



2008 Acadia National Park Research Grants Awarded

L.L. Bean Acadia Research Fellowships

Schoodic Research Fellowships

Thanks to the generous support of L.L. Bean, Inc. and Acadia Partners for Science and Learning, a total of seven Research Fellowships totaling \$35,000 have been awarded in 2008 that will address important science issues at Acadia National Park. The National Park Service faces a number of increasingly complex issues that threaten the integrity of natural ecosystems, cultural resources, and visitor experiences at Acadia National Park. The successful management and protection of the park's resources and values depends upon scientifically credible and timely answers to important questions. Through the L.L. Bean Acadia Research Fellowship and Schoodic Research Fellowship programs, researchers are helping the National Park Service meet its stewardship responsibilities. Summaries of the 2008 funded studies are listed below.

Chris DeSorbo, Christian Niven and Charles Todd, BioDiversity Research Institute and Maine Department of Inland Fisheries and Wildlife. “**Inventory of Resident Woodland Raptors in Acadia National Park.**” This study will gather baseline data about the distribution and relative abundance of forest raptors residing in the park. Target species include Cooper's Hawk, Northern Goshawk, Sharp-shinned Hawk, Merlin, Red-shouldered Hawk, Broad-winged Hawk, and Red-Tailed Hawk. Information about the bird's territories, nest sites, and habitat preferences will also be collected. In addition, the investigators will provide park managers with site-specific recommendations to protect nesting raptors and devise a strategy and schedule for future monitoring.

Jeffrey Johansen, John Carroll University. “**Diatom Flora of the Freshwater Habitats of Acadia National Park.**” This study will facilitate one of the first surveys of freshwater algal flora in the park. These species are critical for the management of wetland systems as they are excellent indicators of water quality. The principal investigator and his students will sample major streams, wetlands, and lakes within the park on Mount Desert Island and the Schoodic Peninsula. Products from this study will include a geo-referenced list of algal genera, permanent diatom slides for the park's museum collection that represent what was found during the study, and a report containing illustrations of the recorded diatom flora.

Franklin Price, East Carolina University and Bernard, Maine. “**Acadia Maritime Cultural Resource Inventory.**” This study will develop a Geographic Information System (GIS) database and historical summary about what vessels wrecked near or in Acadia National Park. Through research of historic records and interviews with fisherman and divers, the investigator and his students will gather information about the possible location of submerged maritime historic sites. This historical and archeological information will be used to develop a sensitivity model for the National Park Service that will assist in better predicting the potential presence of maritime cultural resources.

Colleen Teerling, Maine Forest Service. “**Evaluating the Risk of Emerald Ash Borer Infestations in Acadia National Park.**” Emerald Ash Borer (EAB) is an exotic insect pest that attacks and completely kills all species and ages of ash trees. Although it has not yet been found in Maine, it has spread rapidly since first being discovered in Michigan in 2002. Much of this movement has been caused by people inadvertently transporting firewood (containing the insect) from infected to un-infected areas. This study will survey campers at park and private campgrounds on Mount Desert Island to determine if they have brought along firewood from locations outside of Maine. This research will provide an indication of the risk of an EAB (and other serious firewood-borne pest)

introduction at Acadia National Park. In addition, the investigators will survey the campgrounds for the presence of a native solitary wasp that feeds on beetles, including EAB. The colonies will be mapped and recorded in a database, and once located, monitored for the presence of EAB. Any colonies found will be monitored in subsequent years.

Bryan Windmiller and Glen Mittelhauser, Hyla Ecological Services, Inc. and Maine Natural History Observatory. “Historical Changes in Freshwater Insect Communities of Acadia National Park.”

This study will inventory pond, lake, marsh, and vernal pool habitats to determine the current distribution, habitat associations and relative abundance of three freshwater insect taxa: predaceous diving beetles, whirligig beetles, and backswimmers. Results of this study will be compared with the results of William H. Procter’s 1928-1944 field collection of the invertebrates of Acadia National Park, including the insects that inhabit Acadia’s freshwater wetlands to assess what changes have occurred over the last 60+ years.

Wendy Norden and Dough McNaught, University of Maine, Machias. “Distribution and Ecosystem Services of Eelgrass Habitat along the Schoodic Peninsula.” This study will collect baseline data on the current eelgrass distribution, density and reproduction along the Schoodic Peninsula and examine the associated fauna (fish and invertebrates) found in the beds, providing a better understanding of the ecosystem importance of these eelgrass habitats. At present the National Park Service has little quantitative information about these shallow subtidal habitats around Acadia National Park. These types of data are important when habitat is lost due to either chronic (seasonal turbidity) or catastrophic (oil spill) events, or when making decisions about levels of habitat protection.

Sarah Nelson, Senator George J. Mitchell Center for Environmental And Watershed Research, University of Maine. “Are we Under-Estimating Mercury Burdens in Winter Soils? A Case Study at Schoodic Peninsula, Acadia National Park.” This study will collect soil samples year-round to evaluate mercury concentrations in each season of the year, and to document mercury burdens in soils on the Schoodic Peninsula. At Acadia National Park, a seemingly pristine environment, mercury has been found at elevated levels in birds, fish, and amphibians. Long-term research on Mount Desert Island identified mercury pools and fluxes in rain, forest litter, soil, streamwater, and most recently in winter snow. Questions remain why soils collected in winter have greater mercury concentrations than soils collected during summer; this study will attempt to address that issue.