A gull at sunset, Lakeview Wildlife Management Area, eastern Lake Ontario
Photo by Katie Maitland

Coastlines

CONTENTS

SETTING THE RESEARCH AGENDA

The eastern shore of Lake Ontario is dotted with dunes, wetlands, forests, grasslands and tributaries that enter the Lake. But this beautiful and unique spot is also part of a larger ecosystem collectively referred to as the Sandy Creeks watershed. The Sandy Creeks watershed comprises four stream corridors, the escarpment of the Tug Hill Plateau, the nearshore areas of the lake and the Lake Ontario dune and bays complex. As well as being home to a variety of flora and fauna, this area is also home to numerous human residents who live in rural residential developments and small villages where agriculture, forestry, tourism and recreation make substantial contributions to the local economy.

Ecosystems like this one are so interconnected that effects on one species—including humans—are likely to cause effects on others. Says New York Sea Grant Director **Jack Mattice**, "When the New York Ocean and Great Lakes Ecosystem Conservation Act was signed into law in 2006, the intention was to shift the paradigm of coastal resource management from single species to ecosystems, using approaches known as ecosystem-based management (EBM). In so doing, EBM is a tool that helps us make decisions that ensure healthy, productive, and resilient coastal environments."

continued on page 3

Fall '07 A Publication of New York Sea Grant Vol.36/No.1

SETTING THE RESEARCH AGENDA

continued from page 1

Ecosystem-Based Management

With the signing of the Act, NYSG was asked by the NYS Department of State (DOS) to develop a list of prioritized short-term research needs for two diverse sites within the state: the Great South Bay on Long Island (LI) and the Sandy Creeks watershed, which includes the dunes and wetland complex area on the eastern end of Lake Ontario.

With funding from DOS, NYSG convened two workshops—one focusing on Sandy Creeks that took place in Syracuse and another on Great South Bay in Stony Brook—where a broad diversity of researchers used lists of information needs identified by resource managers to develop research priorities for each site. Both groups identified top priority projects aimed at describing both the current conditions and predictions of future changes.

The results identified as the three top priority research needs in Sandy Creeks watershed were: monitoring water quality, using a conceptual ecosystem model to describe how the watershed may respond to future human activities, and assessing public perception with respect to development and ecosystem impacts.

At the Great South Bay workshop, monitoring, modeling and mapping the Bay came out on top. The second priority included determining the scale necessary to do effective restoration, then implementing restoration to reclaim wetlands and/or to reduce runoff and sedimentation. Examining present and future human impacts on the Bay rounded out the top three priorities for this area.

Using the similarities in priorities for the two sites, NYSG outlined a protocol for a statewide EBM research agenda. Used in conjunction with studies from other sites in the state, these priorities can contribute to the state's overall EBM plan.

Seagrass

Great South Bay on Long Island, with its centuries of maritime heritage is perhaps best known for its productive shellfish habitat. It is also home to a large resident human population with millions more tourists enjoying swimming, boating and fishing.

Seagrasses, particularly *Zostera marina* or eelgrass, play an important role in Great South Bay as they do in many shallow underwater areas around Long Island. An eelgrass meadow can provide food and shelter for a diversity of plants and animals, stabilize sediments, and reduce the effects of currents and wave action. Eelgrass grows from the bay bottom, limiting the plant to depths where its leaves have enough light for photosynthesis. As a perennial, its older leaves die off naturally, then wash up on the beach, looking like tangled tape from an audio cassette.

Historically, there have been great fluctuations in the extent of LI's eelgrass beds. There is concern at this time that eelgrass has disappeared from some areas and restoration efforts have been limited in their success. Perhaps there are factors influencing growth and reestablishment that are not being considered.

"New York Sea Grant and a number of other groups (NYSDEC, EPA's Long Island Sound Study and Peconic Estuary Programs, the Suffolk County Marine Extension Program, and The Nature Conservancy) joined forces and developed a workshop to help improve our approach," says NYSG Assistant Director **Cornelia Schlenk**.

"We brought local experts together with seagrass scientists from other parts of the country to consider the situation and look for solutions. Can we take steps to help us most efficiently and effectively work to preserve and restore seagrass habitat? The answer is yes," continues Schlenk.

continued on page 15

ATTENTION GREAT LAKES RESEARCHERS:

Interested in partnering with others with a similar research focus?

Become a part of the Great Lakes Regional Research Information Network. Sign up today at: www.glrrin.info

nyseagrant.org

...for NYSG's full report, *Ecosystem-Based Management in New York State: Taking the Next Steps*, and to view photos of the EBM workshops

Eelgrass (*Zostera marina*) is a seed-bearing plant, not an algae, with roots and runners that anchor it to the bottom.

Photos by Chris Pickerell/Cornell Cooperative Extension Marine Program

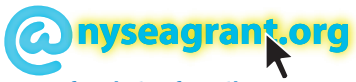
SETTING THE RESEARCH AGENDA

continued from page 3

The product of the May 2007 workshop is a list of key management, monitoring, and research projects that should facilitate and steer our efforts. The top actions in each of those categories are: establishing a working group for coordination and information sharing, monitoring the physical conditions of existing seagrass beds, and testing multiple stressors such as light and sulfide, and root penetrability of hard surfaces.

A full report from the seagrass workshop will be available by December 2007. Look for it on NYSG's Web site.

— Barbara A. Branca, Jack Mattice and Cornelia Schlenk



... for photos from the seagrass workshop and images and animations of seagrass