Decision support tools available to help plan for grassland birds

Newly developed grassland bird habitat models show that management actions incorporating both local and landscape (regional) habitat improvements have the greatest chance of success.

Developed by the University of Montana for nine grassland species within the Prairie Pothole Region of the Northern Great Plains, the models will enable managers and conservationists to establish regional strategies to implement local habitat plans for priority songbirds.

"We can use the models to produce maps that identify landscapes with the capability of attracting the highest densities of priority songbirds," says Dr. Frank Quamen, who developed the models as part of a doctoral study at the University of Montana.

"Or we can produce habitat-based maps that predict bird responses to management. For instance, we can use favorable characteristics of existing priority landscapes to reconstruct and restore fragmented landscapes in a way that we mimic those with favorable characteristics."

More than 95 percent of the 952 sites in western Minnesota and northwestern Iowa observed to develop the model were on privately owned lands. On those sites, birds were surveyed, vegetation was measured, and landscape features were quantified.

Species models were developed for bobolink, clay-colored sparrow, dickcissel, grasshopper sparrow, horned lark, LeConte's sparrow, Savannah sparrow, sedge wren, and western meadowlark.

The models allow managers to vary any of eight attributes identified as important to enhance habitat for a particular species and then see predicted densities of those species on GIS maps.

The study shows that conserving or restoring large grasslands (from 120 acres to 7,900 acres, depending on species), removing trees from the landscape, or both, will increase densities of seven of those nine species. At local scales, individual fields that vary in structure and vegetative composition are likely to attract the most diverse array of species.

The study was the first to show experimentally that grassland songbirds avoid woody edges in otherwise suitable habitat. The spring following tree removal, the four most common species redistributed themselves in the treeless grasslands.

Land managers and conservationists now have a decision support tool for grassland bird conservation across the prairie pothole region.

They can identify which landscapes are most capable of providing habitat for species of interest, then manage vegetation locally to meet that species' needs, as well as overlay the models with spatial data to evaluate the effects of U.S. Department of Agriculture (USDA) programs, notes Dr. Bill Hohman, a biologist with the USDA Natural Resources Conservation Service (NRCS) in Fort Worth, Texas. Hohman facilitated the study for the NRCS.

The study was funded cooperatively by the NRCS, the Nature Conservancy, U.S. Fish and Wildlife Service (USFWS), natural resource agencies in Minnesota and Iowa, and fish and game departments in Montana, South Dakota, and North Dakota.

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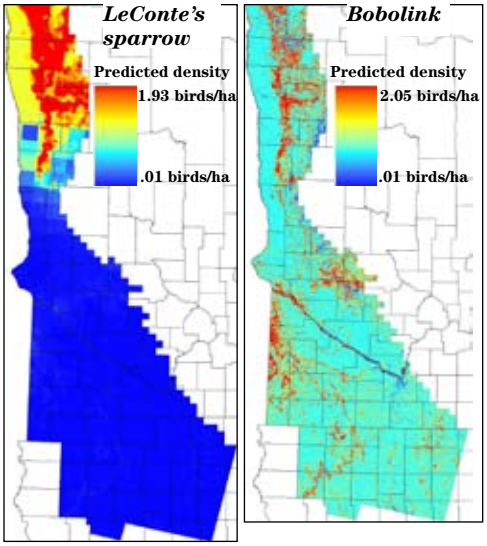

Maps above compare predicted densities for LeConte's sparrow (*left*) and bobolink (*right*)

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