Field border size and shape make a difference for northern bobwhite

A North Carolina State University (NCSU) study found that quail populations may be increased in agricultural landscapes with relatively little amounts of land dedicated to early successional habitat.

The study of linear and block field borders on 24 farms found that quail populations almost doubled on farms where 2 to 3 percent of the cropland edge was allowed to go fallow. It also found that blocks of fallow habitat (1/4 acre to 6 acres in size) produced twice the number of quail as narrow (10-foot wide) linear field borders.

"We were trying to come up with ways to fine tune the practice of field borders so that we can be more efficient in the way we put field borders on the landscape," says Dr. Christopher Moorman, associate professor at NCSU.

In North Carolina and in the Southeast, many of the plants that naturally volunteer on fallowed ground provide exceptional cover and food for quail, so researchers felt there was no need to do any special planting in the field borders to get a quail response.

"We create field borders by allowing croplands to go fallow, and once you abandon them, they come back in native grasses, a diversity of herbaceous plants like goldenrod and sometimes a mixture of shrubs," Moorman explains.

The study lasted for 3 years, beginning in 2004, which was a pretreatment year. Moorman and graduate student Jason Riddle sampled summer quail populations through point counts from mid-May through the end of June and then returned to all the farms in October and November and listened for coveys.

"I was surprised that we were able to see the dramatic quail increase that we did on farms in agriculture-dominated landscapes and farms with nonlinear borders, with as little as 2 to 3 percent of the total row crop area converted to field borders," Riddle says.

Ideally, the researchers say field borders would comprise 5 to 10 percent of the landscape. However, block habitats increased quail numbers by 30 percent even in areas that were not connected to other habitats.

"If you wanted to design your field borders in a way that best benefits quail, you'd want block habitats of fallow vegetation in landscapes dominated by cropland," Moorman says.

"This is a simple thing farmers can do at very low expense, and they can have maybe double the number of quail they had before they implemented this practice," he adds, "and that's a big contribution to quail populations if applied over a very large area."

Although their 24 research sites were conducted in southeastern North Carolina, Moorman and Riddle feel confident that the results will apply to much of the quail range, especially the Southeast where agricultural crop production dominates.

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

NRCS photos by Lynn Betts

Block field border (*top*); Linear field border (*bottom*)

Summary of:

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For more information on wildlife conservation technology, contact:

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