

Kristin Wilson
204 Bryand Global Sciences Center
University of Maine, Orono, ME 04469
Ph.D. Program in Ecology and Environmental Sciences
Advisor: Dr. Joseph Kelley
Office phone: (207)-581-1998
Email: kristin.wilson@umit.maine.edu

My interest in nature and the world around me started at an early age. Growing up in Cape Cod, Massachusetts, I was surrounded by astounding natural beauty and was fortunate to have parents that fostered my environmental curiosity. Importantly, I was allowed time to explore the outdoors on my own. As I grew older, I became more aware of the undercurrents of our human footprint on those beautiful scenes. I made a decision then to invest in science, and that investment has taken me on an incredible journey.

I've been fortunate to cultivate a diversity of environmental experiences by seeking out opportunities that center around strong science. I explored tropical ecology through the Duke University/Organization for Tropical Studies undergraduate study abroad program. While attending Middlebury College in Vermont, I worked with Dr. Andrea Lloyd to collect tree cores and other environmental data on a National Science Foundation-funded project in Alaska to determine the effects of changing climate on latitudinal and altitudinal tree-line. At the Cedar Creek Long-Term-Ecological Research (LTER) Station, I worked on a large-scale experiment seeking to better understand linkages between grassland productivity and diversity. Working at the Harvard Forest, another LTER site, I examined the lasting impacts of the 1938 Hurricane on forest stand dynamics, some 40+ years after the initial disturbance event. Finally, in Hawaii, I worked for the United States Geological Survey to combine historical bird count data and new geographic information systems (GIS) techniques to document population trends and patterns of habitat loss for native bird species.

In graduate school at the University of Maine, I've continued working on issues that bridge science with public policy. In 2004-2005, I was a National Science Foundation GK-12 Fellow, bringing hands-on science to more than 300 students in area middle and high schools. Interning at the Maine State Planning Office on the Bay Management Initiative taught me about balancing diverse stakeholder interests in a project exploring the potential for regional-based management of Maine's coastal resources. Work at the Penobscot East Resource Center challenges me to forge connections between scientific and fishing communities. I've also had the opportunity to contribute to marine conservation solutions for Bonaire, Netherlands Antilles, through field work comparing near-shore benthic diversity over a 25 year period from 1981-2005. In August 2006, I graduated with an M.S. in Marine Biology and an M.S. in Marine Policy from the University of Maine.

All of these experiences cemented two fundamental ideas: (1) at the core of environmental change is rigorous scientific inquiry, and (2) the impact of that inquiry is only as far-reaching as a scientist's individual commitment to effectively communicate its message.

Currently, I am a second-year Ph.D. student at the University of Maine in the Ecology and Environmental Science (EES) program working with Dr. Joe Kelley. This program emphasizes interdisciplinary research directions to gain better understanding of complex environmental issues. The program provides a unique intellectual environment that is both progressive in its design and reflective of current trends within scientific research. By stressing

collaborative, interdepartmental interactions, EES research projects generate innovative, multifaceted approaches to scientific questions. This variation in the scientific process yields more robust results than a single line of scientific inquiry alone and often produces science with strong societal implications. As a student in the program, I am consistently challenged to identify and articulate connections between fields. This task can be taxing, but it is also extremely exciting and rewarding.

Specifically, my research combines the fields of Geology, Ecology, and Spatial Information Sciences to understand processes governing surficial change in Maine salt marshes over the past 50 years. I study salt pools, shallow, continuously flooded depressions common to many north-temperate salt marsh ecosystems. Despite their widespread occurrence, we have limited knowledge of pool habitats. We understand little of their eco-physical characterization, how that characterization varies spatially, and what it might mean for the distribution and abundance of pool-dependent organisms. We know even less about the potential contribution of pools to surficial change over the past century. Some studies suggest that pools are growing and converting large portions of the vegetated salt marsh platform to open water over relatively short time periods, in response to rising sea level. My research addresses this hypothesis in the context of five salt marshes distributed along Maine's coast from Ogunquit to Lubec. I ask the following questions: Are Maine salt marshes drowning in response to rising sea level? Are pools contributing to this loss and if so, what are the spatial patterns of this loss? What might these patterns mean for facultative pool species? Finally, I question how our management strategies might change in light of my findings.