
Northern bobwhite chicks survive better in restored habitat, Arkansas study shows

Research in Arkansas comparing unrestored fescue fields with areas restored for bobwhite quail brood use discovered mixed results.

“We looked at two restored areas and two adjacent unrestored areas in Searcy and Fulton Counties in Arkansas between spring of 2005 and summer of 2007,” says Dr. Chris Kellner of Arkansas Tech University. “We found that the habitats used by broods did not differ between restored areas and nonrestored areas.”

“We also found that chicks grew substantially faster in nonrestored areas, where arthropod biomass was significantly greater than in the restored areas,” says Dr. James Bednarz of Arkansas State University. “We also found that chicks moved more slowly in unrestored areas, which may indicate better habitat for foraging.”

On the other hand, researchers also found bobwhite chicks that used restored habitat in Fulton County survived better than chicks that used unrestored areas in both Searcy and Fulton Counties.

Management activities for restoration included burning, disking, eradication of fescue with herbicides, planting native warm-season grasses, fencing borders of pastures, and land clearing.

Quail followed with radiotelemetry

Researchers captured 90 bobwhites and fitted them with transmitters to locate nests and follow broods. All chicks were individually marked; missing chicks were assumed to have died. Broods were monitored intensively to assess habitat use and movement patterns.

Habitats that bobwhite broods used were characterized, and comparisons were made among habitat used by broods, nesting habitat, and random

locations that researchers assumed were not used by bobwhite broods. Nesting habitat in fescue fields consisted of dense stands of tall fescue with little bare ground and few forbs. Habitat that broods used supported more forbs, shorter and not particularly dense grass with more open ground.

Researchers also developed a discriminant function model to determine how effective the management activity was in producing nesting and brood rearing habitat. “We found the best management included activities that created some bare ground, promoted development of forbs, and also supported a variety of grass species,” Kellner says. “For example, a combination of disking, burning, fescue eradication, and planting of native grasses produced a habitat structure that was similar to habitats used by bobwhite broods.”

However, broods in Searcy County seldom used restored habitat, even when such habitat was adjacent to the brood’s home range. Quail tended to leave managed areas at the beginning of the breeding season and seldom returned.

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 U.S. Department of Agriculture (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

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For more information, see:

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

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