DNREC, Shoreline and Waterway Management Section

Spring 2009

Volume 3, Issue 2

The latest scoop:

- Welcome Collin O'Mara, the new Secretary of the Department of Natural Resources and Environmental Control
- Beach Renourishment of Dewey Beach will begin in late April 2009
- Addition to the cement bag jetty in Bowers Beach is to begin soon.
- Algae Harvesting Reconnaissance is underway for the season. If there is an algae problem in your waters, please let us know at http://www.dnrec.state.de.us/macroalgae/contact.asp

Upcoming Events:

Delaware Dunes and Coastal Landscaping
May 15, 2009, 9 a.m. – 12:30 p.m.
Bethany Beach Fire Company
215 Hollywood Street
For more information contact
Michelle Scorziello
302-645-4346 or mkscorzi@udel.edu

Happy Earth Day!

20th Annual Beach Grass Planting A Huge Success

On Saturday, March 21, 2009 the Delaware Department of Natural Resources and Environmental Control and more than 900 volunteers arrived at Atlantic Ocean and Delaware Bay public beaches to help plant Cape American Beach Grass on the dunes. In the sunny, but chilly weather, 150,000 stems of grass were planted over 4 miles of coastline between Bethany Beach and Kitts Hummock Beach.

Each year in the early spring since 1990, many dedicated volunteers have stabilized Delaware's sand dunes by planting more than 5 million stems of Cape American Beach Grass on Delaware's ocean and bay beaches.

Beach Grass helps to build and stabilize dunes by trapping wind blown sand. As the Beach Grass traps sand it builds the dunes higher and wider, which makes it more protective of the structures behind it. Sand dunes provide protection against damaging coastal storms by absorbing wave energy. They also act as major sand storage areas which replenish sand to eroded beaches during storm events. Without sand dunes, storm waves rush inland and flood properties.

Special thanks to the Delaware Mobile Surf Fisherman for organizing their group to assist the Department in guiding the volunteers and providing refreshments for volunteers at Delaware Seashore State Park and Cape Henlopen State Park. Thank you to the Delaware Seashore Preservation Foundation for providing snacks for the volunteers at the Indian River Life Saving Station site. Thank you to the Town of Bethany Beach, Town of Slaughter Beach, the Rehoboth Beach Homeowners Association and the Broadkill Beach Preservation Association, for planting areas within their towns and communities as well as providing refreshments for volunteers. Thank you to the Cape Shores Homeowners Association and the Town of Dewey Beach for opening the restrooms facilities for volunteers to use. Many thanks to Pepsi Co., Wawa and Super G Food and Drug and for donating beverages for the volunteers to drink during the planting.

We would also like to extend a great thanks to the many volunteers and DNREC employees who have taken time out of their weekends to help plant the dunes and who have made this event a huge success!

Installing Septic Systems in V-Zones

During the coastal storm that occurred in May of 2008, it was evident that having certain types of septic systems in an area designated as V-zone in a coastal floodplain can be problematic. The V-zone (V stands for velocity) is the most hazardous of the delineated flood zones because this area is exposed to both flood water and wave action. Wave action and erosion tend to be the most detrimental for septic systems located in this zone.

If a septic system is damaged or destroyed in a coastal storm, what flood zone the system is in should be considered before replacing it. Installation of septic systems in Delaware's beach area not only requires approval by DNREC's Division of Water Resources' Groundwater Discharges Section, but it also requires approval from the Division of Soil and Water's Shoreline and Waterway Management Section. The local municipalities enforce their own floodplain ordinances, but DNREC has begun examining what is required in flood zones, to be sure that what is constructed has a better chance of surviving the next storm. By minimizing or eliminating future storm damage, DNREC is helping property owners keep the use of their homes and saving them money down the road. DNREC is also keeping adjacent waters from becoming contaminated by sewage in a storm event.

When applying to install a new septic system in a V-zone, plans must be certified by a registered professional engineer that all new and replacement onsite waste disposal systems, including holding tanks, are located and designed to minimize or eliminate flood damage. They also must be designed to minimize or eliminate infiltration of floodwaters into the tank, which could result in discharges from the system into floodwaters.

In order to reduce damage to new and replacement onsite waste disposal systems, including holding tanks, the following minimum requirements shall be followed:

- Tanks foundations shall be embedded to a depth that resists damage during the base flood event, including anticipated scour depth.
- Tanks shall be oriented to resist or minimize wave impacts and moving flood waters. The narrowest dimension of the tank shall be located perpendicular to the flood flow, as best as can be determined.
- Tanks shall be secured so that buoyancy forces will not lift the tank out of the ground. Buoyancy forces shall be those associated with water depths anticipated in the base flood event.
- Tanks shall be located such that scour does not undermine the foundation and the openings of fill lines and overflows must be above the Base Flood Elevation (BFE).
- Back flow preventers shall be installed on all tanks to prevent discharge of sewage into floodwaters.
- Coastal High Hazard Areas (V-Zones) have been determined to have the potential for 3 foot or greater waves, high velocity flows, and soil scour during the base flood event. In V-zones fill may not be used for structural support, and "mound" septic drain fields would generally be prohibited due to the likelihood or scour.
- Disturbance of the primary frontal dune in V-zones is prohibited by the National Flood Insurance Program. By placing a drain field in the primary frontal dune, disturbance is caused and the integrity of the protective dune is compromised. Therefore, there shall be no placement of septic drain fields in primary frontal dunes.

Base flood depths, and costal high hazard area (V-Zone) conditions may be determined using the effective Flood Insurance Study and Flood Insurance Rate Maps (FIRMs).

Herring Point Groin Rehabilitation Project Presented in National Scientific Journal

The groin rehabilitation project at Herring Point in Cape Henlopen State Park, Lewes, Delaware was featured in the *Shore & Beach* Winter 2009 issue. *Shore & Beach* is the Journal of the American Shore & Beach Preservation Association.

The article, titled "Groin rehabilitation at Herring Point, Delaware" was written by our own Michael S. Powell who oversaw the project and Douglas W. Mann, P. E. from Coastal Planning & Engineering, Inc., the engineer who designed the project. They wrote a brief history behind the area where the groins are located. Then they explain all of the analysis that was used to determine the best way to design a project that met the needs of all the diverse groups who would benefit from such a project. Many engineering alternatives were presented, but in the end it was found that rebuilding and extending the groins on the landward side with granite stone was the best method to meet everyone's goals.

Since the groins have been rehabilitated, they seem to be functioning quite well. This is apparent by the amount of beach that has built from Herring Point south to the towers east of Gordon's Pond (see the photograph above and on the next page).

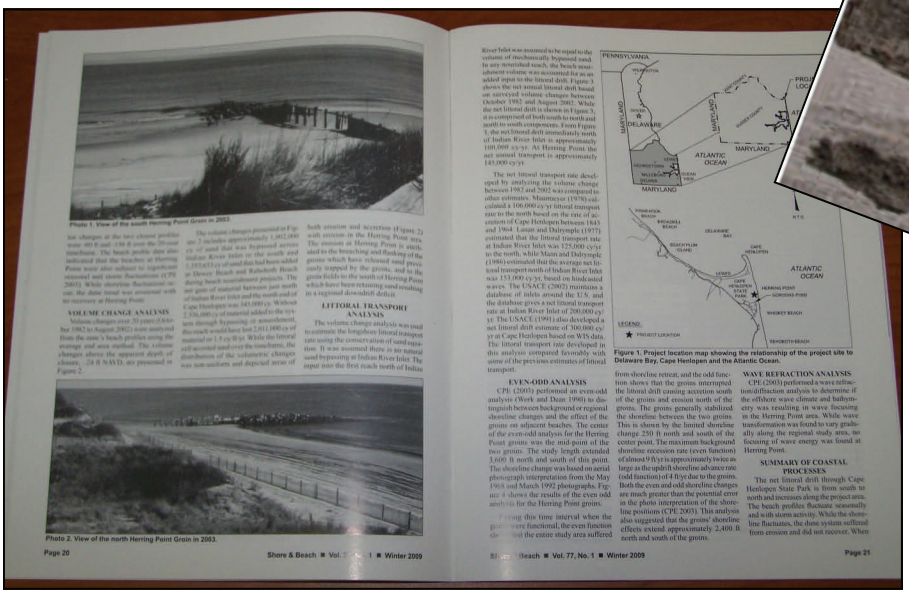

Photo 1. View of the south Herring Point Groin in 2003.

Photo 2. View of the north Herring Point Groin in 2003.

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Figure 1. Project location map showing the relationship of the project site to Delaware Bay, Cape Henlopen and the Atlantic Ocean.

LITTORAL TRANSPORT ANALYSIS

EVEN-ODD ANALYSIS

WAVE REFRACTION ANALYSIS

SUMMARY OF COASTAL PROCESSES

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For Your Reference:

Beach Preservation Act

http://www.delcode.state.de.us/title7/c068/index.htm

Regulations Governing Beach Protection and the Use of Beaches

http://www.dnrec.state.de.us/bechregs.htm

Link to Applications for Coastal Construction

Scroll to the bottom of the page for list of applications

http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/ShorelineCons/Shoreline.htm

FEMA's National Flood Insurance Program

http://www.fema.gov/about/programs/nfip/index.shtm

If you have any questions regarding the information found in this publication, please contact Jennifer Wheatley at (302) 739-9921 or

Jennifer.Wheatley@state.de.us

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