Quadruple northern bobwhite numbers with buffers that connect block habitats

Research in Mississippi by Iowa State University (ISU) and Mississippi State University (MSU) shows a cumulative positive effect for quail from applying buffers that connect larger blocks of grassland habitat.

Researchers compared quail and songbird populations in strips of switchgrass to filter strips planted to a more diverse mixture of Indiangrass, big bluestem, little bluestem, and other grasses and forbs. They also studied responses to various filter strip widths.

"Farms with buffers alone supported twice as many quail as nearby conventional farms," says Dr. Wes Burger, professor and principal investigator for the project at MSU. "We found a farm with buffers and blocks supported four times as many. The study also found that narrow buffers were better than no buffers at all, and wide buffers were better than narrow buffers."

They also confirmed that more diverse plantings produced a greater diversity of birds.

"We use nesting survival as an indication of the habitat quality for the wildlife species that are inhabiting these particular habitat treatments," says Ross Conover of ISU.

"The conservation buffers had lower nesting survival than early successional block habitat, but it's important to note here that we witnessed approximately 30 percent nesting survival in our conservation buffer habitats."

As shown in other studies, buffer widths make a difference for quail and songbirds. "When we compared 90-foot-wide buffers to 120- and 180-foot-wide buffers, we found the wider buffers increased nesting density," Conover says.

"The bottom line here is increased width and diversity of conservation buffers is going to drastically increase the overall wildlife benefit received from those buffers."

And, when filter strips are combined on a farm with larger blocks of habitat, even more wildlife gains can be made, especially for quail.

"We've seen that in wide open agricultural landscapes in the Delta, we expect about one covey per 125 acres in the fall. In landscapes where buffers are implemented, we can double that population to about one covey per 70 acres. And on a landscape where comprehensive conservation is implemented across the property, we can produce about one covey per 29 acres. So buffers double the population, comprehensive conservation across the property doubles it again," Burger says.

Burger was somewhat surprised at how quickly the buffers were colonized by grassland species like dickcissel and bobwhite. "It's amazing when you go into an agricultural landscape and you create a little bit of habitat by installing upland habitat buffers, how quickly they respond," Burger says.

The results add to the science available on bobwhites, says Burger, 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 (NRCD) Agricultural Wildlife Conservation Center (AWCC), which funded the study. The AWCC, located in Madison, Mississippi, is a fish and wildlife technology development center.

NRCS photos by Lynn Betts

Block habitats (*top*); Buffer connecting block habitat (*bottom*)

Summary of:

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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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