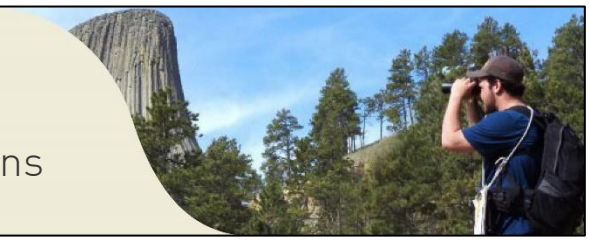
Bird Conservancy of the Rockies

IMBCR:

Frequently Asked Questions

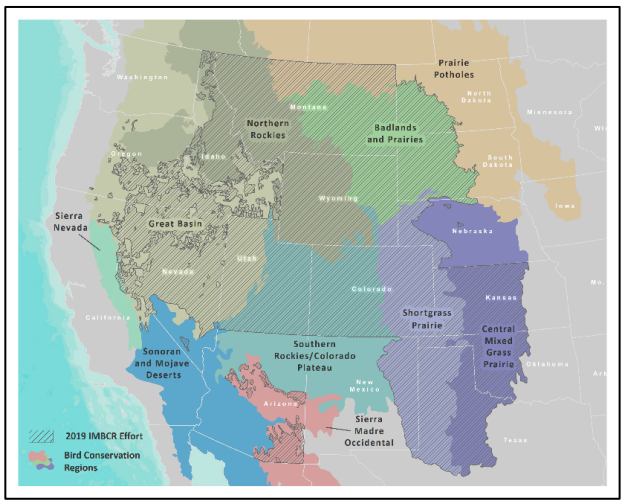


What is IMBCR?

IMBCR stands for Integrated Monitoring in Bird Conservation Regions. The program was created to address large-scale declines of avian populations and the need for extensive and rigorous landbird monitoring. IMBCR operates as a partnership with multiple federal and state agencies and NGO's who contribute funding for monitoring.

What is IMBCR's temporal and spatial extent?

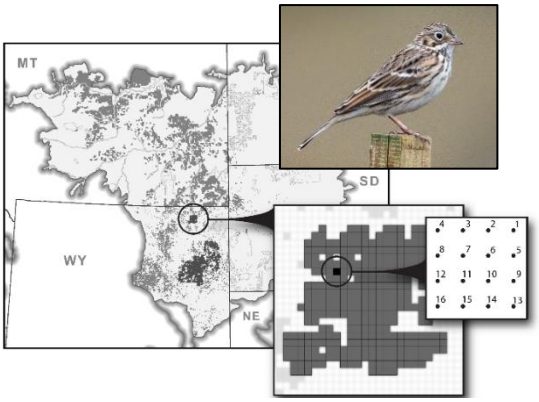
IMBCR began in Colorado in 2008 and has since expanded across the Great Plains to the Intermountain West. It is now the second largest bird monitoring program in the country, encompassing Colorado, Montana, Utah, Wyoming, and portions of 12 other states.



IMBCR survey extent as of 2019.

How are the data collected?

Every spring, dozens of observers skilled in bird ID are trained on IMBCR protocol and sent into the field to collect data at random survey sites. Each survey consists of visiting a 1-km^2 grid, which contains 16 evenly spaced point count stations. At each point, ocular vegetation estimates are recorded, like average shrub cover and height. An observer then records all birds detected within a 6-min interval, including the distance to each bird. These methods allow us to estimate the proportion of birds present but not detected at a survey (i.e., detection probability).



Example sampling frame for the Badlands and Prairies Bird Conservation Region with 1-km^2 grids and example grid containing 16 point count stations.

Do you survey on private land too?

Yes, IMBCR is an all-lands monitoring program. Our landowner liaison researches ownership for each survey site and contacts landowners requesting permission for access. We only survey approved survey sites. All landowner information is stored in a secure database to maintain anonymity. See Landowner FAQ's for additional information.

What are Bird Conservation Regions?

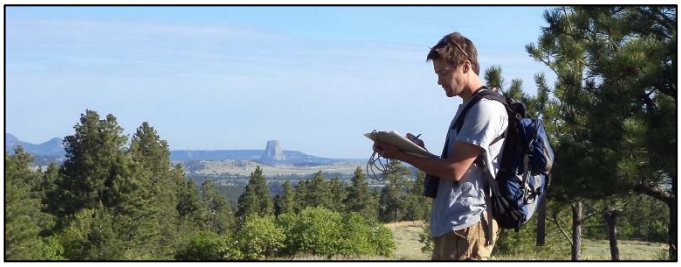
Bird Conservation Regions (BCRs) represent ecologically distinct plant and bird communities and form the basis for IMBCR's sampling design. Within a sampling frame, all lands are available for sampling and all vegetation types are included, so we can make inference about bird populations across private and public lands and all habitats.

How are sampling frames stratified?

Within BCRs, strata are created based on fixed attributes, such as state borders or management unit boundaries. Stratification is determined by IMBCR funding partners based on areas to which they wish to make inference. With a hierarchical sampling design, we can estimate bird population size within a smaller management unit (e.g., National Forest) up to a state or even larger region. Because of spatially balanced random grid selection, partners can adjust monitoring efforts while maintaining spatial coverage of a stratum.

Why do we need another monitoring program when we have the Breeding Bird Survey (BBS)?
BBS data span the continental US, portions of Canada, and Mexico, and date back to the 1960's. They provide relative trend in bird populations over time and are freely available to the public. As such, BBS data are frequently used to assess regional populations.

However, BBS surveys are conducted along roads, so survey coverage may be sparse in areas with limited road access and inference about bird populations is restricted to habitats along roads. BBS data provide inference about bird populations at large scales, such as a state, but a manager cannot make inference in smaller management units. Biologists also often need estimates of population size, not just trend, to make informed decisions. Estimating population size requires accounting for birds that are present but not detected during a survey.



What results are produced with IMBCR?
Density, occupancy, and population size are estimated at a variety of scales from a National Park up to a state or BCR. Population trend is also available and includes a level of certainty about the estimate (how sure are we the population is increasing or decreasing?). These estimates are available for >250 different species including songbirds, game birds, common raptors, and some waterfowl and shorebirds.

Are IMBCR data available to the public?
Survey results and population estimates are available to the public on the Rocky Mountain Avian Data Center. General survey locations are included, but zoom capability is restricted to protect private landowner privacy. Funding partners have access to all data. IMBCR data are available to those outside of the IMBCR Partnership upon request and approval of a data sharing agreement. Contact Bird Conservancy for a data request form.

How do we evaluate management actions with the monitoring data? Biologists and land managers often need to determine the effectiveness of management decisions. Overlay projects are one way to evaluate the impact of management actions (or natural disturbances) on bird populations. Overlays use the same IMBCR field methods and sample selection, but they are conducted over a subset of the IMBCR sampling effort. We then compare population estimates within overlay project areas to local or regional estimates.

What are some examples of how the data have been used? Data from the IMBCR program have been used for a variety of purposes. Basic occurrence information is added to natural heritage databases and used in NEPA reports for project planning. State-wide estimates help inform Species of Greatest Conservation Need in state wildlife action plans. Modeling vegetation and monitoring data has informed species' responses to conservation and management efforts. Through overlay projects and additional analyses, partners have asked specific questions about landuse impacts on birds. For example, birds were monitored inside and outside a natural gas development area to determine the impact on sagebrush-obligate species and set management triggers for Wyoming BLM. Multiple partners in Colorado were interested in the impact of bark beetle infestation on forest structure and various songbird guilds at multiple scales to inform post-outbreak management.

How can I learn more?
To learn more about IMBCR, the data available for use, or how to get involved, please contact Jennifer Timmer (jennifer.timmer@birdconservancy.org, 970-482-1707 x25). Check out the IMBCR website for additional information as well!

Bird Conservancy of the Rockies