MBL Biological Discovery in Woods Hole

Office of Communications and Public Affairs

MBL
7 MBL Street
Woods Hole, MA 02543
USA

p: 508.289.7423
f: 508.289.7934
comm@mbl.edu
www.MBL.edu

PRESS RELEASE

For Immediate Release
November 3, 2011

Contact: Gina Hebert
508-289-7725; ghebert@mbl.edu

MBL and Partners Awarded $1.3 Million Grant for Climate Change Research in Falmouth Salt Marshes

MBL, WOODS HOLE, MA—The Marine Biological Laboratory (MBL) and its partners Waquoit Bay National Estuarine Research Reserve, U.S. Geological Survey (USGS), University of Rhode Island (URI), and several other organizations have been awarded a $1.3 million grant from the National Estuarine Research Reserve System (NERRS) Science Collaborative to examine carbon and nitrogen cycles in salt marshes at the Waquoit Bay National Estuarine Research Reserve in Falmouth, MA and their impact from and feedback to climate change.

During the three-year project scientists led by MBL assistant scientist Jim Tang, Kevin Kroeger from USGS, and URI's Serena Moseman-Valtierra will quantify how much greenhouse gas is stored and emitted from coastal wetlands, and how the presence of nitrogen changes this balance. Greenhouse gases, such as carbon dioxide, contribute to global warming by trapping heat in the atmosphere. While it is well known that forests store large amounts of carbon, thus reducing global warming, there is new focus on equivalent stores of so-called "Blue Carbon" in coastal ecosystems such as mangroves, sea grasses, and salt marshes.

Preliminary work by the project scientists has shown that when nitrogen is present (as it is in most coastal areas due to septic systems, fertilizer runoff, and atmospheric deposition) salt marshes actually become "sources" of greenhouse gases, rather than "sinks." This is because the nitrogen causes nitrous oxide and methane, much more potent greenhouse gases than carbon dioxide, to be emitted. Research that underscores these findings would add to the incentive for reducing the amount of nitrogen flowing into these areas.

In addition to the science, a large focus of the project will be to link the researchers with "end-users," who will apply the science to better manage the coast. Nonprofit organizations, such as Restore America's Estuaries, a consortium of a number of community-based restoration organizations, will play an essential role in "translating" the science into products that will be used by the coastal management community. Likewise, The Manomet Center for Conservation Sciences in Plymouth, MA will conduct an economic analysis of the effect that nitrogen has on the "value" of a salt marsh for storing greenhouse gases.

The MBL's Jim Tang will use recently developed laser-based technology to develop a new system for measuring greenhouse gas emissions from salt marshes directly in the field. This

novel system will dramatically improve the accuracy and frequency of greenhouse gas measurement.

“I am very excited to be part of this talented team of scientists, modelers, and ecosystem managers,” said Tang. “This grant provides an unprecedented opportunity to apply my research on carbon and nitrogen cycles to policy making and management at the local, national, and even global level.”

—###—

The Marine Biological Laboratory (MBL) is dedicated to scientific discovery and improving the human condition through research and education in biology, biomedicine, and environmental science. Founded in 1888 in Woods Hole, Massachusetts, the MBL is an independent, nonprofit corporation.