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# More pheasants in landscapes with large CRP blocks, computer model predicts

Simulated pheasant populations are three times higher in Iowa landscapes with large U.S. Department of Agriculture (USDA) Conservation Reserve Program (CRP) blocks than in landscapes with only buffer habitats, a computer model developed by Iowa State University (ISU) shows.

Previous studies showed that although hens commonly nested in roadsides, grassed waterways, and along the margins of wetlands, the centers of large blocks of cover were especially attractive nesting sites.

Cover at the nest was residual cover from the previous year or rapidly growing cool-season vegetation. Nest success was greater among hens nesting in undisturbed cover, in blocks larger than 40 acres, and in landscapes where several similar blocks were located nearby.

Nest success averaged 62 percent in undisturbed blocks of habitat such as CRP and 45 percent in small, linear, or disturbed habitats. Nest losses occurred primarily by mammalian predators, but avian predators, farm operations, weather, and abandonment also contributed to nest losses.

A computer model was developed to show locations of each hen and brood on a geographic information system map and simulate survival and reproduction of each hen on landscapes the size of a township.

The computer compared simulated pheasant populations on a township without CRP, one with CRP buffers only, and a township with whole field CRP. Simulated populations on a buffers-only township increased slightly (5%) over the township with no CRP because of increased edge and smaller patches. Simulated populations in a township with whole field CRP increased 53 percent over a township with no CRP due to less edge and

larger patches. The model also shows pheasant populations can recover more quickly from harsh winters and wet springs if they have large blocks of grass available.

“We studied areas where the proportion of the landscape covered with perennial grassland ranges from as low as two percent, where the habitat is only along roadside ditches, to areas with more than 25 percent of grassland with many fields enrolled in CRP,” says ISU professor Dr. William Clark.

“Survival and reproduction of pheasants was reduced when winters were snowy and cold, and springs were wet and cool. After snowy winters, it took simulated pheasant populations at least 3 years to recover to previous levels in landscapes with less than 10 percent grassland. In landscapes with about 25 percent grassland the population recovered within 1 to 2 years.”

Simulated pheasant populations were only one-third as high when grassland was confined to linear buffers compared to when the landscape contained larger blocks with less linear edge along crop fields.

The study was funded by the Iowa Department of Natural Resources with financial contributions from ISU.

The NRCS Wildlife Habitat Management Institute (WHMI), (now the Agricultural Wildlife Conservation Center (AWCC), supported use of the model and produced a summary of the modeling research that was published as a Wildlife Habitat Management Note to make the information more readily available to NRCS field offices.

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



*Photo by Jeff Vanuga*

## Ring-necked pheasant

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