

PEP Talk

The Newsletter of the Peconic Estuary Program

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Eelgrass: the Foundation of Restoration

The importance of eelgrass (*Zostera marina*) to the health of the Peconic Estuary is widely acknowledged. Unfortunately, catastrophic die-offs caused by the

“wasting disease” in the early 1930s, declines in water quality during the mid-20th century, and the arrival of Brown Tide in the 1980s have left the Estuary with less than 20%



Natural seedlings in Noyack Creek; Photo by Chris Pickerell

of its historic eelgrass. Using aerial photographs, Cornell Cooperative Extension (CCE) has determined that over 8,700 acres of eelgrass resided in the Peconics during the 1930s. Only 1,550 acres of eelgrass, mostly east of Shelter Island, were documented in 2000. Reports from local baymen suggest that the most recent large-scale eelgrass losses occurred during 1994.

Since we must understand trends in existing eelgrass meadows before

we can effectively manage and restore the resource, the Peconic Estuary Program (PEP) has funded annual monitoring of submerged aquatic vegetation since 1997. CCE monitors

six different Peconic eelgrass meadows to determine trends in shoot density (indicative of bed stability and reproductive potential), algae species composition (indicative of competitors for light and space), and other parameters. These data are essential for establishing benchmarks to track future trends and restoration efforts. Data from the last 5 years

“Eelgrass planting is critical to restoring diversity in the Peconics.”

~Chris Pickerell, Eelgrass Program Manager, CCE Marine Program

indicate that there has been a gradual decline in shoot density at a few sites
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Open Space: Going, Going, Gone

Ever increasing development is consuming critical habitats and threatening water quality. Of the 113,892 acres of land in the Peconic Watershed’s five eastern towns, almost half is developed, over 20% is still available for development, and over 30% is protected (as of 2001). More than 2,500 parcels, comprising approximately 3,500 acres, have been developed between 1998 and 2001. The Peconic Estuary Program (PEP), based on a myriad of habitat and water quality criteria, considers almost 70% of the remaining land available

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What’s Inside?



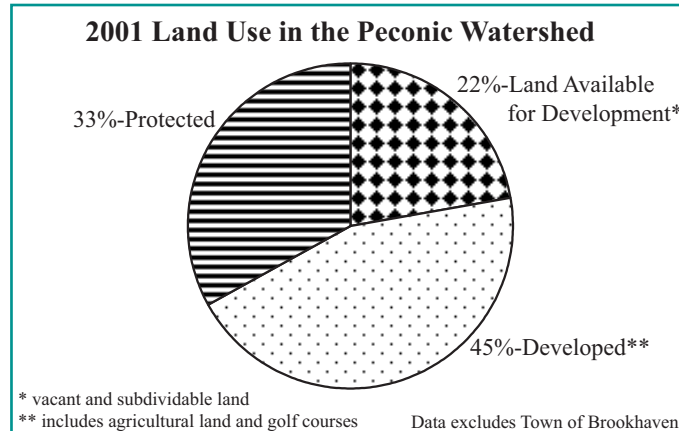
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for development a high priority for protection.

As development pressures increase, the price of land continues to escalate. The most widely used land protection tool is outright acquisition from willing sellers. While the Community Preservation Fund (CPF; the local 2% real estate transfer tax) is the most

of development rights, rezoning and overall better land use practices. It is estimated that the implementation of clearing restrictions would “protect” an additional 3,200 acres in the Peconic Watershed’s five East End Towns, while clearing restrictions *and* clustering requirements would “protect” a total of 3,500 acres. The estimated cost of



successful land protection program on Long Island, raising over \$169 million from 1999 through January 2004, it will not keep pace with the rate of development and loss of critical landscapes. An estimated \$1.375 billion is needed to protect all of the vacant parcels in the watershed that meet at least one PEP-designated environmental criterion. Future CPF revenues could purchase less than 10% of these parcels. The current land acquisition funding, including the additional funding from County, State, and Federal sources, is not sufficient to keep up with the current and anticipated rates of development.

Large amounts of land can also be protected through donations, clearing restrictions, clustering requirements, overlay districts, easements, purchase

acquiring an equivalent amount of open space would be \$355 million (for 3,200 acres) and \$382 million (for 3,500 acres), respectively.

More information can be found in the Peconic Estuary Program’s newly released Critical Lands Protection Plan. This Plan identifies and prioritizes the land available for development in the Peconic Watershed’s five eastern towns for protection and highlights land protection alternatives other than outright acquisition, including clearing and clustering restrictions. The Critical Lands Protection Plan is not meant to be the sole reference for land protection in the region but rather serves as a useful tool for State and local agencies that make land acquisition decisions based in part on estuarine considerations.

~Laura Bavaro, Suffolk County Department of Health Services & Kerri Pogue, The Nature Conservancy



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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Suffolk County Briefs

- County voters recently approved a \$75 million Save Open Space Bond Act to purchase remaining county open space and farmland and build hamlet parks.
- Suffolk County Legislature and County Exec. Levy appropriated \$1.8 million over 4 years for CCE to launch the largest bay scallop reseed program in U.S. history.

Making the Grade

The Peconic Estuary Program (PEP) recently completed its first *Peconic Environmental Indicators Report* and has released it for stakeholder review. The report analyzes the status of nineteen variables that affect, or are affected by, the Peconic Estuary.

While the estuary continues to show signs of stress, overall the indicators point to a healthy system relative to other estuaries nationwide. Significant open space protects natural habitats, groundwater recharge areas, and surface water quality. Dissolved oxygen levels in most of the estuary support abundant flora and fauna. Clean bathing beaches afford recreational opportunities for residents and visitors alike.

Other indicators show signs of considerable environmental duress. Numerous pesticides have been detected in groundwater, and decimated eelgrass beds are not expanding. Local fisheries, especially bay scallops and winter flounder, no longer support commercial harvesting. It is important to note that some of these declines, such as those seen with eelgrass and the winter flounder population, have been seen throughout New England and the Mid-Atlantic, and it is difficult to discern

how local factors may be contributing to the problem. Nevertheless, the PEP continues to focus efforts locally on improving environmental quality for these species.

The PEP plays a major role in protecting and restoring the estuary as a coordinating entity and through its many stakeholders. There are numerous examples of efforts that have been successful to date, such as: funding Brown Tide research; reducing nitrogen loads from sewage treatment plants, agricultural operations and golf courses; developing a prioritization system for open space acquisitions; implementing a Vessel Waste No Discharge Zone for the entire estuary; supporting the establishment of spawner sanctuaries for bay scallops; and discouraging the installation of shoreline hardening structures. The PEP will use the findings, conclusions, and recommendations of this indicators report to evaluate the effectiveness of initiatives and to determine what new programs should be pursued to address existing and emerging priorities, so we can chart a course for the future.

For more information, view the draft final report online at www.peconicestuary.org.

~Shana Miller, NY Sea Grant

New York State Briefs

- Gov. Pataki announced five Clean Water/Clean Air Bond Act awards in the Peconics totaling over \$3.1 million, including projects to restore eelgrass, upgrade sewage treatment plants, and mitigate stormwater.
- Gov. Pataki announced four Environmental Protection Fund awards in the Peconics totaling \$200,000, including projects to study hard clam parasites and the survivorship of scallop larvae from The Nature Conservancy's spawner sanctuaries in the Peconics.
- The NYSDOT recently completed a myriad of stormwater mitigation projects within the Peconic Watershed, totaling over \$2.0 million.

The Peconics Go to Hollywood

The PEP celebrated National Estuaries Day in September by hosting EstuaryLive—a live field trip to the Peconic Estuary streamed via satellite for viewing over the Internet. An estimated 700 students from schools across the United States logged on to the 65-minute program. E-Live segments spotlighted local fauna and macroalgae as well as shellfish and eelgrass restoration. Cornell Cooperative Extension of Suffolk County hosted the broadcast at their Marine Environmental Learning Center in Southold, and the on-screen talent included scientists, governmental officials, and students from Riverhead High School and Quogue Elementary School. To view the Peconic EstuaryLive broadcast, go to www.estuaries.gov or request a VHS or DVD copy from the PEP Program Office.



A Quogue student shows off a hairy sea cucumber.
Photo by Rick Balla

~Shana Miller, NY Sea Grant

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while other sites show little change.

The PEP also funds restoration work. CCE will likely focus on restoring two sites - a site east of Shelter Island and a site east of North Haven - that historically supported eelgrass and have been identified by a GIS-based planting suitability index model. This model integrated water quality data from the Suffolk County Department of Health Services, along with the areal extent of historic and existing eelgrass beds, depth, sediment type, fetch and other parameters, to rank the entire Estuary. CCE's test plantings of over 1 million seeds and several thousand shoots during 2003 and 2004 have confirmed the results of the model.

CCE plants eelgrass using adaptations of two basic methods: seeding and transplanting adult shoots. Their current seeding methods include broadcast seeding and buoy-deployed seeding. Broadcast seeding involves the collection and processing of eelgrass flowers during the summer followed by broadcast of the seeds from a boat in the fall. Buoy-deployed seeding,

a new method developed at CCE, involves the collection and release of seed-bearing flowers on the same day, avoiding storage and handling while mimicking natural seed dispersal. Adult shoot planting methods utilized during the past year include planting at various densities as well as the use of TERF

Why is Eelgrass Important?

- Nursery habitat for numerous invertebrates, including juvenile bay scallops
- Shelter for many fish (e.g., Atlantic silverside) and benthic animals (e.g., horseshoe crabs)
- Food for waterfowl species, including mergansers
- Food web support: living and decomposing eelgrass is consumed by grazers and detritivores
- Produces oxygen through photosynthesis
- Sequesters nitrogen through roots and leaves
- Stabilizes sandy and muddy bottoms
- Reduces beach erosion by reducing the effects of waves and currents

frames (*i.e.*, shallow mesh cages used to hold eelgrass on the bottom until it becomes rooted). CCE has avoided using adult shoots in their work for the last several years, fearing the shoot collection could impact donor meadows, but the discovery that several high energy meadows in the Peconics yield high numbers

of uprooted and dislodged shoots has enabled CCE to reinstate transplants as a viable method. A combination of seeding and shoot transplant methods will likely be used in future restoration projects.

Despite the fact that there is no silver bullet for restoring eelgrass to the Peconics, one thing is clear, we all must work together to improve water quality and limit impacts to existing meadows.

~Chris Pickerell, Eelgrass Program Manager, CCE

Estuarine Explorers

“Water is the driving force of all nature.”

~Leonardo Da Vinci

Be part of the PEP!

Sign up for the Citizens Advisory Committee at www.peconicestuary.org. Attend the meeting in January!

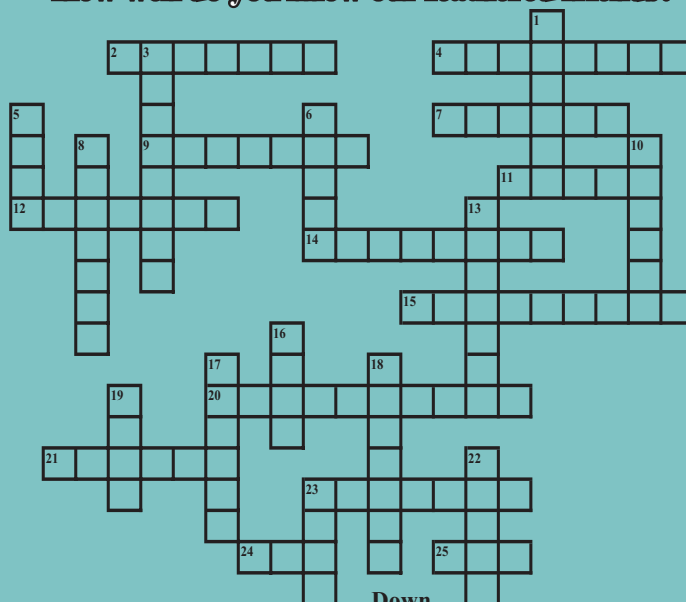
Peconic Must-Sees

Montauk Point State Park (Montauk) is a heavily wooded area at the eastern tip of Long Island where the Peconic Bays meet the Atlantic Ocean. The park is open in the winter and offers trails for hiking and cross-country skiing, as well as water vistas that afford opportunities to spot over-wintering waterfowl like sea ducks. The park also hosts some of the best surf fishing in the world and is located adjacent to the Montauk Lighthouse. For more information, call (631) 668-3781.

Peconic Pals

Just Ducky:

How well do you know our feathered friends?



Across

- A modified scale that keeps ducks warm
- Since they eat both animals and plants, a duck is an _____
- In the summer, Long Island ducks migrate as far north as the _____
- The “second stomach” where food is ground up to aid digestion
- A male duck
- An environment that many ducks call home
- A baby duck
- Eelgrass is a favorite food of these “hooded” ducks that migrate to Long Island each winter
- The new name for the Old Squaw
- A duck’s bones are _____, making them lighter so they can fly
- The most common duck species in LI
- The substance on ducks’ feathers that keeps them from becoming waterlogged
- A female duck

Down

- The season when many sea ducks come to the Peconics
- A “seaweed” that is a favorite food of some diving ducks
- Many ducks _____ underwater to find food
- A mother duck’s group of babies is called a _____
- A marsh habitat critical to many duck species
- _____ ducks are drab-colored to camouflage them when nesting
- What ducks do twice a year
- Labrador retrievers help sportsmen _____ ducks
- The major migratory route that passes the Peconics: the Atlantic _____
- This type of duck does not dive; instead it feeds by ducking its head underwater
- A duck nose
- What ducks do to keep their feathers clean and well-oiled
- During _____, ducks lose their feathers and are flightless

~Shana Miller, NY Sea Grant

Stumped? Log on to www.peconicestuary.org/Kids.html for the puzzle solution.

Species Snapshot

Old Squaw or Long-Tailed Duck (*Clangula hyemalis*)

Known for both its striking plumage and distinctive call, the Old Squaw duck is a common winter visitor to the Peconic Estuary. Their unique call echoes out across the water, sometimes continuously by the gregarious and showy males. Apparently, this constant chatter reminded someone in past centuries of a group of Indian squaws talking amongst themselves. (Seems odd that the males do all the chattering, yet they were likened to “squaws” talking.) Recently, the American Ornithologists Union officially changed the name from Old Squaw to Long-tailed duck to be more socially sensitive.



Photo by Ducks Unlimited

What does he look like? Fortunately his new name is a dead give away. Males of this species are one of the showiest waterfowl, with contrasting black and white plumage and long central tail feathers that extend 6-8 inches beyond the body, sweeping upwards at a 45° angle when the males are on the water. Even the males’ pink, black and soft blue bill is unmistakable. Like all waterfowl species, the females are drab in color, though they also sport a contrasting white, black and brown pattern.

Long-tailed ducks fall into a group of waterfowl known as “sea ducks,” so named because they spend virtually all their time in open waters where they dive to the bottom to feed on crustaceans and mollusks. Long-tailed ducks are probably the best divers of all waterfowl—records indicate that they can dive to depths of over 200 feet. While our bay is not nearly that deep, watch for these birds to slip under the water for up to a minute and come up hundreds of feet away. Long-tailed ducks are typically found in small, loose groups of 5-20 birds, diving for food and occasionally making short flights before plopping down, rather ungracefully, to again dive for food. If you hear the “un-duck-like” call that seems to say “owlllll, omelette, owl, omelette,” or see the striking plumage riding gracefully amongst the coldest and iciest waters of a Peconic winter, surely you have just seen an Old Squaw (oops).

~Craig Kessler, Manager of Conservation Programs, Ducks Unlimited

Peconic Estuary Program

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ADDRESS CORRECTION REQUESTED