

# BIODIVERSITY RESEARCH INSTITUTE

innovative wildlife science worldwide



bri

Understanding ecological health through the lens of wildlife

# stretching the boundaries of knowledge and understanding

BRI's mission is to conduct scientific investigations to better understand ecological health through the lens of wildlife. If the air, water, and landscape are healthy, wildlife and humans share in that vitality. A dedication to the principles of conservation biology directs our daily work and long-term vision.

## critical research at a critical time

Building on a scientific foundation of field observation, natural history traditions, and hypothesis testing, BRI's research interests and capabilities have grown in response to emerging ecological issues—from measuring effects of contaminants in indicator species to informing the siting of marine wind facilities. The development and application of advanced technologies is a hallmark of our scientific approach. To better facilitate our studies, BRI has evolved into three research centers:

- Center for Mercury Studies
- Center for Waterbird Studies
- Center for Ecology and Conservation Research

## a global approach

BRI's experienced team of scientists and educators works across the globe—from Arctic tundra to tropical rainforest, temperate mountains to ocean depths—to explore and understand the intricacies of these ecosystems. Every project we undertake is designed to advance scientific research, which in turn helps create awareness, engage the public, inform policy and management decisions, and ultimately build local capacity.

## a depth and breadth of scientific expertise

BRI's reputation and integrity are founded on the quality of our work, which includes field research, veterinary services, two laboratory facilities, advanced analytical methodologies, and science communications. Throughout every stage of the scientific process—from data collection to analysis, interpretation, and dissemination—we follow strict protocols and adhere to best scientific practices to provide decision makers with the most accurate information.

*Right:* Researchers sample a Common Loon, an important bioindicator of ecosystem health.



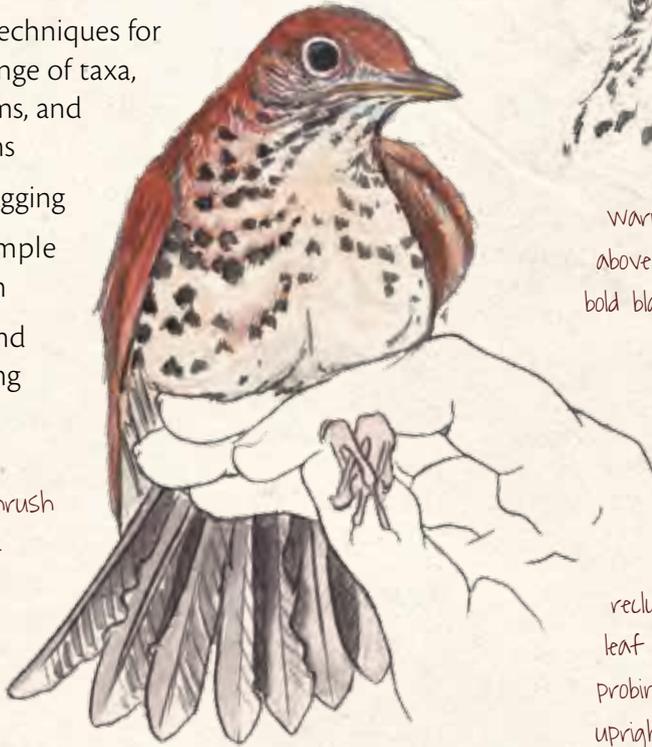


# from the Arctic to the Tropics

Biodiversity Research Institute (BRI) conducts innovative wildlife science around the world to understand how ecological stressors (chemical, biological, and physical) affect different species and their habitats.

BRI biologists are experts in:

- capture techniques for a wide range of taxa, ecosystems, and conditions
- wildlife tagging
- tissue sample collection
- surveys and monitoring



Wood Thrush  
adult



warm reddish brown  
above and white with  
bold black spots on their  
underparts

reclusive - hops through  
leaf litter on forest floor  
probing for insects, bobbing  
upright between spurts of  
digging and leaf turning



## avian research supplies

BRI, the agent for the Association of Field Ornithologists' supply company Avian Research Supplies, provides quality mist nets including Avinet nets, bird banding tools, and other field supplies.





Northern Gannet—large waterbird; adults white, juveniles dark



## veterinary services

BRI's wildlife veterinarians work at the interface of wildlife, human, and ecological health to study the effects of global environmental change on these interrelationships. We specialize in the following:

- safe and humane capture and handling of wildlife
- chemical immobilization of wildlife
- best practices for sample handling and storage
- health assessment of captured animals
- training for field staff
- mobile surgical capabilities

## laboratory analysis

BRI operates two research labs at our Maine headquarters:

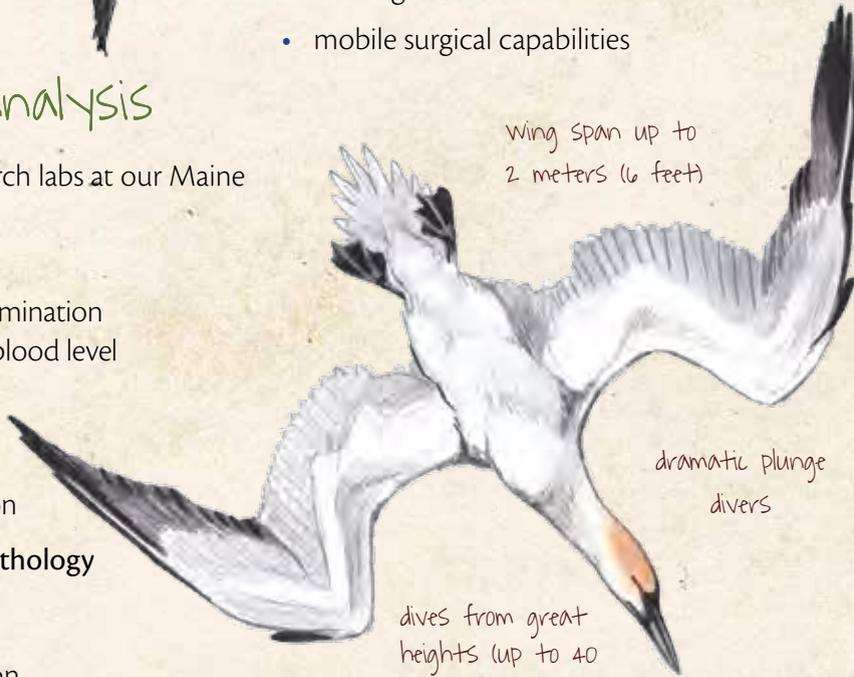
### Wildlife Toxicology

- total mercury determination
- lead ingestion and blood level determination
- tissue moisture determination
- tissue homogenation

### Wildlife Health and Pathology

- necropsies
- hematology
- parasite examination

Wing span up to 2 meters (6 feet)



dramatic plunge divers

dives from great heights (up to 40 meters—130 feet)





hatch year Cooper's Hawk

juveniles have brown back feathers; upper breast creamy white streaked with brown



measuring culmen; other measurements: wing chord, hallux length, weight, tarsus width

stretching boundaries to solve complex problems

Many of BRI's projects require sophisticated analytical tools and integrated methods to answer multilayered questions that would be impossible to address with any single method. We have consciously cultivated the expertise and resources needed to develop innovative study designs, achieve more precise analysis, and maintain objective and informative interpretation.

### BRI wildlife permits

- Nearly 100 state, federal, and special-use research permits for wildlife across the U.S. and Canada
- Specialized permits for endangered bats; adult eagle capture and sampling; and educational purposes
- Import permits for bird tissues from more than 40 countries

Member: Institutional Animal Care and Use Committee (IACUC) at the University of Southern Maine



northern long-eared bat with radio tag





# informing policy and resource management

Important environmental decisions depend on our ability to gather accurate data from different perspectives, synthesize that information, and offer viable solutions. BRI strives to build partnerships across North America and globally to achieve research study goals. We collaborate with federal agencies, state and provincial governments, colleges and universities, NGOs and foundations, private landowners, and industry.



Long-tailed Duck

winter plumage  
gray face patch  
surrounding eyes  
pink band on bill

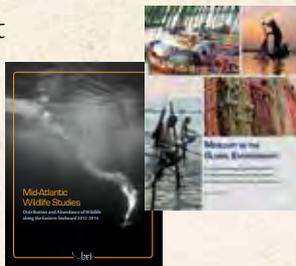
can dive to 60 meters (200 feet) from water's surface

breeds in the Arctic and winters along both coasts of North America and the Great Lakes

## Science Communications

Dedicated to providing unbiased scientific information to policymakers and resource managers, we translate our published findings into succinct, clear language, engaging readers through the use of wildlife photography and infographics that convey complex scientific concepts. Our outreach materials serve as a foundation for:

- policy development workshops
- legislative hearings
- press conferences
- public events



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