

Forest Plan Monitoring: Innovation Underway

Monitoring Multiple Avian Species Across Regions

Overview

The Integrated Monitoring in Bird Conservation Regions (IMBCR) program was created in 2008 in response to national recommendations for improving avian monitoring. Recommendations included integrating monitoring into management and conservation practices, coordinating monitoring among organizations and across spatial scales, improving the statistical design of monitoring programs, and maintaining the monitoring data in a modern data management system (US North American Bird Conservation Initiative 2007). Today, the IMBCR program is the second largest breeding bird monitoring program in the nation, spanning the Great Plains to the Intermountain West (Fig. 1).

Ingredients for Success

The strength of the IMBCR program lies in its partnership with multiple agencies and nonprofit organizations. Monitoring resources are pooled among the partners in a spatially balanced, probabilistic framework. This promotes a more efficient use of resources and allows for inference to multiple scales, from a forest district up to a Forest Service Region (Pavlacky et al. 2017). The sampling frames within Bird Conservation Regions can be stratified differently depending on the needs of partners. Lastly, because the program is stratified based on fixed attributes and boundaries, populations can be monitored over time to evaluate avian responses to landscape and climate change.

Lessons Learned

Several challenges occur when developing and maintaining a multi-regional monitoring program. First, maintaining the partnership and the needs of multiple collaborators is a balancing act that requires regular communication, dedicated staff, flexibility for fluctuating budgets, and consistent protocols. Second, when data are collected by multiple biologists and organizations, ensuring data quality is critical. Standardized field methods and datasheets, required field training and calibration for everyone collecting data, and a rigorous QA/QC protocol following each field season all help ensure quality data.

Recent Steps

IMBCR recently expanded in the Intermountain West, primarily on BLM lands in Nevada, California, and Oregon. The expansion provides near-complete coverage of the sagebrush ecosystem and allows for inference about songbird populations in this imperiled system. Bird Conservancy recently developed Bayesian analyses to provide avian trend estimates at multiple scales, which highlight species of concern across forests and regions.

The Bayesian framework also allows for density estimates by primary habitat type, which is useful for informing project-level planning.

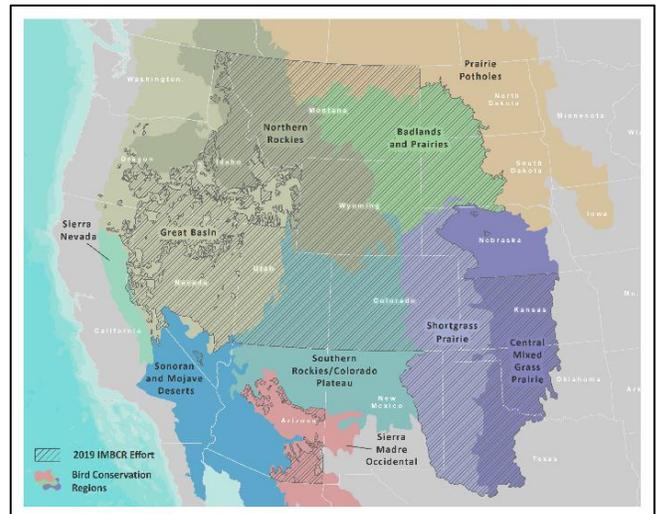


Figure 1. Extent of the Integrated Monitoring in Bird Conservation Regions (IMBCR) program as of 2019.

For More Information, Contact

Jennifer Timmer, 970-482-1707 x25
jennifer.timmer@birdconservancy.org

Literature Cited

Pavlacky, D. C., Jr., P. M. Lukacs, J. A. Blakesley, R. C. Skorkowsky, D. S. Klute, and B. A. Hahn. 2017. A statistically rigorous sampling design to integrate avian monitoring and management within Bird Conservation Regions. *PLoS ONE* 12(10): e0185924.

US North American Bird Conservation Initiative. 2007. *Opportunities for improving avian monitoring*. Arlington, Virginia, USA: Division of Migratory Bird Management, U.S. Fish and Wildlife Service.