



The Barnegat Bay Beat

Volume 3, Issue 4

Fall 2004

A Quarterly Publication of the Barnegat Bay National Estuary Program

A Summer of Partnerships With Ocean County College

Opportunities to learn more about the Barnegat Bay Watershed were abundant this summer on the campus of Ocean County College. The Barnegat Bay National Estuary Program and the Department of Continuing and Professional Education partnered for two events: a Children's Summer Camp and a Senior Lecture.

The week-long children's camp focused on teaching children ages 6 to 8 about the Barnegat Bay watershed. The adventure included making crafts such as 3-dimensional jellyfish, hiking and planting flowers in the Ocean County College arboretum, making pinecone birdfeeders and participating in a number of environmental games. The kids became much more knowledgeable and interested in their environment from the first day of camp when one of the participants explained to the camp instructor (Shannon Shinault, Public Outreach Coordinator for the Barnegat Bay National Estuary Program) that she "did not touch nature." By the end of the week, she was holding toads.

The Senior Ventures program, a lecture series, was designed for the Academy for Lifelong Learning. The Barnegat Bay National Estuary Program partnered with Jenkinson's Aquarium and the Marine Academy of Technology and Environmental Science for a fun Friday morning lecture filled with hands-on discovery. John Wnek presented a lecture regarding the ongoing research on the terrapin (web-footed turtles living in fresh or brackish water), as well as introducing a few of these fascinating creatures to the seniors. Lisa Balabanow ended the lecture with information and live specimens of invertebrates that can be found within the Barnegat Bay Watershed.



Deirdre, Clare, and Maura Cahill plant flowers in the OCC Arboretum as a Children's Camp Activity.



Left to Right: John Wnek answers questions regarding the terrapin population in Barnegat Bay. Senior Ventures participants are intrigued by the small movements of the sea star.



Teacher Workshops Offered by Ocean County Soil Conservation District

Discovering Barnegat Bay: Professional Development and In-Service Opportunities

Discovering Barnegat Bay is an activity guidebook that was developed through expert collaboration among the members of the Barnegat Bay Watershed Environmental Educators Roundtable Steering Committee. *Discovering Barnegat Bay* is designed for easy integration into existing curricula and is multidisciplinary. While primarily developed for the upper elementary to middle school grade levels, it offers significant flexibility and adaptability to all grade levels. *Discovering Barnegat Bay* is a regionally significant educational resource and our goal is to have it integrated to some degree into all schools within our watershed and Ocean County. A Treasure Chest of resources for each Ocean County school has also been compiled to accompany the guidebook. This kit contains 63 items meant to augment and supplement the activity guidebook. Each school that participates receives this valuable Treasure Chest for FREE. The guidebook cost is \$35 per participant and we require a minimum of ten participants in order to hold a workshop. There are no other fees or compensations.

Please contact the Ocean County Soil Conservation District at 609-971-7002, Extension 21, or email info@ocscd.org with any questions or to schedule a professional development opportunity for your school or district.

Two Discovering Barnegat Bay workshops are presently scheduled: Monday, October 18 from 9AM until 3PM at the Lighthouse Center for Natural Resource Education in Waretown, NJ, and Monday, October 25 at Jenkinson s Aquarium. Register by contacting the Ocean County Soil Conservation District at the number above. Keep checking their website (www.ocscd.org) for future dates.

Getting to Know Our Neighbors

Mary Judge, BBNEP Assistant

The name "raccoon" comes from the Algonquin Indians and means "he scratches with his hands." The raccoon is easily identified by its black mask on a whitish face and the four to seven dark rings on its tail. Their finger-like toes are long, thin, and very flexible, giving them the dexterity necessary to open your ice chest and chow down while you're sleeping in your tent or pry off the top of the garbage can left out at night.

Raccoons do not form long-lasting relationships and a male will typically mate with several females each spring. Raccoons really enjoy a nice hollow tree to live in so if you only took down that rotten silver maple halfway last winter, you can bet a raccoon will have moved into the stump by spring. Raccoons in the wild can live up to 16 years, but the average life span is actually only about 3-4 years, mostly due to man, automobiles, dogs, and diseases such as canine distemper and rabies. Raccoons are mostly nocturnal but in urban areas it's not unusual for a healthy animal to venture out in the daytime if it's hungry or its den has been destroyed. If an animal is behaving normally in the daytime, it is probably not rabid and should be left alone.

Raccoons are very clean and use a common latrine in the wild. The raccoon is an omnivore, which means it eats a wide variety of foods including frogs, birds, mice, fruit, nuts, plants, crops, and GARBAGE. Don't make it easy on them by putting your garbage out for collection the night before in a plastic bag. They'll have it spread all over the street in no time. If you can't resist feeding them, don't be surprised if after skipping a day, they open up your patio door and come looking for you. Let the wildlife be wild.



Photo by Peter Lopez

See more of Peter Lopez's gorgeous nature photography (and more) by logging on to www.new-century-inc.com

Local Flavors

Jersey Fresh Tomato and Smoked Mozzarella Slices

Another delicious use for a
bumper crop.

1/2 lb. smoked mozzarella cut
into 1/8 inch slices
10 Jersey Fresh basil leaves
2 lrg. Jersey Fresh tomatoes cut
into 1/4 inch slices

Creamy basil dressing:

1/3 c. olive oil
3 T. red wine vinegar
2 T. heavy cream
3 T. finely chopped fresh green
basil leaves

Arrange the mozzarella and
tomato slices on a plate overlap-
ping each other. Whisk all the
dressing ingredients together
and salt and pepper to taste.
Pour over the tomatoes and
cheese. Decorate with the
whole basil leaves. This should
be made just before serving, as
basil leaves darken if left to
stand.



All About Birds

Brought to you by the Cornell Lab
of Ornithology, this site includes an
on-line guide to birdwatching, sound
files of bird songs, a video gallery,
and links to a variety of sites where
you can report your observations.
The conservation section highlights
bird conservation success stories.
Other information includes habitat
management, an educator's guide to
bird study, and how to get involved.
For more information, check out
<http://www.birds.cornell.edu/programs/allaboutbirds/>.

IN THE SPOTLIGHT: PAUL D. "PETE" MCLAIN

On August 31, numerous envi-
ronmental friends and colleagues joined in
a celebration and awards ceremony for life-
time environmentalist, Paul D. "Pete"
McLain. The event was hosted by New
Jersey Audubon Society to announce
Barnegat Bay as one of the listed "impor-
tant bird areas," a conservation and eco-
tourism initiative.

As was echoed several times during the
event, Pete has served as a mentor and
hero for many naturalists and environmental-
ists throughout his 50 years of dedicated
conservation work on Barnegat Bay. As a
former deputy director of the state Division of Fish and Wildlife, Pete is per-
haps best known for his help and initiative in starting the state Endangered
and Non-Game Species Program. Pete was directly involved in the revival of
the ospreys. These large birds almost disappeared in the 1970s, and now
their largest nesting colony in New Jersey can be found in the Barnegat Bay
Watershed at Island Beach State Park.

In an article written by Pete, he stated, "To some Citizens of New Jersey,
Barnegat Bay is a foreign place while other people have heard of it, some
have seen it while crossing a bridge, still others have spent a little time visit-
ing it, and there are those who love Barnegat Bay and consider it a natural
resource jewel. They have tasted the salt, smelled the clean air, enjoyed the
wildlife, and feasted in its fins and shellfish. To know Barnegat Bay is to love
it." Similar sentiments can be echoed about Pete McClain, to know him and
his work for Barnegat Bay is to admire and respect him as an environmental
leader.



Martin McHugh, Director of NJ DEP
Division of Fish and Wildlife pre-
sents Pete McLain with a lifetime
environmentalist award.

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- Please add my name to your mailing list for my free subscription to
The Barnegat Bay Beat.
- Please remove my name from your mailing list. There's no more room
in my mailbox, but I will be sure to check your website at
www.bbep.org.

Mail this coupon to: Barnegat Bay National Estuary Program, at Ocean
County College, PO Box 2001, Toms River, NJ 08754-2001, OR email us
at: sshinault@ocean.edu

Monitoring the State of the Bay: Submerged Aquatic Vegetation Mapping in Barnegat Bay and Little Egg Harbor

Richard G. Lathrop, Jr. Ph.D, Grant F. Walton Center for Remote Sensing & Spatial Analysis Director

Researchers at the Grant F. Walton Center for Remote Sensing & Spatial Analysis (CRSSA) at Rutgers' Cook College and the Jacques Cousteau National Estuarine Research Reserve (JCNERR) conducted an extensive submerged aquatic vegetation (SAV) mapping project to better understand the present status of Barnegat Bay's seagrass habitats.

Submerged aquatic vegetation (SAV) is a key indicator of the environmental health of the Barnegat Bay ecosystem. The bay's seagrasses are an important element of the bay ecosystem, because they harness energy and nutrients that are consumed by other organisms. The seagrass beds also provide a critical structural component in an otherwise barren sandy bottom, serving as essential habitat for a host of organisms from shellfish and crabs to fish and waterfowl. However, in recent years the bay's seagrasses have suffered due to a host of problems, including declining water quality, dredging, brown tides, algal infestation, boat scarring and disease.

To remain healthy and thrive, seagrasses need comparatively clear transparent water. As bay waters become more turbid due to algal blooms and suspended sediment, the light levels needed to sustain photosynthesis and seagrass productivity decline. Nutrient enrichment of the bay's waters, whether from nonpoint source pollution, atmospheric deposition or boat wastes, promote algal blooms, as well as infestations of epiphytic algae coating the seagrass blades and macro algae overwhelming the seagrass beds. Thus, healthy and abundant seagrass signals that the bay's waters are clear and clean.

Using advanced digital camera equipment flown in an airplane, the entire Barnegat-Little Egg Harbor-Great Bay system was imaged on May 4 and 5, 2003. This color imagery was flown in the spring time before the bay's water becomes too turbid, to allow the CRSSA researchers to visualize the bay bottom and determine the location of seagrass beds. The aerial overflight was complemented with boat-based surveys up and down the bay to determine species type (i.e. Eelgrass (*Zostera marina*) or Widgeon Grass (*Ruppia maritima*)), percent cover, blade height and sediment type. Advanced computer-aided interpretation techniques were used to map the location, areal extent and percent cover of the seagrass beds in much greater detail than ever before possible. The resulting maps documented 12,804 acres (5,184 ha) of seagrass beds at 3 levels of density.

Dr. Lathrop coordinated the project with the assistance of Paul Montesano, also of CRSSA. Scott Haag and Dr. Mike Kennish of JCNERR and Pete McLain of Island Beach State Park aided in the field surveying. This effort is part of the Barnegat Bay National Estuary Program's long-term monitoring program to track the pulse of the larger Barnegat Bay estuary and watershed. The funding for the project was provided by the U.S. Environmental Protection Agency.

Since 1968, mapping surveys have been conducted periodically to monitor the extent and status of Barnegat Bay-Little Egg Harbor's seagrass beds. These earlier surveys showed evidence of a decline in the seagrass extent between the late 1970's and the mid-1990's, especially in the northern reaches of the bay. Boat-based surveys conducted between 1996 and 1999 mapped 15,025 acres (6,083 ha) of seagrass. Comparing the 2003 and the late 1990's maps, shows a decline of approximately 2,220 acres (900 ha) or 15%. Rather than representing a significant decline in seagrass, Lathrop attributes the difference in area figures to a change in mapping techniques and the timing of the aerial imagery acquisition. The 1990's boat-based survey mapped SAV by following the exterior perimeter of seagrass beds and recording waypoints using a GPS. This technique tends to homogenize characteristics within a bed, creating a continuous SAV coverage where it may actually be discontinuous. Aerial photographic imagery and the image segmentation/classification techniques adopted in the 2003 study permitted a much finer delineation of exterior boundaries and internal bed discontinuities. In addition, the early May 2003 aerial imagery may have underestimated the spatial extent and cover of Widgeongrass beds, which generally do not reach their peak density until later in the summer growing season. (continued on page 6)

New Education Boat Launched on Barnegat Bay

On September 15, the Barnegat Bay National Estuary Program joined the Ocean County Board of Chosen Freeholders, the Ocean County Vocational-Technical School, and the Ocean County Department of Parks to launch the new 38-foot "Baycruiser" that will be used for educational purposes from April through October.



One of the first uses of the boat scheduled by the Barnegat Bay National Estuary Program will be hosting a three-hour course for the Ocean County College "Life Skills" student population on the ecology of Barnegat Bay. The students will be given a lecture by Chris Claus, a naturalist from Cattus Island County Park, as the 35-passenger boat tours the waters of Silver Bay. Tours aboard the Baycruiser will also be available during the annual Barnegat Bay Festival.

A special thank you and acknowledgement is given to Douglas Popaca, Councilman from Mantoloking for the ingenious idea of purchasing an educational vessel and Freeholder James Lacey for making it a reality.

Tips for a "Green" Holiday Season

Materials: Try to purchase products made from organic or recycled materials or which use recyclable packaging. Buy the most energy-efficient electronic or household items.

BYOB: Bring your own (tote) bag to shop and carry gifts.

Creative gift wrapping: Reuse old wrapping paper, gift bags or boxes, and Sunday comics, or make cloth bags in which to present your gifts.

Life span: Give gifts that are long-lasting and durable, or that can be passed onto someone else when the recipient has finished using it.

Cards: Purchase cards made from recycled paper, or cut the picture side off of old cards and send them as postcards.

Source: Greentips from the Union of Concerned Scientists

Student Conservation Association Gives Helping Hand: Green Thumbs Included *Mary Judge, Program Assistant*

Four students from the Student Conservation Association (SCA) volunteered their time on a hot day in early August to help Mary Judge, Program Assistant for the Barnegat Bay National Estuary Program, weed and plant drought- (and deer-) tolerant grasses and plants in the Ocean County College Arboretum. Midway through the day, Shannon Shinault's OCC summer camp children hiked over to the arboretum to participate in the restoration by planting fall mums in the raised beds and the SCA volunteers helped supervise the children's first gardening attempts. The SCA is a leader in national resource conservation, providing service opportunities, outdoor skills and leadership training to thousands of young women and men each year. The Barnegat Bay National Estuary Program would like to thank the SCA volunteers for their hard work and dedication to restoring and maintaining the beautiful natural resources of the Barnegat Bay Watershed. Read more about the SCA at their website:

<http://www.sca-inc.org>.



Low Impact Design Strategies for Stormwater Management Roundtable

October 27th, 2004

The Barnegat Bay Phase II Municipal Stormwater Steering Committee is planning its third in a series of six roundtable workshops for the municipalities, builders and public complexes within the Barnegat Bay watershed. This roundtable will be held on October 27th, 2004 and will be focused on low impact design strategies within the watershed. The day-long roundtable will commence at the JCNERR Coastal Education Center in Tuckerton, NJ with expert speakers from the University of Connecticut, the NJ DEP and Omni Environmental Corporation speaking on various aspects of low impact design strategies, best management practices and water quality research supporting the use of these strategies in coastal watersheds such as the Barnegat Bay. The afternoon will include a box lunch and a field trip to sites in Ocean County to see low impact design strategies on the ground. The bus will return participants to Tuckerton, NJ by 3pm. There is no fee to register. Interested participants can register by calling Lisa Weiss (JCNERR) at 609-812-0649.

Monitoring the State of the Bay...(cont. from page 4)

Based on the 2003 maps, the SAV distribution has remained reasonably stable over the past five years. There does not appear to be any wholesale loss of beds when compared with the 1990's maps. This is good news considering the continued development of the bay's watershed, as well as the tremendous brown tide blooms that hit the bay during 2001 and 2002. The 2003 digital imagery and resulting maps will provide an excellent baseline for future comparisons. Coupled with advanced image analysis techniques, we should be able to make more robust conclusions regarding change in areal extent, location and spatial pattern of seagrass beds in future monitoring efforts.

As part of ongoing work at the JCNERR, the remote sensing based mapping is being complemented with *in situ* sampling to get a better handle on seagrass abundance and health and the impact of possible disturbance factors. Starting this past spring 2004, JCNERR's Mike Kennish, Scott Haag, and Gregg Sakowicz have set up a series of permanent field plots in Little Egg Harbor where intensive sampling of seagrass beds will be undertaken periodically over the growing season and succeeding years. They hope to expand this sampling program northward into Barnegat Bay proper in the near future. Additional research on planting and restoring seagrass beds is being undertaken by Dr. Paul Bologna of Montclair State University.

To look at the maps derived from the present and past SAV surveys go to: <http://crssa.rutgers.edu/projects/runj/sav/index.htm>. These maps and accompanying information are available to the larger Barnegat Bay research and management community and the interested public to help understand how the seagrass beds are changing, the role of seagrass in the larger bay ecosystem, and the success of the Barnegat Bay National Estuary Program's restoration efforts.



Water Quality Monitoring in Barnegat Bay Using Data Loggers

Dr. Robert Scro, Program Director

A major initiative is now underway by the Barnegat Bay National Estuary Program (BBNEP) to provide accurate and comprehensive measurements of water quality parameters in the Barnegat Bay-Little Egg Harbor Estuary, as specified in the Comprehensive Conservation and Management Plan. The BBNEP, working together with the Institute of Marine and Coastal Sciences (IMCS) at Rutgers University, will establish two sampling stations in the Barnegat Bay-Little Egg Harbor Estuary for long-term water quality monitoring.

The project will be led by Dr. Michael Kennish, IMCS, who has a great deal of experience using YSI 6600-M automatic data logger units in estuarine water quality monitoring. Parameters will be measured every 30 minutes, including water temperature, salinity, pH, dissolved oxygen, and turbidity, all of which greatly influence biotic communities in the estuary. A total of \$75,000 for the project was provided to the BBNEP Program Office as part of a legal settlement with the Oyster Creek Nuclear facility.

Two data logger monitoring sites will be established in the Barnegat Bay-Little Egg Harbor Estuary during 2004, in proximity to critically important submerged aquatic vegetation (SAV) beds and vital resource species of fish and shellfish. The data will be sent via telemetry to various websites.

Ocean County College and the Ocean County Vo-Tech School (MATES) will also provide student support in the field and for data management.

Look for BBNEP this fall at:

Project FISH
(Fishing In Seaside Heights)
October 2, Seaside Heights

Cattus Island Nature Festival
October 3, Cattus Island County Park, Toms River

Pine Barrens Jamboree
October 9, Wells Mills County Park, Waretown

A big thank you to **Brave New World**

for their donation of a sweatshirt to
our slogan contest winner.

www.bravesurf.com
732.899.8220

&

Andrew Gioulis,

OCC Graphics Specialist, for sub-
mitting various photos for this
newsletter edition!

W h e r e ' s B a r n e y ?

A big congratulations goes to Barbara Coll, the first person to respond with the correct answer to the last edition's location (which was: under one of the tents at the Barnegat Bay Festival).

Barney keeps exploring. Think you have the answer to this month's location? Be the first to email the correct answer to sshinault@ocean.edu to receive your Barnegat Bay baseball hat.



New Agent Joins Rutgers Cooperative Extension of Ocean County

Jan Larson, Rutgers Cooperative Extension Resource Management Program Associate

Cara Muscio will be joining Rutgers Cooperative Extension of Ocean County as Marine Water Quality and Recreation Agent. She will hold the position of Assistant Professor in the Department of Agriculture and Resource Management Agents, Cook College/NJ Agricultural Experiment Station. This position is jointly funded by the Boards of Chosen Freeholders of Monmouth, Ocean and Atlantic Counties, as well as Cook College, and job responsibilities will be mainly in those counties.

Ms. Muscio has been working as an aquatic biologist, with experience in a variety of areas. She most recently worked for the City of Austin Watershed Protection and Development Review Department in Texas, specializing in the bioassessment of freshwater streams and lakes. Cara is a phycologist by training, and has studied algae in Texas, and through the various stages of her career. She holds a Master's degree from Old Dominion University in Virginia, and has worked in conjunction with the Chesapeake Bay Monitoring Program. Although her undergraduate degree is in Environmental Science, she elected to construct a cross-disciplinary research study in aquatic ecology, a path which is now an offered major at Susquehanna University. She has also worked for the Freehold Soil Conservation District.

Cara is overwhelmingly excited to return to the Jersey shore, and is looking forward to working directly to improve and protect an area that she has always called "home," having grown up in Ocean County. She plans on continuing her research with algae blooms and nutrient management, and other water quality concerns. She hopes to use this knowledge and her technological skills to assist the community in making choices that help preserve the integrity of our coastal waters for all competing uses.

Ms. Muscio's office is located at the Ocean County Extension Center, 1623 Whitesville Road, in the Pleasant Plains Section of Toms River. She can be reached by calling 732-349-1210.

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Fishin' for Ideas

We welcome all contributions and story ideas for inclusion into *The Barnegat Bay Beat*. Please contact Shannon Shinault via email at sshinault@ocean.edu for more information.

The Barnegat Bay Beat is a quarterly newsletter produced by the Barnegat Bay National Estuary Program. The Barnegat Bay National Estuary Program is a partnership of federal, state and local interests. Our office is located on campus at Ocean County College, College Drive, Toms River, New Jersey.

The Barnegat Bay Beat

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