



In 2007 the North American Bird Conservation Initiative (NACBI) released the report, “Opportunities for Improving Avian Monitoring” (US North American Bird Conservation Initiative 2007); which outlined goals and recommendations to further improve avian monitoring programs. With these recommendations in mind, bird conservation partners from across much of the western United States collaborated in 2008 to implement a new broad-scale all-lands monitoring program entitled “Integrated Monitoring in Bird Conservation Regions” (IMBCR).

Today, the IMBCR program represents one of the largest bird monitoring programs in the United States. The strength of the IMBCR program is based in its broad partnership support, spanning 15 states and 35 partners¹ (Fig.1).

The foundation for an effective monitoring program is rigorous data collection and the value of an effective monitoring program lies in its ability to inform conservation and management actions. **The NACBI Monitoring subcommittee (US North American Bird Conservation Initiative 2007) identified several conservation objectives, outlined below, that the IMBCR program has been designed to achieve:**



Figure 1. Scope of the IMBCR program in 2017-8

1. Determine status and trends

- Under the IMBCR program densities, population sizes and occupancy rates are estimated at local, regional, state and BCR scales for over 175 species. The program is well suited for estimating densities and occupancy rates for landbird species. These estimates satisfy the mandate to monitoring wildlife populations for many public land management agencies.
- IMBCR data will be used to compare estimates across years and estimate trends in population densities and occupancy for these species at multiple spatial scales.

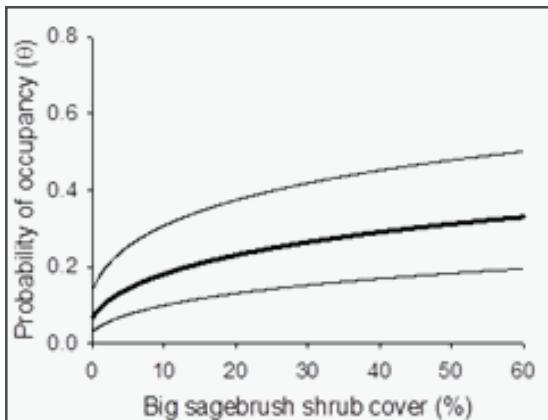


Figure 2. Sagebrush Cover

2. Inform management and policies to achieve conservation

- Density and occupancy estimates can be compared across space to determine how local estimates vary among strata. This is helpful to determine if local estimates are above or below estimates for the region.
- Population estimates can be used to focus conservation efforts. For example, strata with large populations can be identified as population strongholds and strata with low populations can be prioritized for conservation action.
- Estimates can trigger conservation action when populations reach a predetermined level.
- Habitat models can (Fig. 2) provide information to guide conservation and management. IMBCR bird and field-collected vegetation data can be used to determine preferred local habitat conditions to inform managers on “what to do” when managing habitat.
- Landcover and other spatial data can be paired with bird occupancy data to develop models that predict species’ distribution (Fig. 3). These models can aid in landscape planning by identifying areas to conserve and areas for management action.

Conservation objectives (continued):

3. Determine causes of population change

Process variables can be investigated for correlations with changes in bird populations.

- IMBCR data will be paired with information on spruce-beetle occurrence to find correlations with beetles and bird populations.
- Bird data have been associated with development features (i.e., roads and wells) to investigate bird response to these changes to the landscape.

4. Evaluate conservation efforts

Local density and occupancy estimates for treatment areas can be compared to regional estimates to evaluate effectiveness of management actions.

- IMBCR data have been used to explore the impact of Tamarisk removal on riparian bird communities on BLM lands.
- IMBCR data are being used to investigate grassland songbird response to NRCS Lesser Prairie-Chicken management.

5. Set population objectives and priorities

- Population estimates can be used to inform population goals and identify species requiring additional management.
- Predictive distribution maps (Fig. 3) can be used to prioritize the location of management efforts.

6. Inform conservation design

- IMBCR data provide a source for the development of decision support tools (DST) to help land managers and resource professionals address conservation issues.
- The IMBCR partnership has developed a DST to assist in the management of the sagebrush bird community. The DST combines species distribution maps and bird-habitat relationships to guide management in order to optimize grazing utility, sagebrush-obligate songbird occupancy, and Greater Sage-grouse habitat.

Program Summary:

Through a broad partnership, the IMBCR program provides a platform for consistent and accurate data collection. Data are pooled during analyses to provide more precise estimates for a greater number of species than individual monitoring efforts. IMBCR data are applied to meet numerous conservation applications, ensuring that the program is informing conservation and land management at multiple scales while maximizing the impact of each conservation dollar spent at multiple scales.

Partners (* indicates implementation partner)

¹Arizona Game and Fish Department*, Audubon New Mexico*, Audubon Rockies, Colorado Parks and Wildlife, Colorado State Land Board, Great Basin Bird Observatory*, Great Northern Landscape Conservation Cooperative, Great Plains Landscape Conservation Cooperative, Intermountain Bird Observatory*, Intermountain West Joint Venture, Kansas Department of Wildlife and Parks, Montana Fish, Wildlife and Parks, National Fish and Wildlife Foundation, National Park Service, Natural Resource Conservation Service, Nebraska Game and Parks Commission, New Mexico Game and Fish, North Dakota Game and Fish Department, Northern Great Plains Joint Venture, Oklahoma Department of Wildlife Conservation, Playa Lakes Joint Venture, South Dakota Game, Fish and Parks, Texas Parks and Wildlife, The Dolores River Restoration Partnership, The Tamarisk Coalition, United States Bureau of Land Management, United States Department of Defense*, United States Farm Service Agency, United States Fish and Wildlife Service, United States Forest Service, University of Montana Bird Ecology Lab*, Utah Division of Wildlife Resources*, World Wildlife Fund, Wyoming Game and Fish Department*, Wyoming Natural Diversity Database*

Literature Cited: US North American Bird Conservation Initiative (2007). Opportunities for improving avian monitoring. U.S. North American bird conservation initiative report. Arlington, Virginia, USA, Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

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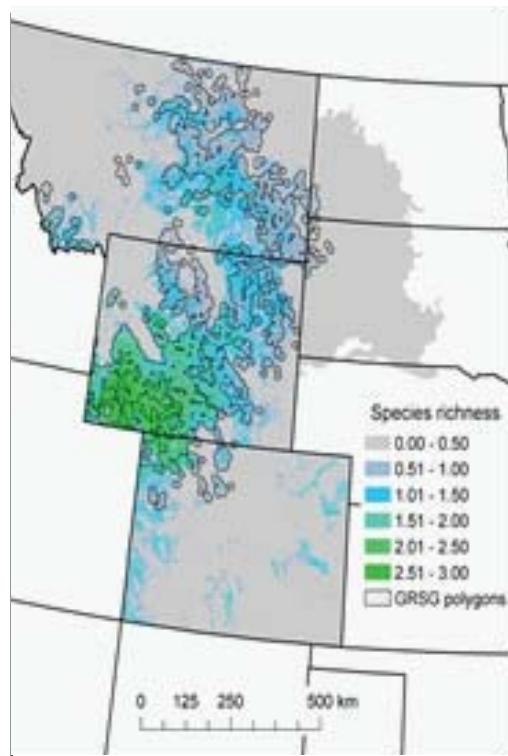


Figure 3. Predictive distribution map showing species richness of Brewer's Sparrow, Sagebrush Sparrow, and Sage Thrasher. Areas where all three species are likely to occur are shown in green.