
Landscape surrounding grass fields important to grassland birds

The landscape surrounding a grassland field appears to play a much more important role in determining grassland bird use of a field than the type of grass or management within the field.

That is a primary conclusion of a study conducted on 13 national wildlife refuges in the Northeastern United States from Virginia to Maine.

Researchers sought to establish information about grassland bird species distribution and habitat use, determine how vegetation structure and composition affect grassland bird use, and compare warm- and cool-season grass plantings, as well as effects of fire versus mowing as management techniques.

“We found that 86 percent of the variation in bird density was explained by where the grassland field was in context with the surrounding landscape, rather than management treatments within the field,” says Laura Mitchell of the U.S. Fish and Wildlife Service (USFWS).

Birds were surveyed each year between May 15 and July 15 from 2001 to 2003.

Dominant grassland birds on refuge fields were bobolinks, grasshopper sparrows, and Savannah sparrows.

“We also found that grassland blocks in the Northeast appear to be able to provide good habitat for grassland obligate breeding birds. We found an abundance of birds and diversity in species. Evidence suggests that bird density and productivity in northeastern grasslands may be as good or better than in the Midwest,” Mitchell adds.

Of the 13 refuges studied, the best for grassland birds appeared to be the refuges in the St. Lawrence, Lower Great Lakes Plains, and Allegheny Plateau.

Other key findings:

- Planted warm-season grass fields did not attract a higher density of obligate grassland birds than cool-season grass or fallow fields.
- Mowing cool-season grass/fallow fields may have been the only treatment to increase grassland breeding bird density, but the effect was short-lived.
- Mowing cool-season fallow fields may have decreased the percentage of native plants in the fields.
- Burning increased the percentage of native grass species over time.

One year after treatment, vegetation height and density appeared relatively unchanged by all treatments.

Two years after treatment, breeding bird density may have begun to decrease in cool-season and fallow fields that were mowed and warm-season fields that were burned.

The study shows how important the surrounding landscape of a field is to breeding grassland birds and offers management insights for land managers and conservation agencies, according to Charlie Rewa, a biologist with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in Beltsville, Maryland, who facilitated the study for the NRCS.

The U.S. Geological Survey Patuxent Wildlife Research Center is conducting additional data analysis.

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Photo by Charlie Rewa, NRCS

Using prescribed fire on grass fields

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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:

Laura Mitchell
USFWS
Phone: (973) 702-7266
E-mail: laura_mitchell@fws.gov

Charlie Rewa
NRCS
Phone: (301) 504-2326
E-mail: charles.rewa@wdc.usda.gov