

PEP Talk

The Newsletter of the Peconic Estuary Program

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Peconics Adopts Anti-Eutrophication Program

In September 2007, agencies adopted a progressive plan to protect and restore Peconic Estuary water quality, in an attempt to reverse decades of increasing nitrogen pollution. The Peconic Estuary Program’s Total Maximum Daily Load (“TMDL”) Plan calls for residents and businesses to do they part by reducing their nitrogen inputs by 25% or more. Government is charged with protecting open space and adopting more stringent clearing restrictions and clustering of subdivisions.

Nitrogen gets into the bays in many ways. Sources of nitrogen include: fertilizer use on agricultural lands, golf courses, lawns

and gardens; on-site disposal systems (“septic systems” or “cesspools”); stormwater; sewage and wastewater treatment plants, and atmospheric deposition. Excess nitrogen leads to low dissolved oxygen conditions in creeks and bays. Low dissolved oxygen in the water can be harmful or deadly to many important kinds of fish.

The TMDL was required under the Federal Clean Water Act, as the state listed several waterbodies within the estuary as “Impaired”. The TMDL looks at all the current sources of nitrogen to the system, existing nitrogen loadings, and

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Stormwater Threatens

The Peconics

As rain falls from the sky, much of it will run over our streets, sidewalks and our land and will flow into the waters of the Peconic Estuary. Unfortunately, whatever lies on those surfaces will get picked up by the stormwater and enter the Estuary too. Pollutants such as sediments, nutrients, bacteria, toxics and debris resulting from winter road applications, fertilizers, pet waste, pesticides, and litter threaten the Peconics.

If too many of these pollutants enter our waters they have the potential to reduce water clarity, cause algal blooms, close

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Nitrogen Reduction: Suffolk County's New Initiative

In a nationally significant initiative, Suffolk County approved a law which banned the application of fertilizers, on residential properties, between November 1st and April 1st, effective January 1, 2009. The purpose of the ban is to reduce nitrogen from entering ground and surface waters by restricting fertilizer applications during the time of the year when the ground is likely to be frozen and plants are unable to use the nutrients. The law includes development of a "Best Management Practices" educational course, which will be required for all licensed landscapers, and educational materials for distribution at retail stores.



Studies have demonstrated that approximately one half of the nitrogen in groundwater is attributed to residential fertilizer application.

Recent cost analysis demonstrated that removal of 60 tons N/year, within the Peconic Estuary, would require construction of a one-million gallon per day sewage treatment plant with the initial cost at approximately \$204.60 per lb. N removed and an annual cost of \$27.39 per lb. N removed.

Removal of an equivalent amount of nitrogen by reducing fertilizer use would initially cost \$1.53 per

lb. N removed and an annual cost of \$0.76 per lb. N removed.

Nitrogen (N) is an essential nutrient for the ecology of our streams and bays. However, excess nitrogen can fuel algal blooms that discolor the water and deplete the dissolved oxygen within the water column. Groundwater input is one of the largest contributors of excess nitrogen, in the Peconic Estuary.

To demonstrate commitment to this law, Suffolk County will discontinue use of fertilizers at all of its properties, with the exception of golf courses and the County farm. A committee will be formed to review waiver requests. Agricultural use will be also exempt.

~Theresa Goergen, SCDHS




PEP Talk is published by the Peconic Estuary Program (PEP), a partnership of governments, environmental groups, businesses, industries, academic institutions, and citizens. The PEP's mission is to protect and restore the Peconic Estuary system. Learn more at www.peconicestuary.org.



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shellfishing areas and bathing beaches, and impede recreational use and enjoyment. Anything using these pollutant-rich waters (fish, shellfish, eelgrass, wetlands, and humans), may suffer negative consequences. At present, 4.3% of shellfish beds in the Peconics are closed due to stormwater runoff. The PEP seeks to prevent further closures and reopen beds, where feasible.

In an attempt to protect and restore the water quality of the Peconics, the United States

Environmental Protection Agency (USEPA) requires many of the East End Towns to implement stormwater management and abatement programs to minimize the amount of pollutants picked up by stormwater runoff and construct systems that intercept, retain and treat polluted stormwater runoff before it has a chance to flow into the Peconic Estuary.

Do your part too! To learn more visit <http://www.dec.ny.gov/chemical/8468.html> or <http://peconicestuary.org/WhatUCanDo.html>

~Laura Stephenson, NYSDEC

Citizens Back In Action

We're pleased to announce the Peconic Estuary Program's Citizens Advisory Committee (CAC) has reconvened and is once again making headway in generating public awareness and encouraging community involvement in Peconic Estuary related matters. On January 31, 2008, returning CAC members, as well as some new faces, met at Hampton Bays Community Center where they were briefed with a Program Office update and presented with a new workplan for Public Education and Outreach activities, in which the CAC will have a role in carrying out. By consensus, the CAC granted their approval of this workplan which focuses on the following areas of community outreach: Estuarine Awareness and Education, Nutrient Reduction, Citizen Advisory Initiatives, and Estuarine Protection and Involvement.

The CAC will be meeting monthly until the committee is fully re-constituted. New members are actively being recruited, so if you are interested in playing a role in protecting and preserving the Peconic Estuary, and helping the PEP spread public awareness about the issues facing our estuary, we encourage you to visit our website at www.peconicestuary.org and follow the link on our homepage prompting you to "Join the Citizens Advisory Committee". If you'd like to sign up to become a member of the PEP CAC in person, be sure to stop by the Peconic Estuary Program table at the upcoming Earth Day Celebration being held in Indian Island County Park on Sunday, April 20 from 10am-4pm. PEP staff will be providing estuarine related educational materials and hand-outs to all who attend and will have some fun activities for the kids to partake in as well. We hope to see you there!

~Kimberly Paulsen, SCDHS

Lawn Care Tips To Reduce Nitrogen Pollution:

- Minimize lawn areas, replacing turf with native and other low maintenance plantings.
- Improve soil structure by aerating your lawn and top dressing with compost.
- Grasscycle - leave grass clippings in place (don't bag) when mowing.
- Use the least toxic method for weed and pest control (such as hand pulling).
- Cut lawn no shorter than 3" to encourage deep roots.
- Don't over water lawns (excess water washes out soil nutrients).
- Test your soil annually before any application of fertilizer.
- Apply products sparingly, no more than 1 lb. of nitrogen per 1,000 square feet per year, for example.
- Choose organic fertilizers that slowly release nutrients over time.
- Read, understand and follow all pesticide product labeling.
- Avoid run-off - do not apply fertilizers or pesticides within 100 feet of surface waters or wetlands, when the ground is frozen or when there is a chance of rain.

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how future land uses and practices on the landscape would increase or decrease loadings. The TMDL sets the maximum nitrogen load, from each source, to ensure New York State's dissolved oxygen standards are met.

The TMDL counts on significant reductions in atmospheric deposition of nitrogen through the implementation of federal and state Clean Air Act programs. It establishes limits on discharges from sewage treatment plants ("STP") in Riverhead, Sag Harbor, Shelter Island Heights, and Atlantis Marine World and from stormwater estuary-wide. Additional nitrogen reductions are required at the Riverhead STP during the warm weather months, due not only to the amount of nitrogen it discharges, but also to the location of its outfall pipe which is in an area that is not well flushed with cleaner seawater.

The plan identifies programs and activities that can eliminate or reduce current or future nutrient loads. The TMDL

recommends continuing open space acquisition at all levels of government; preserving native vegetation on properties that are developed or redeveloped, clustering new development; implementing agricultural stewardship programs to reduce fertilizer losses to surface and groundwater; and eliminating or reducing fertilizer losses from landscape maintenance at residential, commercial and institutional properties. The TMDL also considers other topics that can affect nitrogen loading or how nitrogen cycles through the estuary ecosystem. It calls for investigating: removing nutrient enriched bottom sediments; nutrient removal technologies for individual on-site disposal systems; selective sewerage in downtown areas; and shellfish and eelgrass restoration projects. Finally, the plan calls for continued water quality monitoring of the bays and tracking and evaluating the progress and effectiveness of programs being implemented to manage nitrogen.

~Rick Balla, USEPA

Species Snapshot



Every spring, the sandy beaches of Long Island's bays are visited by strange, armored creatures called horseshoe crabs (*Limulus polyphemus*). These animals have changed little in the last hundreds

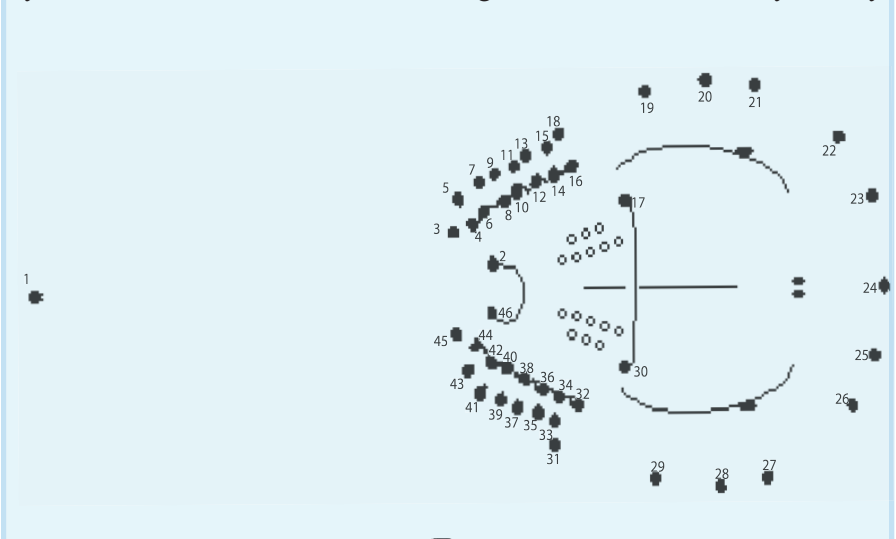
of millions of years. While called horseshoe crabs, they are not crustaceans and share many traits with scorpions, spiders, and insects. The long spiked tail that waves around and appears to be dangerous is actually called a telson, and is used by a crab to flip itself over. They move up onto the beaches in the spring during the full and new moons to spawn where a female may deposit her eggs as deep into the sand as 20 cm. A single female is often surrounded by many males, distinguished by their smaller size and large boxing gloves on the two front legs.

On the under-side of the horseshoe crab, surrounded by its many limbs and covered in bristles, is the crab's mouth. Horseshoe crabs are regarded as generalist feeders, and prefer marine worms and small or thin-shelled bivalves such as mussels and soft-shelled clams. In return, horseshoe crabs can be found in the diets of a number of species. The eggs and larvae of horseshoe crabs are eaten by birds on the beach and fed upon by many fish and crustaceans in the shallow waters. Unless soft from a recent molt, larger horseshoe crabs become immune to most predators due to their big, thick, shells.

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Peconic Pals

Who am I? A little hint - I'm as related to a spider and I am as old as the dinosaurs. If you connect the dots - and still don't recognize me, see above for my identity.



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ADDRESS CORRECTION REQUESTED

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However, adult horseshoe crabs are an important part of the diets of loggerhead turtles, alligators, and some sharks. Many birds opportunistically feed upon upside-down crabs stranded upon the beach.

Horseshoe crabs are legally harvested in the State of New York by licensed fishermen. The crabs are regarded as the best bait to use when trying to trap eel and conch. In Asia where several species of horseshoe crabs can be found, the crabs are eaten as a delicacy. The majority of the harvest in New York occurs during the spring spawning months when the crabs are found in shallow water and are easy to collect. The harvest of horseshoe crabs by fishermen has attracted a lot of attention nationally over the last 10 years. As mentioned above, many shorebirds, some of which are endangered, use horseshoe crab eggs as an important part of their diet. This is especially true in Delaware Bay in New Jersey and Delaware. The extent to which birds on Long Island depend upon horseshoe crab eggs is yet to be determined.

Horseshoe crabs are also very important to the medical industry. Parts of their blood react very strongly to the presence of bacteria and are used to test for contamination in various fields of biomedical research. The eyes of horseshoe crabs are very large and have much in common with human eyes. Research done on vision in the horseshoe crab has led to important discoveries with applications in human medicine. Chitin from the shells of horseshoe crabs can be an important component of surgical sutures and burn wound dressings. In addition to their current medical uses, historically horseshoe crabs were harvested and processed on a large scale for use by the agricultural industry, both as fertilizer and as livestock feed.

~John Maniscalco, NYSDEC