



Date: June 30, 2011

Judith Swift
Coastal Institute
Narragansett Bay Campus
University of Rhode Island
Narragansett, RI 02882

Dear Ms. Swift,

Biodiversity Research Institute (BRI) is asking for consideration to join the North Atlantic Coast Cooperative Ecosystems Studies Unit. BRI is a non-profit science organization with offices located in Gorham, Maine. Our mission is to assess emerging threats to wildlife and ecosystems through collaborative research, and to use scientific findings to advance environmental awareness and inform decision makers.

BRI was founded in 1998 and has grown substantially over the years to more than 50 full-time employees. Collectively, we have expertise encompassing a wide biogeographic scope and deep breadth of scientific work. Over the years, we have focused on contaminants and pollutants, wildlife habitat assessment, and developing bioindicators to monitor contaminant exposure.

The majority of our work is collaborative, either with other non-profit groups, government agencies, or universities within the Atlantic coastal region. By working collectively, it allows BRI to share knowledge and exchange data. Through these associations, we are able to bring together new perspectives and work to solve relevant and pressing environmental issues facing the Northeast and Atlantic coast regions.

As a non-profit organization, we would bring both a different perspective to NAC CESU, along with high caliber and robust science. I have attached our application to join the NAC CESU, which further explains BRI's mission and our expertise, as well as how we can contribute to NAC CESU's mission and vision. You will also find additional supplemental material highlighting selected relevant reports and manuscripts and examples illustrating our work translating science into non-technical work.

Please review the enclosed application and supplemental material for consideration into NAC CESU. If additional information is needed, please contact myself directly at 207-887-7160 ext. 217.

Sincerely,

Madeline Turnquist
-enclosure-



Application to join the North Atlantic Coast Cooperative Ecosystems Studies Unit

Who we are

Biodiversity Research Institute (BRI) is non-profit science organization with offices located in Gorham, Maine. With a full-time staff of more than 50 employees, 10 research programs, and two centers of excellence, BRI conducts innovative wildlife science throughout the northeastern United States, nationally, and internationally to fill data gaps for managers and policy makers. BRI strives to make its research relatable and accessible to the public by not only publishing our work in leading scientific journals but also in general media outlets such as the *Associated Press* and *The New York Times*. Our reports are also posted on our website, along with science blogs and wildlife webcams to educate and engage the public about our research and mission.

Our mission

Our mission is to assess emerging threats to wildlife and ecosystems through collaborative research, and to use scientific findings to advance environmental awareness and inform decision makers.

The expertise our agency can contribute to the NAC CESU consortium

BRI has a wide range of expertise, specifically in conducting independent peer-reviewed science. Our expertise spans from environmental toxins to wildlife movements to habitat use. Our programs cover a wide range of taxa and ecological systems including: Raptor, Waterfowl, Wetlands, Marine Bird, Coastal Bird, Migratory Bird, Mammal, Tropical, Wildlife Health Assessment, and Wildlife and Renewable Energy. BRI also has two centers of excellence—The Center for Mercury Studies and the International Center for Loon Conservation and Research— where we conduct long-term and in-depth studies. Additionally, BRI's outreach, communication, and data management programs ensure that we are able to effectively communicate our science results to decision makers, scientific colleagues, and the public.

Our mercury studies are interdisciplinary and span numerous taxonomic groups including fish, birds, reptiles, and mammals. This work focuses on identifying and developing biotic indicators for environmental health and identifying areas of elevated mercury pollution. A majority of our research is conducted in collaboration with universities, federal and state agencies, and NGOs such as the Gulf of Maine Seabird working group, USFWS Gulf of Maine Program, and the Northeast Regional Migration Monitoring Network.

We have conducted extensive work on various species along the coast in the north Atlantic region. Our mammal program is monitoring the Acadia National Park bat populations to explore dynamics within the population as well as assess mercury contamination. BRI is one of the only groups directly capturing bats in Maine; we have captured more than 500 bats including little brown bats, northern long-eared bats and eastern small-footed bats. We are also able to examine a variety of bat detection methodologies by coupling our captures with acoustic call surveys.

Our raptor program has been conducting extensive survey and contaminant monitoring along the Maine coast for the last five years. BRI's research has included osprey and bald eagle mercury and organic contaminant assessments, osprey productivity analysis in Casco Bay, northern saw-whet owl and falcon fall migration studies, and peregrine falcon satellite tracking. Additionally, our wetlands program has been conducting multiyear studies on mercury levels in saltmarsh and Nelson's sparrows from Maine to Long Island; BRI has worked in Rachel Carson, Parker River, Ninigret, McKinney, and Wertheim National Wildlife Refuges. BRI will likely conduct songbird and bat mercury studies at Forsythe National Wildlife Refuge as a reference site within a USFWS NOAA NRDA project. Furthermore, we are conducting a willet geolocator study at Rachel Carson and Parker River National Wildlife Refuges to link migratory pathways with mercury exposure. Within the Gulf of Maine, BRI has evaluated 17 marine foraging birds for mercury levels as well as estuarine, beach, and marine birds for legacy and emerging contaminants. With our

contaminant work, BRI has worked on the North Cape Oil Spill, Bouchard Bay Oil Spill, and most recently, the Deepwater Horizon oil spill in the Gulf of Mexico.

In addition to monitoring for contaminants, BRI is conducting songbird migration monitoring. By banding birds and monitoring their returns, we can identify immediate and long-term threats such as habitat loss and climate change. Our expertise in passerines allows us to collect and interpret data in such a way as to evaluate the effects of such threats as well as identify solutions to maintain habitat diversity.

Emerging within BRI is our expertise on renewable energy, specifically, marine wind power. One of BRI's newest programs is focused on wildlife and renewable energy. Research in this area has focused on documenting the movement patterns of resident and migratory birds, as well as collecting baseline data on the timing and intensity of migration of birds and bats. Additionally, through literature reviews, presentations, and workshops, BRI is striving to communicate to colleagues, policy makers, managers, and the public the most recent science on marine wind power potential impacts to wildlife.

Through our expertise and cooperation with state and federal partners as well as universities and NGOs, we can provide our expertise in pollution and contaminants as well as our work with numerous coastal bird species to NAC CESU and its partners. Much of our work is published in peer-reviewed journals and reports; a list of selected works can be found in the supplementary material.

The individuals in our program who we anticipate being active in NAC CESU projects

Based on our expertise and focus of projects within the Atlantic coastal region, we anticipate the following six people to be involved in collaboration with NAC CESU and its partners.

Dr. David Evers, BRI's executive director and chief scientist, is one of the leading experts on mercury in the country, studying the exposure and effects of mercury on wildlife. He has spent more than ten years studying mercury in common loons in Maine and the Atlantic coastal region. With expertise and knowledge on mercury pollution, he often presents scientific results to legislative and regulatory branches of local and federal governments. Dr. Evers currently holds adjunct professorships at the University of Southern Maine and the University of Maine at Orono, where he teaches ornithology.

Wing Goodale, BRI's deputy director, has expertise in field surveys for seabirds, songbirds, osprey, and bald eagles, as well as expertise in legacy and emerging contaminants such as PCBs, OCs, PBDEs, and PFCs. Wing is also a member of Maine's Board of Environmental Protection and the Casco Bay Estuary Partnership.

Dr. Iain Stenhouse, director of the marine bird program, studies the reproductive and behavioral ecology of pelagic seabirds. He is also working on the protection and restoration of marine bird habitats. Currently, he is examining the migration patterns of northern gannets and is also tracking the long-distance migration of Arctic terns.

Lisa Eggert is the director of the coastal bird program. She studies the reproductive ecology and conservation of coastal nesting birds. Her research is focused on the habitat use and wildlife health of marine birds. She is currently conducting research on black skimmers in South Carolina.

Oksana Lane is the wetlands program director. She studies the contamination exposure in wetland birds, including saltmarsh and Nelson's sparrows, kingfishers, and various other shorebirds. She also monitors for contaminants in estuaries using fish and aquatic organisms as bioindicators of pollution.

Chris DeSorbo, director of the raptor program, conducts extensive work on bald eagles and osprey in Maine and along the Atlantic coast. He also captures and bands peregrine falcons, as well as outfits them with satellite transmitters to document their migration routes and breeding grounds. Some of Chris' work has been conducted at Assateague Island National Shore to determine conservation efforts and assess impacts that could be threatening the populations.

How our institution can contribute to the NAC CESU mission and vision

BRI could contribute to the NAC CESU mission and vision through interdisciplinary work as well as by evaluating and identifying contaminants within the coastal ecosystem, developing biotic indicators, and developing data and information exchange.

By focusing strongly on mercury and contaminants work, we can contribute to the research mission of NAC CESU by studying various taxa in relation to pollution and its effects on wildlife. Our work is conducted in an interdisciplinary fashion and outcomes include the development of biotic indicators and timely communication of findings to inform management decisions.

BRI also works to foster data and information exchange between our current partners and to seek out new connections when necessary to fill in data gaps, which aligns with the partnership and collaboration mission of NAC CESU. With these partnerships, BRI has developed MercNet, a national mercury monitoring effort that includes a large collaborative network tracking mercury in air, water, land, fish, and wildlife. This includes mercury data from across the United States and serves as a central location for the data and information exchange. This data is accessible with geospatial reference information as well. Through MercNet and our expertise, BRI is able to provide data analysis and map construction in particular on mercury and contaminants across the northeast and nationally.

A major component of BRI's mission is to translate science to inform the public and policy makers. Specifically, BRI's *Mercury Connections* report (see supplemental material) concisely synthesized 21 scholarly papers on mercury in the northeast ecosystems. *Mercury Connections* is an example of how BRI translates our interdisciplinary collaborative science efforts to enhance the understanding of science to complement existing information. This synthesis and our ability to manage and analyze extensive amounts of data, gives us the ability to meet NAC CESU's mission on technical assistance. Through *Mercury Connections*, we were able to effectively communicate the latest scientific findings on mercury to state and federal policy makers as well as the national media. The report aided in congressional briefings, and was featured in national media outlets such as *National Public Radio*, *Washington Post*, and *The Boston Globe*.

BRI can also contribute to NAC CESU's cooperative education mission through our internship program. BRI currently is providing high school, college, and graduate students opportunities for hands-on learning experiences to help them develop skills such as mist netting, data management, bird survey techniques, and effective communication. In addition to our internship program, three BRI staff, Dr. David Evers, Dr. Iain Stenhouse, and Dr. Jim Paruk, are adjunct professors at the University of Southern Maine.

With our knowledge and resources on mercury pollution, BRI can contribute to the NAC CESU mission and vision by using our collaborative efforts in producing high quality science in order to reach resource managers and policy makers.

The NAC CESU point of contact within our agency

BRI is appointing Madeline Turnquist to serve as the NAC CESU point of contact within BRI. Her contact information is as follows: e-mail: madeline.turnquist@briloon.org, phone: 01-207-887-7160 ext. 217, fax: 207-887-7164, and mailing address: 652 Main Street, Gorham, ME 04038. Additional information about BRI, our mission, and research projects can be found at our website (<http://www.briloon.org>).

Supplemental Material

BRI's Annual Report - 2011

Mercury Connections

Selected Report List