

PEP Talk

The Newsletter of the Peconic Estuary Program

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Restoration of Peconic Bay Scallop Populations and Fisheries

Peconic bay scallops once supported a multi-million dollar fishery and helped employ hundreds of baymen prior to the series of brown tides which began in 1985. The decimation of bay scallops by brown tides has been extensively chronicled, but impacts have persisted well past the last major brown tide bloom in 1995. Since then, scallop population densities in most areas have remained low and annual commercial harvests have averaged 1-2 % of pre-brown tide levels.

The primary hypothesis for the inability of populations to recover on their own is that densities and numbers of bay scallops have been too low to permit high rates of successful fertilization of eggs after they are spawned into the water column. In turn, the supply of scallop larvae has likely been limiting.

In 2005, Cornell Cooperative Extension and Long Island University began an ambitious project to attempt to jump-start Peconic bay scallop populations and fisheries by planting large numbers of hatchery-

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Atmospheric Deposition and the Peconic Estuary

The statement “what goes up must come down” has implications for more than just the stock market these days. Living near an estuary, or anywhere for that matter, means that products of combustion which go up the stack of your nearby, or far away, power-plant, chimney or out your vehicle’s tail-pipe, will eventually come down with rainfall and “dry-fall”. Atmospheric deposition is a complex mixture that includes toxic nutrients and substances that may adversely impact surface waters with com-

pounds that may over fertilize and acidify these waters. The introduction of these contaminants in combination with other sources may promote harmful algal blooms or undesirable marine organism growth.

The “man-made” (anthropogenic) atmospheric inputs of carbon dioxide and the oxides of nitrogen and sulfur that result from the high temperature combustion of fuels are nothing new; they have been with us in increasing amounts ever since the dawn of the industrial revolution. However, as our understanding of the problem has improved, we have developed better methods to help control air pollution and monitor progress in its abatement. As part of the effort to obtain scientifically reliable information to help combat air pollution and its deleterious effects on terrestrial

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Get Involved with the Peconic Estuary!!!

The Peconic Estuary Program Citizen's Advisory Committee (PEP CAC) is up and running again! This committee works to spread public awareness of the Estuary while advising the Peconic Estuary Program (PEP) office about important goals and concerns of the citizens of Long Island's East End. The diverse stakeholders involved bring knowledge from their different perspectives together to develop creative outreach programs and serve as a consensus building entity for the Estuary. Many of the same concerned citizens who originally worked so hard to support the designation of the Peconic Estuary as an "Estuary of National Significance", and to establish the PEP, are still working hard today as part of the CAC.

In the past year the PEP CAC has been holding meetings and working on a variety of exciting projects. The CAC helped promote the NYS Department of Environmental Conservation's pesticide removal project, CleanSweepNY, which removed 132,143 lbs of potentially hazardous chemicals from Long Island. They also supported the continued funding of the NYS Environmental Protection Fund, as well as efforts to uphold the Peconic River's current Wild, Scenic, and Recreational River designation status. They have also agreed to work with the Association of Marine Industries (AMI) to provide valuable Estuary friendly boating tips to be included in the annual AMI Boaters Guide, which reaches many Estuary users throughout the region.

While most East Enders rely on or enjoy the Peconic Estuary in some way, sometimes this magnificent ecosystem is taken for granted. The CAC's current efforts are focused on providing new interactive educational programs to remind us all of the importance of the Estuary in our lives, and bring to mind what steps we can take to help protect and restore this natural treasure. Upcoming efforts will include educational radio spots; presence at local events to share updated information; the hosting of a "State of the Bays" Conference; and community workshops to enhance stormwater remediation projects. The CAC will also be working with local municipalities to provide periodic updates on the progress of projects and continuing needs of the Peconic Estuary, and to assist them in taking advantage of new opportunities to achieve the goals of protecting and restoring the Peconic Estuary. In an effort to increase awareness of the Estuary, representatives of the PEP CAC will be heading to community groups (civic associations, homeowners associations, garden clubs, etc.) throughout the Peconic Estuary watershed. ~Jennifer Skilbred

If you would like us to come present to your group or organization, or would like to learn how you can get involved with the PEP CAC, please contact Jennifer Skilbred at Group for the East End: jskillbred@eastendenvironment.org, or 631-765-6450 x.212.

***The PEP CAC meets monthly and is always welcoming new members.**

More information about CAC meetings can be found at www.peconicestuary.org.

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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The PEP CAC Loses One of Its Founders

John Kelly, 93 - Doctor, Avid Fisherman & Environmental Activist from Shelter Island.

Dr. John Kelly was a fierce believer that citizens who banded together could get their government to protect the environment and improve water quality of the Peconic Bays. He acted on this belief regularly, and expected action from public officials with whom he met. Dr. Kelly was a vital member of the core group of citizens who were instrumental in convincing the U.S. Environmental Protection Agency to include the Peconics in the National Estuary Program. Dr. Kelly had an affable way about how he approached things that made most folks want to say yes to him. He was always a gentleman, civil and respectful, even when he disagreed strongly with others. Dr. Kelly undertook research, questioned conventional thinking, and regularly asked thought provoking questions about trying new concepts for improved water quality and habitat of the Peconics.

John Kelly always greeted folks with a large hearty gregarious hello. He was a friend to many, he will be missed. ~Vito Minei, Program Director & Kevin McDonald, CAC Chairman



*Dr. John Bowe Francis Kelly
1915 - 2009*

Calendar of Events

April 7, 2009 - Hashamomuck Pond Watershed Public Meeting (6:00 pm - 7:00 pm)
Southold Town Hall Meeting Room

April 15, 2009 - Citizen's Advisory Committee Meeting (6:30 pm - 9:30 pm), Hampton Bays
Community Center, Hampton Bays NY

April 19, 2009 - PEP at Indian Island County Park's Earth Day celebration. Interactive exhibits,
nature walks, activities for kids and much more! For more information please
call (631) 854-4949.

April 30, 2009 - Reeves Bay Watershed Public Meeting (6:00 pm - 7:00 pm) Flanders Community
Center

For a complete listing of PEP events please go to <http://peconice.ipower.com/PEPcalendar.html>

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reared scallops at higher densities - so that when spawning does occur there is a greater probability of successful fertilization. This endeavor, funded by the Suffolk County Water Quality Protection and Restoration Program as well as the Coastal Management Program of NY State Department of State, has focused on stocking millions of scallops in protective lantern nets (see picture) in Orient Harbor. Our efforts, which represent the largest bay scallop restoration project of its kind in the United States, appear to be working.

We determined that scallops first stocked into lantern nets in Fall 2006 successfully spawned in 2007 and that levels of recruitment of



Photo by: Stephen T. Tettelbach, Dept. of Biology, C.W. Post Campus, LIU

larval scallops to “spat” collectors (mesh bags suspended above the bay bottom) as well as abundance of juvenile and adult scallops on the bottom in the Orient Harbor area were both markedly higher in 2007 and 2008 compared to low levels seen in the two previous years. Larval recruitment at our eight monitoring sites in Orient Harbor in 2008 was up to 15 times higher than respective levels in 2005 and 2006, and the estimated size of the Orient

Harbor juvenile (bug) scallop population in Fall 2008 was 25-30 times higher than in 2005 and 2006. By contrast, larval recruitment and juvenile scallop densities in other areas (Northwest Harbor, Flanders Bay) of the Peconics remained unchanged from 2005 to 2008. These results strongly suggest that localized increases in Orient Harbor scallop populations are the result of our restoration efforts rather than due to a bay-wide phenomenon. Reports from baymen and local fish markets also indicate that commercial harvest of adult scallops in the Orient Harbor area was measurably higher in 2008 than in the last several years.

We are hopeful that by continuing our restoration work in Orient Harbor as well as in other areas, including Flanders Bay, that these efforts will continue to boost populations toward a level at which they become self-sustaining and which can support an important commercial and recreational scallop fishery in the Peconic Bays.

~Stephen T. Tettelbach, Dept. of Biology, C.W. Post Campus, Long Island University, Brookville, NY 11548 and Christopher F. Smith, Marine Program, Cornell Cooperative Extension of Suffolk County, Riverhead, NY 11901

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around the blade to stay in place without expending much energy when rough waters might otherwise wash the seahorse away. Because of its dependence on seagrasses or similar habitats, seahorses are particularly vulnerable to habitat loss and destruction.

By far, one of the most interesting facts about the seahorse is that *male* seahorses become pregnant! Once water temperatures begin to rise, the search for a suitable mate begins. After a pair is formed, they are monogamous during breeding season and, in many cases, throughout their life. If a mate finds itself to be widowed, only then will he/she search for a new mate in the following season. During breeding season (approximately May-October) the seahorse pair meet up, exchange colors cues, interlock their tails and “dance” together for a few minutes before going their separate ways; the next day they will repeat this ritual. Usually on the third day of “courtship”, the pair will mate; and the male receives the eggs from the female, fertilizes them, and carries them for approximately 21 days. Once the male is ready to give birth, he expels fully developed juvenile seahorses.

The depletion of our local seagrass, eelgrass (*Zostera marina*), has not helped the seahorse plight. In fact, the species is listed as “vulnerable” on the World Conservation Union’s red list of endangered species. The hope is that with the restoration of eelgrass, seahorses will once again thrive in Long Island waters.

Cornell Cooperative Extension’s eelgrass restoration programs hopes to release captive bred northern lined seahorses into their restored eelgrass sites in the Peconic bays. ~Alexandra J. Donargo CCE

To learn more, visit www.seagrassli.org

Atmospheric Deposition, from Page 1

ecosystems, agricultural lands and estuaries, the U.S. Environmental Protection Agency and the Peconic Estuary Program has underwritten Suffolk County’s participation in the National Atmospheric Deposition Program (NADP) a national network of over 240 cooperating stations. Every Tuesday since 2003 staff from the office of Ecology have collected rain water samples from the prior week for chemical analysis by the NADP laboratory. The program maintains a database of Suffolk’s station “NY-96” as well as all others at: <http://nadp.sws.uiuc.edu/>. The monitoring station provides information that helps the Peconic Estuary Program measure progress toward meeting the goals of limiting excess nitrogen in local surface waters. In addition, our rainfall monitoring is particularly important for the data it supplies the national network, as our site is the only one located entirely “down-wind” of the New York Metropolitan Area. The data indicates that with an average pH (Acidity) of approximately 4.7, the rainfall deposited on the Peconics is highly acidic. A neutral solution occurs at a pH of 7.0. The estuary waters are commonly found at a pH of approximately 7.8. Rainfall in the acidic pH range that occurs in The Peconics may impact survival and productivity of marine organisms. Unfortunately, over the last several year the data trend has been toward a slightly more acidic rainfall. Listed below are a few things you can do to help decrease atmospheric inputs. ~John Bredemeyer SCDHS

What can you do to decrease your atmospheric inputs?

- Burn fuel as efficiently as possible and reduce consumption of fuel to the extent possible
- Properly insulate your home to decrease heating fuel consumption
- Have annual tune-ups performed on furnaces and motor vehicles

For more details, go to www.peconicestuary.org, click, “Become a Peconic Partner for Clean Water!”

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Species Snapshot: Seahorse

Many people are surprised and excited to learn the northern lined seahorse, *Hippocampus erectus*, is native to the Peconic Estuary. Actually, this species ranges from Canada to South America along the Atlantic west coast, and is one of 33 seahorse (*Hippocampus spp.*) species found worldwide. As with most temperate fishes, *H. erectus* lives in shallow, vegetated habitats during the summer months and migrates to deeper waters for winter. This species lives for approximately 2-5 years and grows to a maximum height of 7.48 inches.



Photo by: Kimberly Petersen CCE
Pregnant male seahorse

Though dubbed by the Greek as “horse” (hippo) and “sea monster” (campus), the seahorse is actually a slow-moving, non-aggressive creature with genuinely unique characteristics. *Hippocampus* species have skin (no scales), eyes that can move independent of each other, and a prehensile tail. *H. erectus*, in particular, has white lines down the neck and white dots on the tail. As with all seahorses, *H. erectus* is a master at camouflage and able to change colors ranging from ash grey, orange, brown, yellow, red, and black. This allows seahorses to both evade predators and aids in its success in hunting prey, including amphipods, copepods, and other small crustaceans.

Complex habitat structures, like eelgrass meadows, are advantageous to a predator like *H. erectus*, permitting it to utilize its natural ability of slow methodical movement and visual orientation to stalk prey. Seagrasses have long been considered their preferred habitat source. A seahorse will use a blade of seagrass as a “holdfast”, wrapping its tail

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