Assessing and Monitoring Threatened and Endangered Species

BRI has a strong team of expert wildlife biologists with expertise researching and monitoring wildlife, including species listed under the Endangered Species Act (ESA). We conduct a range of survey types including baseline presence/absence, distribution and abundance, home range, telemetry, and acoustics. We have a proven history working with large-scale landowners, such as the U.S. Department of Defense (DOD), private consultants, and state and federal natural resource agencies, to develop and conduct wildlife studies related to ESA and National Environmental Policy Act (NEPA) compliance. Our capabilities range from study planning and management to field work, data management, statistical analyses, and reporting.

BRI’s field capabilities include:

- **Wildlife Studies**
  - We maintain state and federal permits for handling a wide variety of avian and bat species, including state and federally listed species
  - BRI boat captains are National Association of State Boating Law certified
  - Aerial, boat, and snowmobile telemetry tracking of wildlife
  - Threatened and Endangered species surveys and inventories
  - Development of habitat conservation plans
  - Mercury assessments and compliance monitoring of a variety of species
  - Endangered Species Act compliance studies

- **Mammals**
  - Acoustic surveys of bats from deployment of field equipment to manual vetting of data for threatened and endangered species
  - Furbearer tracking studies
  - Canada Lynx winter tracking surveys
  - Bat hibernacula surveys and bat tracking studies
  - Bat compliance surveys via acoustics/netting
  - Small mammal surveys (bog lemmings, shrews, and voles)

- **Birds**
  - Aerial and boat-based surveys for waterfowl, wading birds, shorebirds, and marine birds
  - Capture and sampling of avian species, including songbirds, raptors, waterfowl, and seabirds as bioindicators of mercury and other contaminants

- **Fisheries**
  - Fish telemetry studies (radio-tagging, tracking)
  - Spawning surveys
  - Fish sampling (electrofishing, seining, trap netting, fish weirs, etc.)
  - Sampling of fish for mercury and other contaminants using agency-certified field and lab techniques
  - Tributary access surveys
  - Mussel surveys

- **Other Wildlife**
  - Wood turtle tracking studies
  - Pollinator surveys for bees and butterflies
BRI’s reputation and integrity are founded on the quality of our work. Throughout every stage of the scientific process—from data collection, to analysis, interpretation, and dissemination—we follow strict protocols and adhere to best practices to provide decision makers with the most accurate information.

Data Collection
In the Field
In the Lab

Data Management, GIS, and Ecological Modeling
BRI experts achieve the highest quality in data preparation and standardization, ensuring quality control of data processing and management. We have the expertise to perform the following:

- Design and develop ecological databases, including databases in PostgreSQL, R, and ArcGIS
- Create custom Python and R scripts for mapping and analysis
- Integrate data into existing web portals and develop custom online web mapping capabilities
- Analyze and model spatial data using PostgreSQL, ArcGIS, R, BUGS, JAGS, NIMBLE, and others
- Conduct multivariate, hierarchical, spatial models in likelihood-based and Bayesian frameworks
- Create spatially explicit individual-based models
- Conduct population modeling and population viability analysis
- Conduct movement and behavioral modeling

Published Results

Model Outputs
Assess Biases
Make Predictions

Published Results

Data Analysis

Stakeholder and Desktop Processes

- Facilitate workshops to establish scientific consensus
- Facilitate communication between state and federal agency staff to establish permitting goals and processes
- Elicit expert knowledge through surveys and interviews
- Conduct literature reviews to inform stakeholders about current research

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p. 2: Bird in hand; BRI Lab; Peregrine Falcon © BRI-staff.