

Songbird Research Program



BRI's Songbird Program works across local and global scales to protect birds and the habitats they rely on. From left to right: Eastern Bluebird (*Sialia sialis*), Red-winged Blackbird (*Agelaius phoeniceus*), Varied Thrush (*Ixoreus naevius*), Crescent-chested Babbler (*Cyanoderma pyrrhops*), Southern Red Bishop (*Euplectes orix*).

Songbird Ecology and Conservation

Migratory songbirds have experienced some of the largest population declines across the animal kingdom, driven by a combination of habitat loss, climate change, contaminants, and other human-driven pressures.

Understanding how these species move across landscapes and continents, linking breeding areas, migration routes, and wintering habitats, is critical to identifying where conservation action is most needed.

At BRI, scientists study how contaminants, wind energy development, climate change, and habitat change influence songbird ecology and population dynamics. BRI's work spans New England, the United States, and into Central and South America, with a particular focus on neotropical migratory species.

Key Songbird Research Areas

Mercury Contaminants Research

BRI scientists are internationally recognized for their work studying mercury contamination in birds and ecosystems.

Using insect-eating songbirds as bioindicators, researchers track how mercury moves through terrestrial and aquatic food webs and how exposure affects bird health and reproduction.

BRI's research directly supports the Minamata Convention on Mercury, a global treaty aimed at protecting human health and the environment.

BRI's songbird contaminant research includes:

- Monitoring contaminant concentrations (mercury, PFAS) in songbirds across habitats and regions
- Evaluating effects of mercury exposure on bird health and reproduction
- Tracking long-term trends in mercury contamination
- Informing environmental policy and conservation decisions

Songbird Research Expertise

- ✓ Migration and movement ecology studies
- ✓ Bird banding and capture-based monitoring
- ✓ Bird inventory surveys
- ✓ Autonomous Recording Unit (ARU) deployment and call analysis
- ✓ Tracking technologies including geolocators and radio telemetry
- ✓ Contaminant monitoring using songbirds as ecological indicators
- ✓ Population monitoring and long-term ecological datasets
- ✓ Habitat use and migratory connectivity studies
- ✓ Data analysis and ecological modeling
- ✓ Collaborative research with universities, conservation organizations, and government agencies

River Point Bird Observatory Research

At BRI's River Point Bird Observatory in West Falmouth, Maine, scientists conduct long-term monitoring of migratory and breeding birds through banding and field research.

River Point provides important data on bird populations, movement patterns, and habitat use, helping researchers better understand the health and status of migratory bird populations in southern Maine.



At River Point Bird Observatory, BRI scientists are deploying Motus tags to track Northern Waterthrush (*Parkesia noveboracensis*) migration.

Swainson's Thrush Migration Study



BRI scientists collaborated with partners at Denali National Park to track the migration of Swainson's Thrush, a long-distance migratory songbird that breeds in Alaska and winters in South America. Using light-level geolocators and GPS loggers, researchers documented the migration routes, timing, and wintering locations of individual birds for the first time.

Tagged thrushes began their southbound migration in late August, traveled across western and central Canada, and reached wintering areas in Argentina and Bolivia by mid-November, completing a round-trip journey of more than 11,000 km. The study highlights the importance of forest habitats across North, Central, and South America that support migratory songbirds throughout their annual cycle.

Population and Movement Studies of Black Rosy-finches



The Black Rosy-finch is a high-elevation obligate species and one of the least studied birds in North America. Because these birds breed exclusively in fragile alpine environments—relying on snowfields for foraging and cliff crevices for nesting—they are uniquely vulnerable to habitat changes driven by climate change. Our scientists survey remote mountain ranges in Northwestern Wyoming to document unknown breeding sites and evaluate residency patterns.

By utilizing spring banding and color-coding during migration, biologists aim to identify site fidelity and discover undocumented wintering grounds. The data from this project will be used to develop long-term monitoring protocols and inform conservation decision-making.

South Dakota Biodiversity Surveys

In partnership with South Dakota State University, BRI biologists conducted biodiversity surveys across grasslands in South Dakota and Wyoming. The project aims to quantify the ecological and agroeconomic impact of climate-smart practices and interventions on beef and bison production in the Great Plains.

Autonomous recording units (ARUs) were deployed to monitor bird communities, with Western Meadowlark, Grasshopper Sparrow, and Red-winged Blackbird among the most frequently detected species. These surveys establish baseline data on grassland bird populations, helping researchers understand how land management practices affect bird communities and overall rangeland health.



To learn more about BRI's songbird work, scan the QR code or visit:
www.briwildlife.org



For more information, contact:

Edward Jenkins, M.S.
Songbird Program Director
edward.jenkins@briwildlife.org

Lauren diBiccari; B.A.
River Point Banding Station Manager
lauren.dibiccari@briwildlife.org