



NBCI STATE AGENCY BOBWHITE HABITAT INVENTORY INDEX 2013-14

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. Major news in 2013, in both the Inventory and State Conservation Reports, is a rebound in amount of bobwhite habitat management compared to droughty 2012, a clear indication of the resolve of state wildlife agencies and conservation partners to perpetuate the species.

INTRODUCTION

This is the third 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 2013 reporting year, ranging from July 1, 2012 to March 31, 2014, depending on state accounting systems.

The Inventory is broken into 3 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 (Figures 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 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. Acres are only counted once across the 4 categories.

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), and >1 time within Farm Bill category among organizations and agencies (e.g., within Missouri, Quail Forever and US Department of Agriculture might have worked on the same acres and both claimed work on this acre).

Does existence of habitat management mean that wild bobwhites can be expected under a particular program's physical locations? Not necessarily. Inventory protocol for coordinators is 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 6 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 2013 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. Other constraints affect participation in the Inventory. Tennessee Wildlife Resources Agency is implementing a new quail plan in 2013 with increased capacity to capture habitat management. North Carolina Wildlife Resources Commission measures acres of usable quail habitat, but not annual acres of habitat management.

RESULTS

For 2013, 21 state agency coordinators reported 2,667,148 acres of bobwhite habitat management, a 65% increase from 2012 acreage of 1.616 million acres and 48% above 1.806 million acres reported in 2011. The number of participating states for 2013, 2012 and 2011 was 21, 22 and 19, respectively.

Management in 2013 included 825,349 acres on state wildlife agency publicly-owned lands (State Agency Public Land Management, Figure 1), 307,281 acres on private lands through state wildlife agency efforts (State Agency-Based Private Land Management, Figure 2), 743,813 acres on private lands through the USDA Farm Bill (Private Land US Department of Agriculture Farm Bill, Figure 3), and 790,705 acres on public and private lands not reported in Figures 1-3, categorized as miscellaneous lands (Miscellaneous land, Figure 4).

Across all 4 land categories acreage for the 21 reporting states was as follows: 167,700 (AL), 128,901 (AR), 1,589 (DE), 261,729 (FL), 423,077 (GA), 19,175 (IA), 30,906 (IL), 19,314 (IN), 607,068 (KS), 13,874 (KY), 10,479 (LA), 4,425 (MD), 370,079 (MO), 18,050 (MS), 70,542 (NE), 7,581 (NJ), 164,967 (OK), 72,998 (SC), 220,036 (TX) and 54,657 (VA).

For 2013, a major decline in Farm Bill enrollment, and subsequently acreage of management, was offset by increases in other categories, particularly Agency Public Lands and Agency-Based Private Lands. Increased management in 2013 likely reflects recovery from the management-depressing effects of the 2012 drought.

Across the NBCI range and among single programs, opportunity for quail habitat management continues to be led by provisions of the US Department of Agriculture Farm Bill, with 28%, 743,813 acres of the total 2.667 million acres. Other leading contributions were identified for Tall Timbers Research Station and Land Conservancy in Florida and Georgia, 543,052 acres, and the US Forest Service in Alabama and South Carolina, 140,773 acres.

Considering contributions to quail habitat management within individual states, the Inventory was relatively high for the USDA Farm Bill in Kansas (524,288 acres) and Oklahoma (83,310 acres), for Tall Timbers Research Station and Land Conservancy in Georgia (379,547 acres) and Florida (163,505 acres), for State Agency work on private lands in Arkansas (116,411 acres) and Texas (98,276 acres), for State Agency Public lands in Missouri (264,178 acres) and Florida (97,559), and for US Forest Service in Alabama (113,400 acres).

State Agency Public Land Management

For 2013 management of state wildlife agency public lands, 20 state agencies reported 825,349 acres of bobwhite habitat management (Figure 1), an 80% increase over 0.46 million acres reported in 2012 and in 2011. State coordinator acreage reports (state, coordinator confidence) included the following: 53,000 (AL, moderately confident), 12,490 (AR, somewhat uncertain), 133 (DE, moderately confident), 97,559 (FL, moderately confident), 17,780 (GA, moderately confident), 8,553 (IA, moderately confident), 29,382 (IL, very uncertain), 4,221 (IN, very confident), 78,072 (KS, somewhat confident), 9,360 (KY, somewhat uncertain), 1,500 (LA, very confident), 2,080 (MD, neutral), 264,178 (MO, moderately confident), 7,250 (MS, very confident), 42,380 (NE, somewhat confident), 3,075 (NJ, moderately confident), 81,000 (OK, somewhat confident), 43,780 (SC, moderately confident), 68,786 (TX, somewhat confident) and 770 (VA, moderately confident).

State Agency-Based Private Land Management

For 2013 on private lands where management was based on state agency work, and not a part of the Farm Bill, 19 state agencies reported 307,281 acres of bobwhite habitat management (Figure 2), an 198% increase over 103,063 acres in 2012 and 124% greater than 137,309 acres in 2011. State coordinator acreage reports (state, coordinator confidence)



included the following: 1,300 (AL, moderately confident), 116,411 (AR, somewhat uncertain), 230 (DE, moderately confident), 665 (FL, somewhat confident), 12,550 (GA, very confident), 5,911 (IA, moderately confident), 1,524 (IL, very uncertain), 1,164 (IN, moderately confident), 4,708 (KS, moderately confident), 4,159 (KY, somewhat uncertain), 2,839 (LA, moderately confident), 570 (MD, moderately confident), 14,855 (MO, very confident), 9,700 (MS, very confident), 28,162 (NE, somewhat confident), 2,800 (NJ, moderately confident), 602 (OK, moderately confident), 98,276 (TX, moderately confident) and 855 (VA, moderately confident).

Private Land US Department of Agriculture Farm Bill

For 2013 on private lands where management was based on USDA Farm Bill programs, 12 state agencies reported on 22 programs, practices and management delivered by partners, for a total 743,813 acres of bobwhite habitat management (Figure 3). Quail-friendly management via the Farm Bill program continued its decline from 959,064 and 1,207,957 acres reported in 2012 and 2011, respectively, a result of the 2012 drought and increasing crop value/declining Farm Bill program enrollment. The decline from 2011 to 2013 was 38%.

State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 326 acres (DE, delivered by NRCS, moderately uncertain), 4,711 (IA, delivered by PE, moderately confident), 2,713 (IN, CCRP, moderately confident), 6,562 (IN, SAFE, very confident), 62 (IN, CP33, very confident), 4,592 (IN, CRP, somewhat confident), 13,929 (IN combined CCRP, SAFE, CP33, CRP), 241,520 (KS, EQIP, somewhat confident), 146,152 (KS, CRP, somewhat confident), 130,708 (KS, MCM, moderately uncertain), 5,908 (KS, CCRP, moderately confident), 524,288 (KS combined, EQIP, CRP, MCM, CCRP), 6,140 (LA, NRCS, moderately confident), 1,775 (MD, Farm Bill, neutral), 16,850 (MO, delivered by QF, very confident), 3,433 (MO, delivered by MDC, somewhat confident), 28,193 (MO, delivered by USDA, moderately confident), 48,476 (MO combined, QF, MDC, USDA), 700 (MS, NRCS Longleaf allocation, very confident), 400 (MS, CRP, very confident), 1,100 (MS combined, Longleaf, CRP), 1,156 (NJ, GRP, moderately confident), 550 (NJ, CRP, moderately confident), 1,706 (NJ combined, GRP, CRP), 83,310 (OK, Farm Bill, somewhat confident), 52,974 (TX, Farm Bill, moderately confident) and 5,078 acres (VA, EQIP, somewhat confident).

Among states, Kansas reported by far the most quail-friendly management through USDA Farm Bill programs, followed by Oklahoma, Texas and Missouri. Although general CRP acreage has declined considerably, states have worked with the USDA to increase focus on bobwhites and other wildlife in remaining practices. The USDA Wildlife Habitat Incentive Program (WHIP) was discontinued and not reported in this year's Inventory, however, wildlife projects are now part of EQIP.

Miscellaneous Land

For 2013, 9 state agencies reported on 12 public and private land programs that contribute to quail management, for a total of 790,705 acres (Figure 4). The 2013 Miscellaneous land category builds on last year's report by including Legacy Landscapes where habitat management is tracked annually (e.g., Table 1, 2013 State of the Bobwhite Report). On the other hand, total acreage of habitat as reported in 2013 for Legacy Landscapes will not be a regular part of the NBCI Inventory.

State coordinator acreage reports (state, program/practice/delivery, coordinator confidence rating) included the following: 113,400 (AL, USFS, moderately confident), 890 (DE, Delaware Wildlands, very confident), 10 (DE, The Nature Conservancy, very confident), 163,505 (FL, Tall Timbers Research Station and Land Conservancy, very confident), 379,547 (GA, Tall Timbers Research Station and Land Conservancy, very confident), 13,200 (GA, Jones Ecological Research Center at Ichuaway, very confident), 355 (KY, Shaker Village, very confident), 42,570 (MO, Quail and Upland Wildlife Federation, moderately confident), 56 (OK, Oklahoma Partners for Wildlife, moderately confident), 27,373 (SC, US Forest Service, moderately confident), 1,845 (SC, South Carolina Forestry Commission, moderately confident) and 47,954 (VA, US Forest Service and Department of Defense, somewhat confident).

CONCLUSION

In the third 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 or 100,000 acres, there is potential for bobwhites to benefit, and partners are being recognized in a national forum.



Major news in 2013, in both the Inventory and State Conservation Reports, is a rebound in amount of bobwhite habitat management compared to droughty 2012, a clear indication of the resolve of state wildlife agencies and conservation partners to perpetuate the species.

Despite increased habitat management, near record low bobwhite populations and hunting were reported by many states, partly a result of recent severe weather. Although bobwhite populations have the capacity for rapid recovery from severe weather, because of intensive land-use (e.g., CRP conversion to crop land) and advancing plant succession the trend has been for bobwhites to become extirpated at local, and some cases, large portions of some states. Habitat fragmentation reduces the potential for bobwhites to move into some Inventory habitats, and in worst case scenarios, uncertainty about wild bobwhite distribution at state-wide scales, in Pennsylvania and West Virginia, precluded participation in the Inventory because bobwhites are likely not available for re-population. For areas where bobwhite exist, but are sparse, re-population could take several years.

Frequent or prolonged severe weather reduces state coordinator confidence in potential benefits of habitat management, forcing hard decisions about whether or not to include some habitat management in the NBCI Inventory. Data collected by state wildlife agencies and partners—hunter surveys, small- and large-scale bobwhite monitoring and research, NBCI Focal Area monitoring, USGS North American Breeding Bird Survey—provide essential information for coordinators to interpret the extent to which bobwhites are recovering. According to many state conservation reports and social media, improved weather points to a potential multi-year bobwhite population up-tick—this could provide the latest benchmark on the trajectory of bobwhite populations.

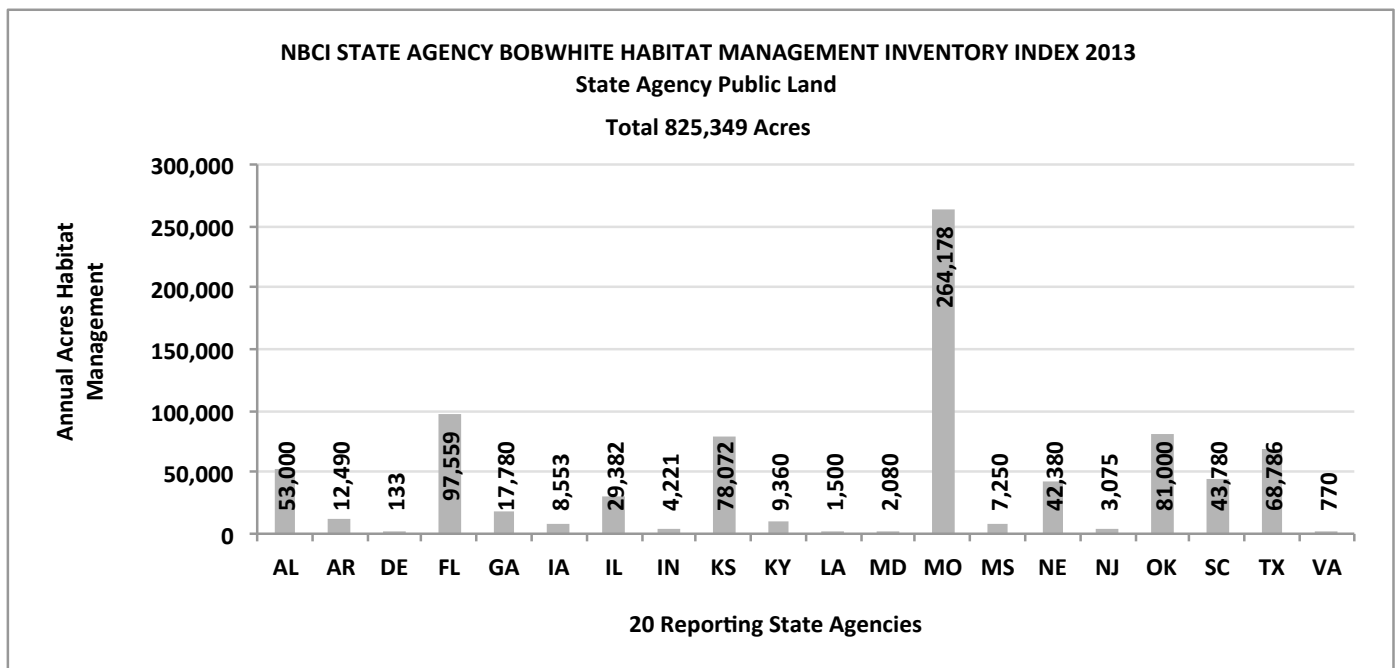


Figure 1. NBCI State Agency Bobwhite Habitat Management Index for 20 state public land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2012 to March 31, 2014). Multiple management treatments on any one acre can be counted >1 time per reporting year (e.g., burning, spraying and planting 1 acre in same year equals 3 acres of habitat management).

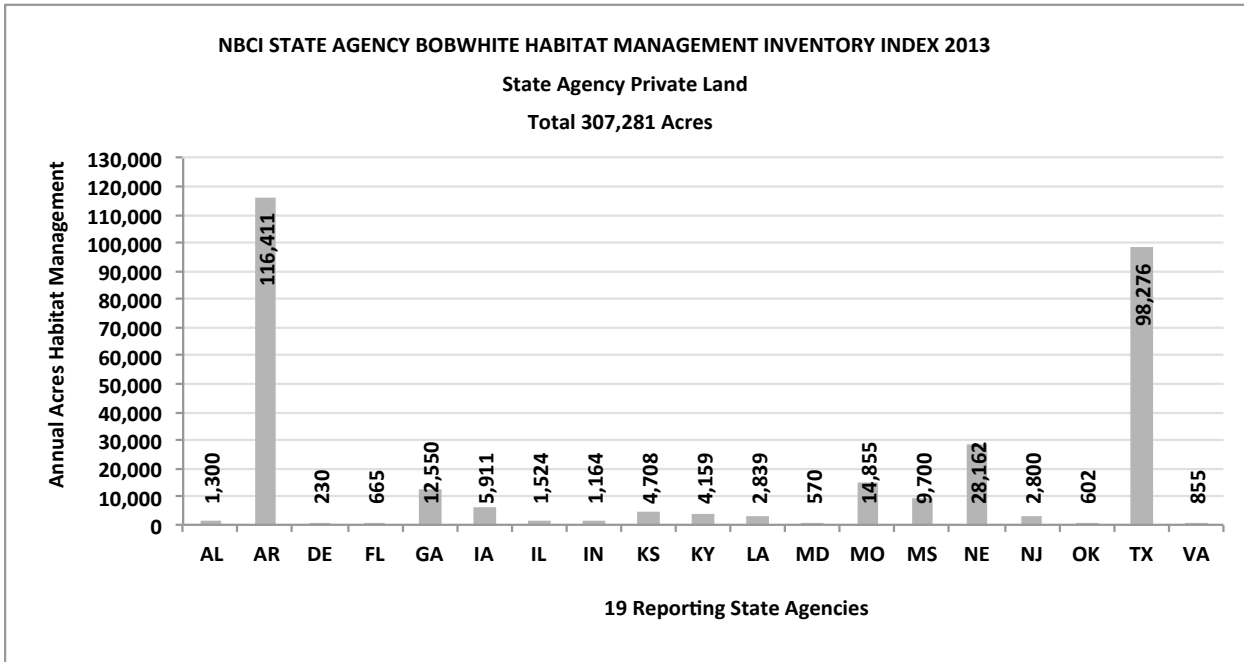


Figure 2. NBCI State Agency Bobwhite Habitat Management Index for 19 state private land programs. Index is acres of habitat managed by prescribed fire, disking, grazing, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2012 to March 31, 2014). Multiple management treatments on any one acre can be counted >1 time per year (e.g., burning, spraying and planting 1 acre in same year equals 3 acres of habitat management).

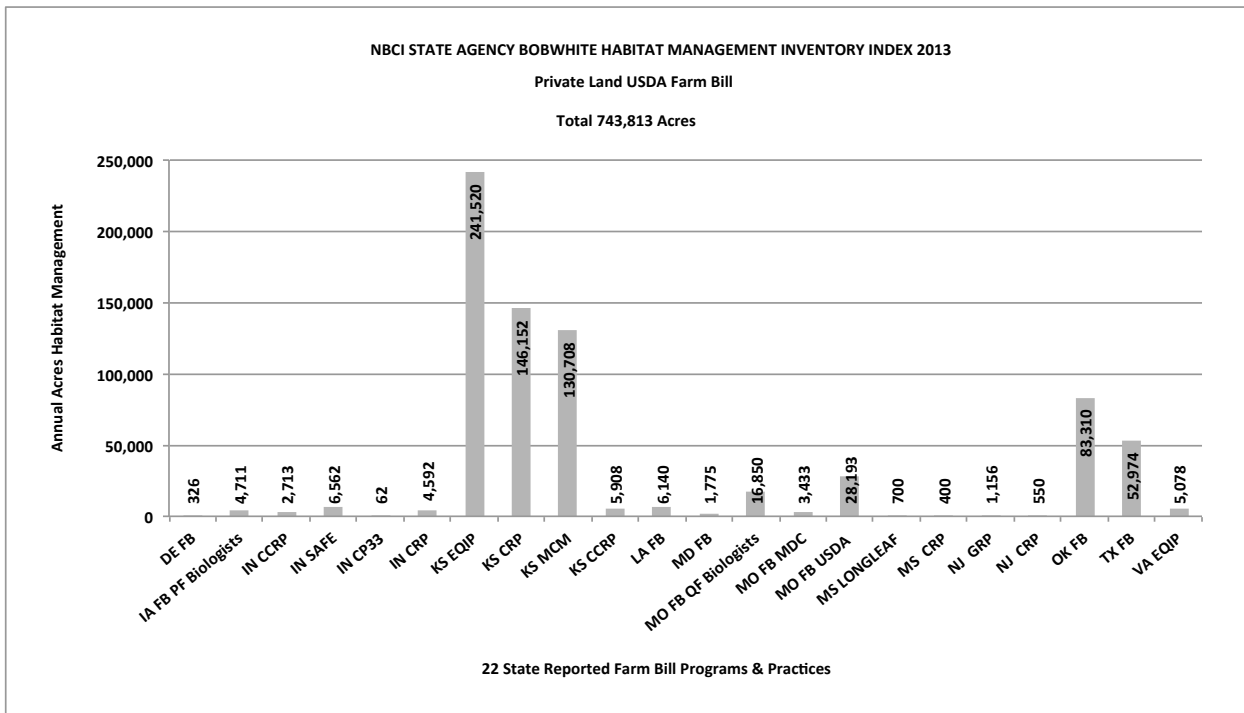


Figure 3. NBCI State Agency Bobwhite Habitat Management Index for 22 US Department of Agriculture Farm Bill funded programs. Index is acres of habitat managed by prescribed fire, disking, spraying herbicide, cutting, planting, etc., during the reporting year (ranging from July 1, 2012 to December 31, 2013). Multiple management treatments on any one acre can be counted >1 time per year (e.g., burning, spraying and planting 1 acre in same year equals 3 acres of habitat management). Similarly, there could be overlap among partner programs within a state. 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 Conservation), QF Biologists (Quail Forever) and USDA (US Department of Agriculture), PF Biologists-Pheasants Forever delivered and SAFE-Conservation Reserve Program State Acres For Wildlife Enhancement (CP-38).

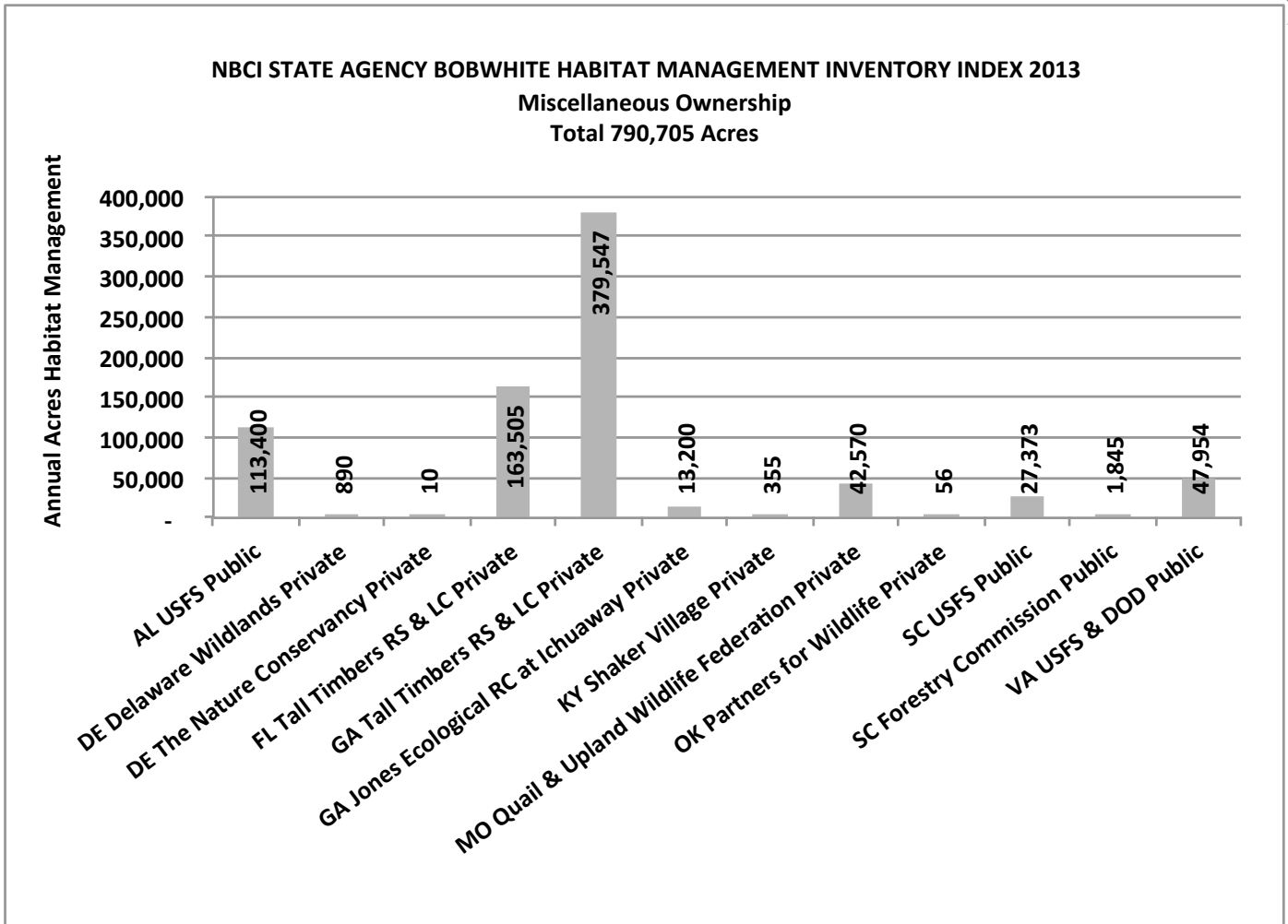


Figure 4. NBCI State Agency Bobwhite Habitat Management Index for miscellaneous public and private lands. Acronyms: DOD (US Department of Defense), LC (Land Conservancy), RC (Research Center), RS (Research Station) and USFS (US Forest Service).



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
NFWF – National Fish and Wildlife Foundation
NGO – Non-Governmental Organization
USDA NRCS – Natural Resources Conservation Service
SAFE – State Acres for Wildlife Enhancement, CP38
USDA – United States Department of Agriculture
VPA-HIP – Voluntary Public Access and Habitat Incentive Program
WHIP – Wildlife Habitat Incentive Program
WMA – Wildlife Management Area