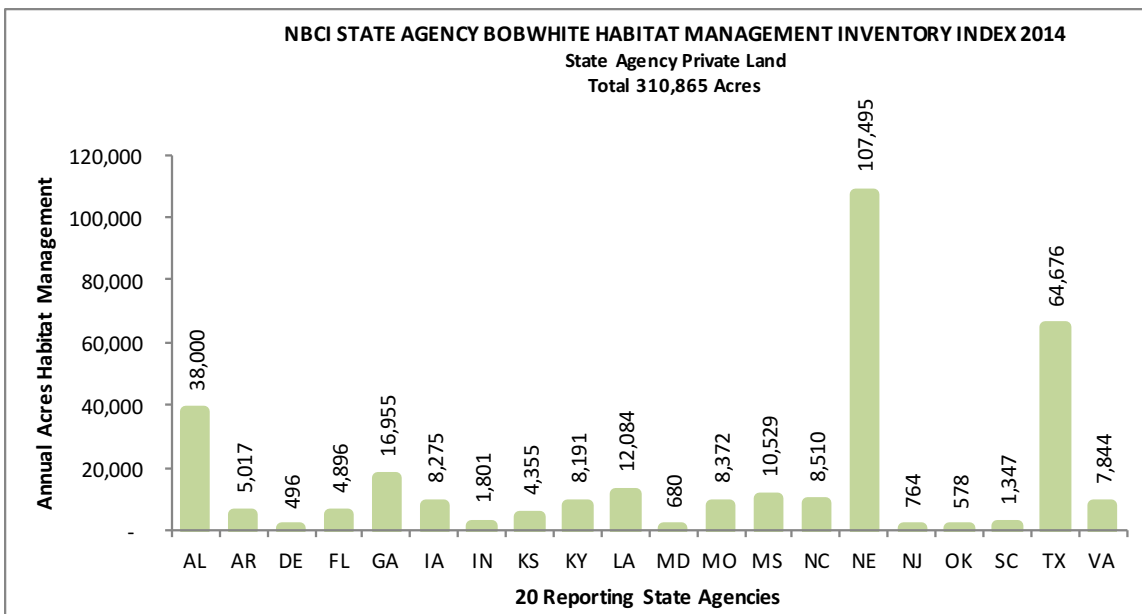


Figure 2. NBCI State Agency Bobwhite Habitat Management Index for 20 state private land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to March 31, 2015).



### 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).

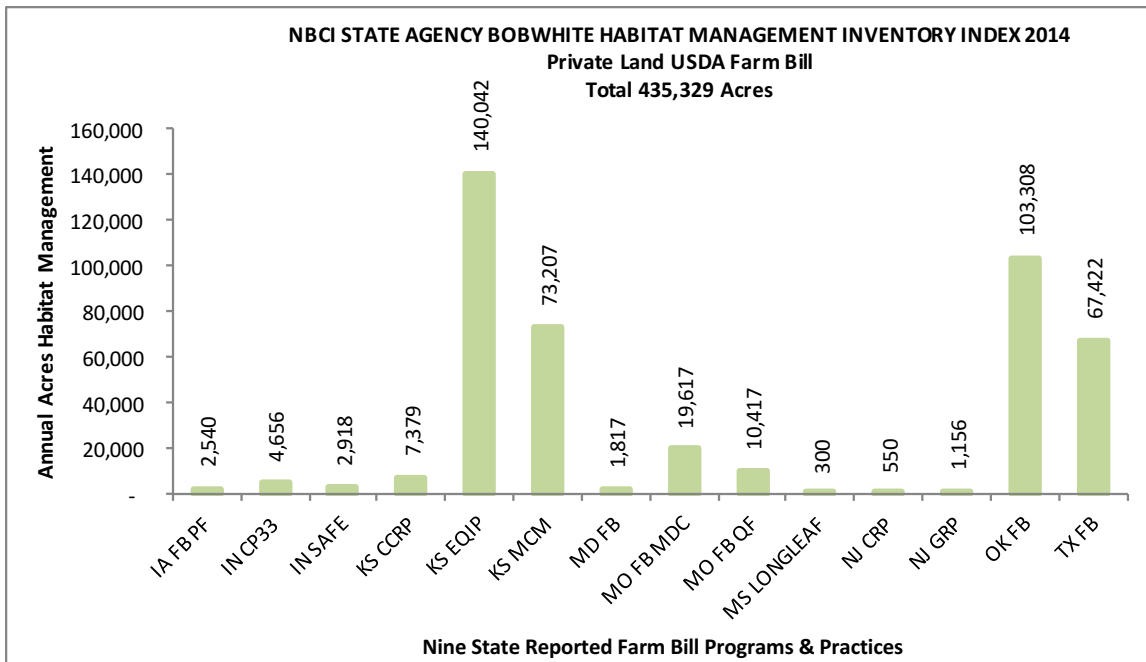


Figure 3. NBCI State Agency Bobwhite Habitat Management Index for 14 U.S. Department of Agriculture Farm Bill funded programs. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2013 to December 31, 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.

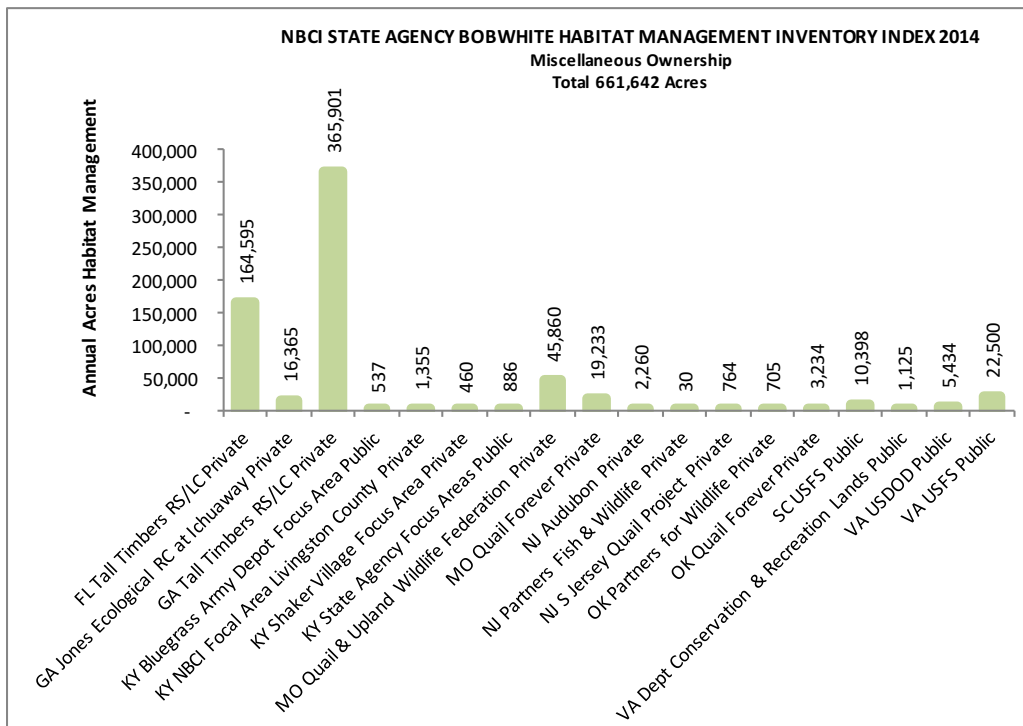


Figure 4. NBCI State Agency Bobwhite Habitat Management Index for miscellaneous public and private lands. Index is acres of habitat management for the reporting year, ranging from July 1, 2013 to December 31, 2014. Acronyms: USDOD (U.S. Department of Defense), LC (Land Conservancy), RC (Research Center),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

