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News from the Urban Coast Institute

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Director's Message

By Tony MacDonald





"Clam diggers" and "Bennies" alike are drawn to New Jersey's beaches. The State encourages tourists to visit and share in the beauty of the Jersey Shore, as well as to spend a little money to boost our economy. Yet, there is no consensus about how to invest in and maintain those beaches for the future, or whether to support alternative strategies such as wetlands restoration and elevating structures that would protect communities from coastal storms.

Where we should have consensus, there are recurring conflicts between local communities, homeowners, environmental groups and the state over beach access, the proper balance of public and private rights, and the long-term benefits of beach nourishment projects. For example:

- In Harvey Cedars, debate continues on how to secure easements from local property owners to clear the way for a beach nourishment project.
- In Long Branch, the State Department of Environmental Protection approved a permit over some local objections to clear the way for the development of private homes and relocation of historic structures from the Lake Takanassee Beach Club.
- Coastal communities in Monmouth County are up in arms at the prospect of paying substantially higher flood insurance rates, as a result of FEMA's recent roll out of revised flood hazard maps.
- In the recent State budget, the legislature agreed to transfer \$9 million from the reserves of the Beach Protection Fund, which is available to fund the State share of shore protection projects, to pay for park operations for the next 12 months. While the transfer was approved for one year only, there is concern that the State is short changing long-term investment in coastal hazard protection.

All of these interests are tugging against each other and then there is Mother Nature, who has a mind of her own. While we are watching a volleyball tournament in Belmar, strolling in Long Beach Island State Park or birding in the Cape May wetlands, it is hard to imagine that we are on the front lines of the State's battle to adapt to rising sea levels and to mitigate community impacts of coastal storms. By all means, we need to have our day at the beach, but let's not forget that it is important to make sure we are ready for the next hurricane or major nor'easter. Under the current hodge-podge of often conflicting federal, state and local policies and competing interests that affect shore protection, land use and hazard mitigation planning, it is not clear that New Jersey is fully prepared to meet these challenges.

Recently, the Urban Coast Institute hosted a meeting of State and local officials from New Jersey, New York and Delaware with representatives from the U.S. Army Corps of Engineers to discuss how to develop a strategy to meet long-term shore protection needs in the region. There were several recommendations that came through loud and clear.

What's Our Vision for the Future of New Jersey's Shoreline?

(continued) by Tony MacDonald

- We cannot be content with managing the status quo but need to develop a vision for the region's coasts that will be sustainable over time.
- A vision for change will require shared goals, dedicated resources and enhanced partnerships across agencies and will need extensive public support.
- The shoreline needs to be managed as a dynamic system, both natural and political, and people must know that conditions will not remain the same in 50, or even 20, years.
- Nonstructural alternatives need to be considered, particularly over the long-term.
- There needs to be a greater emphasis on risk-informed decision-making at the regional and local level, including consideration of protection of structures, environment and habitat, infrastructure, critical facilities, evacuation routes and recreational amenities.

Given the prospect of limited funding in the face of increasing needs to protect shoreline communities from storms and flooding, there needs to be a greater emphasis on collaboration, and innovation so that we can achieve needed efficiencies and multiple project benefits over time.

The UCI will continue to build these bridges. If you want additional information, please contact Tony MacDonald at amacdona@monmouth.edu.

The Future of Coastal Lakes in Monmouth and Ocean Counties

by John Tiedemann, Assistant Director

The challenge of managing Monmouth and Ocean Counties' coastal lakes was addressed at a recent symposium hosted by the Urban Coast Institute.

The purpose of *The Future of Coastal Lakes of Monmouth and Ocean Counties* workshop was to bring together natural resource managers, municipal officials, representatives of civic groups, community organizations, and local coastal and watershed management groups to develop a vision for implementing cost-effective strategies to restore, protect and maintain coastal lake ecosystems in Monmouth and Ocean Counties.

The workshop was part of the Monmouth University Urban Coast Institute's Coastal Watershed Seminar Series. It was sponsored by the National Oceanic and Atmospheric Administration and the Fairleigh S. Dickinson Jr. Foundation, and was held in collaboration with a number of partners, including the American Littoral Society, Rutgers Cooperative Extension of Monmouth County, the Barnegat Bay National Estuary Program, the New Jersey Corporate Wetlands Partnership, the Monmouth Coastal Watersheds Partnership, and the Manasquan River Watershed Association.

Monmouth and Ocean Counties have a number of lakes located in the coastal zone adjacent to estuaries and the ocean. Coastal lakes provide a variety of recreational opportunities and are important habitats for fish and wildlife. Unfortunately, these aquatic ecosystems can become disrupted or unhealthy from the introduction of pollutants from storm water and runoff, modifications to shorelines and riparian areas, or invasions of harmful aquatic plants or animals. This is especially true in the case of coastal lakes in Monmouth and Ocean Counties because of intense surrounding development and the fact that they have historically been the terminal receiver of road and overland runoff from storm sewers.

UPCOMING UCI EVENTS

September 10th

Sustainable/Resilient Coastal Communities Workshop 8:00 am-3:00 pm Magill Commons Monmouth University West Long Branch, NJ

October 29th

Green Building at the
Jersey Shore
Conference and
Technology Fair
9:00 am-4:00 pm
The Holiday Inn
Toms River, NJ

October 30th

Urban Coast Institute
Future of the Ocean
Symposium
10:00 am-12:00 pm
and
Awards Luncheon
12:00 pm-2:00 pm
Wilson Hall
Monmouth University
West Long Branch, NJ

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The Future of Coastal Lakes in Monmouth and Ocean Counties (continued) by John Tiedemann

The challenge facing local officials is to manage coastal lakes in a manner that provides for maintenance of their ecological integrity and accommodates active and passive recreational activities. While a variety of watershed and storm water management plans have recently been developed, local communities have struggled to identify, fund and implement on-the-ground coastal lake restoration strategies.

To address these issues, the Urban Coast Institute brought together the U.S. Environmental Protection Agency, which has conducted a survey of national lakes, the State Department of Environmental Protection, which has an ambient lake monitoring network, and local lake monitoring initiatives to discuss the future of the two counties' many coastal lakes.

The results of the workshop will be posted on the UCI website and will begin to shape priorities for addressing pollution and management issues in the coastal lakes. For additional information, please contact John Tiedemann at itiedema@monmouth.edu.

Ecosystem and Regional Ocean Planning for the Mid-Atlantic Coast by Jennifer DiLorenzo, Sustainable Coastal Community Liaison

The UCI recently held a workshop, "Improving Regional and Ecosystem-Based Ocean Management Approaches in New Jersey" to identify opportunities and challenges to implementing regional and ecosystem-based management (EBM) approaches to the urban coastal environment.

The ideas developed at the workshop will help address critical ocean and coastal issues including offshore energy, living marine resource conservation and habitat protection in the New York/New Jersey portion of the Mid-Atlantic Coast. The workshop was attended by representatives of state and federal agencies, academia and environmental non-governmental organizations (NGO's), such as The Nature Conservancy, American Littoral Society, and the Jersey Coast Anglers Association.

Ecosystem-based management (EBM) has been defined by the scientific community as an integrated approach to management that considers the entire ecosystem, including humans. The goal of EBM is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern by considering the cumulative impact of different sectors. Since the inception of EBM, academia and environmental agencies and organizations have been working to develop strategies to implement EBM across state, federal and local planning areas.

The UCI workshop addressed four basic questions for using EBM and integrated regional ocean management to address critical coastal and ocean issues in New Jersey:

GUESS THE COASTAL CREATURE

By Jessica Lisa

Test your skills and knowledge of the beaches and ocean. Can you identify the sea or shore creature based on this picture?



Picture provided by the National Aquarium in Baltimore

- A. Octopus
- B. Summer Flounder
- C. Spider Crab

Answer on Page 9....



Ecosystem and Regional Ocean Planning for the Mid-Atlantic Coast (continued) by Jennifer DiLorenzo

- What are the 5 biggest problems we face and are looking toward EBM to help us solve?
- How would management and regulation change with an EBM approach?
- How can the research needs and monitoring information being gathered through various data collection systems be integrated and help us to approach these problems using EBM?
- What resources (funding and staffing, etc.) are needed to implement EBM?

Workshop participants said the problems facing the ocean are:

- Loss and/or degradation of habitat.
- Global climate change and sea level rise.
- Contamination.
- Fisheries declines.
- Offshore energy development.
- Over-development of coastal lands.

Key challenges for implementing EBM were identified as:

- Overcoming institutional barriers at state, federal, and the local level to integrate EBM into existing programs and practices.
- Balancing tradeoffs.
- Defining the geographic scope of EBM so that there will be interjurisdictional approaches at scales that add value.
- Decentralizing data.
- Promoting public understanding of regional issues.

After deliberations, the workshop participants made several recommendations for implementing EBM strategies including:

- Developing a state ocean policy.
- Centralizing data for government agency decision makers.
- Coordinating data collection.
- Developing public education materials.
- Developing indicators to assess management strategies.
- Increasing funding for EBM projects and staffing at the state level.

As a follow up to this New Jersey workshop, a Mid-Atlantic Regional Ocean Forum is being planned for December 2008 in Baltimore, Maryland. For more information, please contact: Jennifer DiLorenzo at jdloren@monmouth.edu.



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BLUE TIPS — GO GREEN!



Here are 10 simple steps to get you started on reducing <u>your</u> impact on the Earth.

- If you aren't using your computer, lights or TV, TURN IT OFF.
- Chargers for electronic equipment use energy when plugged in, even if you aren't using them. UNPLUG IT.
- 3. Compact Fluorescent Light Bulbs use 75% less energy than incandescent bulbs and last 10 times longer. USE CFL BULBS.
- When it's time to replace refrigerators, heaters, hairdryers, and other appliances, BUY ENERGY EFFICIENT.
- 5. When you're brushing your teeth, **CONSERVE WATER**.
- BRING YOUR OWN
 bags when you shop at the grocery store, and tea or coffee cup to be refilled.
- Take advantage of our recycling programs. Pay attention to the different shaped bins and RECYCLE.
- 8. Know where your clothes, electronics, etc. are made, and how they impact the earth. BE A SMART CONSUMER.
- Organic products are not grown using pesticides, and local products support local businesses.
 BUY ORGANIC AND
- LOCAL.

 10. Make your impact a

positive impact.

SPREAD THE WORD.



TOGETHER WE CAN ALL MAKE A DIFFERENCE!

Notes from the Field

By Jess Lisa, Research Associate

As visitors pour into the shore they may notice fenced off areas on the outer edge of beaches near sand dunes, usually marked with signs and pictures of a tiny bird. This is the piping plover, *Charadrius melodus*, one of New Jersey's most welcome residents that live in nesting pairs with their chicks in these protected areas.

The piping plover, a small, stocky, sand colored bird, gets its name from the short bell-like whistle sounds it makes. Adult piping plovers have yellow-orange legs, a black band across the forehead, and a black ring around the base of the neck. Plover chicks look like fluffy cotton balls with legs. When stopped or feeding on marine worms, crustaceans and insects, plovers camouflage well into their surroundings.

Beginning in March and early April, along Atlantic coastal beaches from Newfoundland to North Carolina, plover

pairs can be found establishing nesting territories and conducting courtship rituals. Following courtship, nests or shallow depressions lined with small stones and shell fragments are built in areas protected from waves, tides and storms. Plovers typically lay four eggs that hatch in about 25 days. Both eggs and chicks blend well with the surroundings.

Hatchlings stay close to their parents for protection during the first 30 days of their lives while they learn to forage and fly. During this time, plover chicks are extremely vulnerable. If an intruder is encountered, chicks will squat down and remain motionless while the parent plover fakes a broken wing and diverts attention away from the chicks.

In late August and early September, adult plovers and surviving fledglings gather in groups on beaches and prepare for migration to wintering grounds in Florida, the Bahamas, and the West Indies.

Piping plovers were abundant on the Atlantic coast beaches during the 1800s but were on the verge of extinction because commercial hunting for their eggs and feathers became popular in the early 1900s. In 1918, the Migratory Bird Treaty Act provided some protection, but the population began to decline again in the 1940s, because of coastal development and beach recreation. In the 1980s, the fragile bird received both State and national protection. The plover population has almost doubled over the last 20 years, but numbers are still fewer than 2,000 nesting pairs nationally. In New Jersey there are 120 recorded nesting pairs, but the plover still remains one of the most endangered species in the State.

In New Jersey there are 120 recorded nesting pairs, but the plover still remains one of the most endangered species in the state. Current threats and predators of piping plovers include human activities, larger birds, foxes, raccoons, skunks, feral cats, and pets. Human activities and development along the beach also threaten the success of the plovers. Large groups of people and commotion disturb nesting plovers, resulting in unsuccessful incubation of eggs. Foot and vehicle traffic near nests threaten to crush eggs or kill chicks.

Notes from the Field (continued)

By Jess Lisa, Research Associate

Fortunately, not all human activity is harmful. Every nesting season for the past seven years, Monmouth University has been collaborating with The NJ Fish and Wildlife Endangered and Nongame Species Program to monitor and protect piping plovers. Student interns scout the beaches daily to find nesting plovers, fence nesting areas or even fence off actual nests to minimize interactions with beachgoers and predators. Then Monmouth University interns continue through the summer to monitor nests and record the number of eggs, the surviving hatchlings and fledglings, and dates for each stage. Once the plovers return south, the information is used by State DEP to determine the success of the season. The work is done to ensure the success and survival of these beautiful birds in hopes that they will continue their recovery in New Jersey.

Information for this article was taken from the State DEP Division of Fish and Wildlife website. For more information on the piping plover and other threatened shore birds please visit http://www.njfishandwildlife.com/ensphome.htm.

In the Lab—Beautiful but Delicate

By Mike Witty, Postdoctoral Research Fellow

There are many wonderful surprises in science. In my research monitoring algae in Barnegat Bay to identify the ugly, harmful species that cause brown tides, I sometimes come across algae that are beautiful. When viewed though a microscope, some of the prettiest are diatoms which have cell walls made of silica, perforated with symmetric patterns of pores.

Pictures of these diatoms rival the work of great artists. But silica is very similar to glass and very brittle; while they can start out like a piece of beautiful crystal from Tiffany's like Figure A.....

Figure A. Diatoms have silica shells

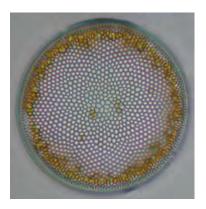
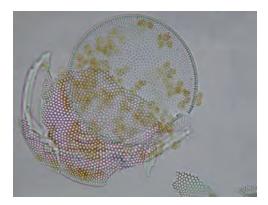


Fig B. They are brittle and can shatter.



... after a slight accident they shatter and can end up looking like shards of glass from a broken beer bottle littering the beach on New Years Day, as shown in Figure B.

These diatoms, like the ecology of Barnegat Bay, need to be handled with care. If you would like more information on UCI's algae research, contact Dr. Mike Witty at mwitty@monmouth.edu.

FEDERAL LEGISLATIVE UPDATE - JULY 2008

BILL NUMBER/ SPONSOR	TITLE	DESCRIPTION	STATUS Latest Major Action:
H.R. 1907/ <u>Rep</u> Saxton, Jim [NJ-3]	Coastal and Estuarine Land Conservation Program Act	To authorize the acquisition of land and interests in land from willing sellers to improve the conservation of, and to enhance the ecological values and functions of, coastal and estuarine areas to benefit both the environment and the economies of coastal communities, and for other purposes.	6/25/2008 House committee/subcommittee actions. Status: Ordered to be Reported (Amended) by Voice Vote.
H.R. 3223/ Rep. <u>Allen,Tho</u> mas H. [ME- 1]	Keep our Waterfronts Working Act of 2007	To amend the Coastal Zone Management Act of 1972 to establish a grant program to ensure coastal access for commercial and recreational fishermen and other water-dependent coastal-related businesses, and for other purposes	2/28/2008 House committee/subcommittee actions. Status: Subcommittee Hearings Held.
H.R. 4147/ <u>Rep</u> <u>Allen,</u> <u>Thomas H.</u> [ME-1]	Federal Ocean Acidification Research And Monitoring Act of 2007' or the `FOARAM Act'.	To establish an interagency committee to develop an ocean acidification research and monitoring plan and to establish an ocean acidification program within the National Oceanic and Atmospheric Administration.	6/25/2008 House committee/subcommittee actions. Status: Ordered to be Reported (Amended) by Voice Vote.
H.R. 5451/ Rep Bordallo, Madeleine Z. [GU]	Coastal Zone Reauthorization Act of 2008	To reauthorize the Coastal Zone Management Act of 1972, and for other purposes-5 year reauthorization of act with appropriations to support grants to states	6/4/2008 House committee/subcommittee actions. Status: Forwarded by Subcommittee to Full Committee (Amended) by Voice Vote .
H.R. 5452/ Rep Capps, Lois [CA-23]	Coastal State Renewable Energy Promotion Act of 2008	Establishes a new grant program for surveys of coastal state waters and adjacent federal waters to identify areas suitable for renewable energy projects	2/28/2008 House committee/subcommittee actions. Status: Subcommittee Hearings Held.
H.R. 5453/ <u>Rep</u> <u>Capps, Lois</u> [CA-23]	Coastal State Climate Change Planning Act of 2008	Establishes a new grant program for states to develop plans to address climate change and provide grants for projects to implement strategies in these plans	2/28/2008 House committee/subcommittee actions. Status: Subcommittee Hearings Held.
H.R. 5618/ <u>Rep</u> <u>Bordallo,</u> <u>Madeleine Z.</u> [GU]	National Sea Grant College Program Amendments Act of 2008'.	To reauthorize and amend the National Sea Grant College Program Act, and for other purposes.	6/25/2008 House committee/subcommittee actions. Status: Ordered to be Reported (Amended) by Voice Vote.

STATE LEGISLATIVE UPDATE-JULY 2008

CHAPTER LAWS

CHAPTER/BILL NUMBERS/SPONSOR	DESCRIPTION	STATUS
C.288/S2645/A4332/ Karcher	Creates the NJ Coastal and Ocean Protection Council; appropriates \$75,000	1/13/2008, P.L. 2007, c. 288; awaiting Governor's appointments to the Council and funding

PENDING LEGISLATION

BILL NUMBER/SPONSOR	DESCRIPTION	STATUS
A1808/Milam	Authorizes DEP and NJ Marine Fisheries Council to regulate taking and management of striped bass	1/24/08-Introduced
A283/Rumpf	Establishes Hooked on Fishing-Not on Drugs Program in DEP and appropriates \$200,000 therefor from Drug Enforcement and Demand Reduction Fund	6/12/08-Reported out of Assembly Committee, 2 nd Reading
A952/Thompson	Dedicates \$20 million annually in realty transfer fee revenues to pay for development, improvement, and repair of State parks, forests, recreation areas, historic sites, natural areas and fish and wildlife areas	1/8/08-Introduced, referred to Assembly Agriculture and Natural Resources Committee
A1202/Chiappone	Changes composition and revises authority of Fish and Game Council; creates nonlethal alternative committee within council	1/8/2008- Introduced, referred to Assembly Agriculture and Natural Resources Committee
A1519/Rible	Prohibits the use of certain fishing gear on artificial reefs	1/8/08-Introduced, referred to Assembly Agriculture and Natural Resources Committee
A1699/Van Pelt	Requires assessment of bay scallop resource, and authorizes DEP to establish a bay scallop fishery.	1/8/08-Introduced, referred to Assembly Agriculture and Natural Resources Committee
A1218/Wolfe	Allocates at least \$100 million from the Garden State Green Acres Preservation Trust Fund for coastal and inland Blue Acres land acquisition projects in flood-prone areas	1/8/08-Introduced, referred to Assembly Agriculture and Natural Resources Committee
A1520/Rible	Appropriates \$14 million in Green Acres funds to purchase Takanassee Beach Club	1/8/08-Introduced, referred to Assembly Environment and Solid Waste Commitee
A1559/Greenstein	Authorizes municipal planning boards to adopt green buildings and environmental sustainability municipal master plan element	6/12/08-Passed Both Houses
<u>\$696/\$mith</u>	Establishes New Jersey State Building Green Building Technology Task Force	1/8/08-Introduced, Referred to Senate Economic Growth Committee
<u>S697/Smith</u>	Establishes NJ Commission on Global Climate Change	1/8/08-Introduced, referred to Senate Environment Commitee

Real Time Water Quality Monitoring Now Available on the Web

By Jim Nickels, Marine Scientist

The UCI, in collaboration with the New Jersey Department of Environmental Protection Bureau of Marine Water Monitoring, the Barnegat Bay National Estuary Program and other local and regional partners, has a network of six automated monitors that are currently operational.

Near-real time data is being collected for temperature, salinity, dissolved oxygen, pH, turbidity and chlorophyll at the following sites:

- Barnegat Bay at Seaside Park;
- Barnegat Bay at Mantoloking;
- Manasquan River Estuary at Point Pleasant;
- Shark River Estuary at Belmar;
- Shrewsbury River Estuary at Branchport Creek;
 and
- Navesink River Estuary.

Guess the Coastal Creature Answer:



Photograph courtesy of Bill Dalton

The shore creature pictured here is the Summer Flounder.

The summer flounder or fluke is a carnivorous, flatfish that lives off the western Atlantic Ocean from Maine to northern Florida. Both eyes are on the left side of the head, allowing the fish to lie on its side on the sea floor and watch for predators or prey.

NEW JERSEY COASTAL FACTS

DID YOU KNOW?

Coastal Economy and Resources

- ★ In New Jersey and New York, over 21 million people live in coastal areas, placing enormous stress on coastal resources.
- New Jersey has 127 miles of ocean beaches. The tourism economy contributes greater than \$16 billion annually to the New Jersey economy.
- The Port Authority of New York and New Jersey handled over 86 million metric tons of cargo in 2006; the total value of this cargo exceeded \$149 billion.
- New Jersey's commercial saltwater anglers harvest 13.7 million pounds of fish annually with an estimated landing value of \$20.5 million.
- ★ New Jersey supports over 300,000 acres of tidal wetlands habitat that also mitigate flooding and serve as a stop-over for over 1.5 million migrating shorebirds.
- ★ The ecosystem services value of buffering and filtration of fresh and saltwater wetlands is estimated at over \$10 million.
- When impervious and impermeable surface such as buildings, roads and parking lots increase above 10 percent, waters become degraded and pollution increases.

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UCI Announces Visiting Public Scholars in Residence for 2008-2009 By Tony MacDonald

The UCI is pleased to announce its first Public Scholars in Residence will be Dr. Jim Sinclair and Mr. Andrew Willner. The program provides a venue for scholars, practitioners and leaders in their field to share their expertise with students and faculty; and to support the public programs of the Urban Coast Institute. Dr. Sinclair will focus on sustainable coastal development and business practices, regulatory policy, and private-public partnerships that support coastal and ocean conservation. Mr. Willner will focus on assisting local, urban coastal groups to garner community support for implementation of projects that support pragmatic sustainability and ecological democracy.

Dr. Sinclair brings over 40 years of front line experience in New Jersey's public policy debates as an advocate, engineer, political consultant and academic. Among other positions, Dr. Sinclair served as environmental advisor and First Vice-President of the New Jersey Business and Industry Alliance. Mr. Willner has extensive experience as a regional and national leader in supporting conservation of coastal and marine resources, including nineteen (19) years as the New York New Jersey Baykeeper. The Visiting Public Scholars will be available to participate in on-campus classes at the invitation of faculty, give public lectures and participate in University and public fora, develop policy papers and stimulate and facilitate debate and dialogue on critical issues facing our coastal and ocean environment.

For more information contact: Tony MacDonald at amacdona@monmouth.edu.

