Managing CRP fields increases bobwhite numbers, Illinois study shows

Managed U.S. Department of Agriculture (USDA) Conservation Reserve Program (CRP) fields had more use by bobwhites and other grassland songbirds during the breeding season than nonmanaged fields, according to a Southern Illinois University (SIU) study.

The study found that more than 93 percent of the original CRP plantings in Illinois were seeded to exotic cool-season grasses, primarily tall fescue. Low bobwhite abundance and poor brood rearing conditions in Illinois have been linked to a high percentage of fields planted to fescue.

The study did not establish a link between northern bobwhite abundance and the amount of CRP acreage.

"It appears that the decline in bobwhite numbers is not correlated with the amount of CRP, but it may be related to the quality of these grass stands," says Dr. Donald Sparling, Associate Director of the Cooperative Wildlife Research Laboratory at SIU.

The SIU study evaluated the effectiveness of three commonly used farm management practices to increase bird use, improve habitat conditions for bobwhites, increase arthropod availability, and increase foraging efficiency of imprinted bobwhite chicks.

Thirty fields were treated—10 with strip disking and 20 with a strip herbicide application of glyphosate and ammonium sulfate—in October 2005 to 2006. Ten select herbicide sprayed strips were then drill planted with 87 percent Korean lespedeza and 13 percent partridge pea in April 2006 to 2007.

"We expected to see an increase in the use of managed fields by bobwhite broods and select grassland songbirds during the breeding season due to a predicted increase in arthropod abundance and more desirable early successional vegetation conditions," says graduate student Douglas Osborne.

The herbicide treatments were relatively effective at decreasing exotic grass cover, but disking was ineffective at decreasing grass cover and increasing bare ground for more than one growing season.

"Bobwhite abundance in sprayed and spray/seed fields was nearly six-fold greater compared to disked and untreated fields in 2006 and 2007," Sparling says.

"In general, imprinted bobwhites consumed more arthropods in spray and seeded fields than any other treatment type."

Avian relative abundance and species richness responded positively with all three treatments during the first 2 years of the study, but species diversity decreased across all treatment types from 2006 to 2007.

"We believe CRP management has the potential to create more desirable habitat conditions for quail and other grassland birds," Sparling says, "but the effectiveness of CRP management depends on the acceptance and cooperation of landowners."

The results add to the science available on bobwhites, says Dr. Wes Burger of Mississippi State University (MSU), who coordinated 11 studies across the quail range, and Ed Hackett, a biologist with the USDA Natural Resources Conservation Service (NRCS) Agricultural Wildlife Conservation Center (AWCC), which funded the study.

The AWCC, located in Madison, Mississippi, is a fish and wildlife technology development center.

NRCS photo by Lynn Betts

Northern bobwhite hen on the nest

Summary of:

One in a series of summaries from the NRCS Bobwhite Restoration Project, Agricultural Wildlife Conservation Center Project # 68–7482–3–121

For more information, see:

USDA/NRCS Bobwhite Restoration Project online at
http://www.cfr.msstate.edu/nbci

Ed Hackett
NRCS AWCC
Phone: (601) 607-3131
E-mail: ed.hackett@ms.usda.gov
Web site: http://www.whmi.nrcs.usda.gov

For more information on this summary, contact:

Dr. Wes Burger
MSU
Phone: (662) 325-8782
E-mail: wburger@cfr.msstate.edu