Peconic Estuary PROGRAM

Fall Newsletter 2019

What's Inside?

November 1st - April 1st

Local Law 41-2007 prohibits lawn fertilizer application between November 1st through April 1st in Suffolk County. During this time period, lawn grass doesn't grow rendering fertilizers useless. The purpose of this law is to reduce the amount of nitrogen released into our groundwater and surface water to reduce harmful algae blooms and hypoxic, or low oxygen events in our waterways. Retailers are required to post signs near fertilizer displays notifying customers of the date restrictions. Violators, whether it be homeowners, landscapers or other parties risk fines of $1,000. Laws like these help us to develop cleaner and safer water.

Climate Change and the Peconic Estuary

Climate Change is impacting the Peconic Estuary. Additional greenhouse gas emissions from the burning of fossil fuels create a thicker blanket of warmth around our planet. As a result, lands and oceans around the world are getting a taste of a new reality. The Peconic Estuary is no different - increasing water temperatures, changes in precipitation patterns, sea level rise, and ocean acidification are top impacts for our home base. We have control over what we do in our daily lives and the choices we make. Carpooling, riding your bike, getting an eco-friendly vehicle for your next car, choosing alternative sources of energy like solar, turning off your lights, and planting trees are all ways you can reduce your carbon footprint! As climate change is upon us, it is good to be aware of what our present and future will look like so we can adapt, mitigate, and plan for a healthier and resilient tomorrow.
By Lauren Scheer

Temperature: Conservative projections for the Long Island region include air temperature increases ranging from 3°F to 5°F by 2050, along with greater temperature variability, increased seasonality, and higher frequency of extreme temperature events. Ocean temperatures in our region are expected to rise between 4°F and 8°F over the next century.

Precipitation: While increases in annual precipitation are expected to be relatively minor, the amount of precipitation falling as part of an "extreme" precipitation event and the frequency of such events is expected to increase, as is the frequency of drought.

Sea Level Rise: Globally, sea levels are rising in part due to expansion of oceanic waters as average temperatures increase and in part due to increased amounts of available freshwater from melting glaciers and land-based ice. Locally, sea level is expected to increase from 2 to 5 inches by the 2020s, and 7 to 12 inches by the 2050s. Rising seas are likely to causes stresses on habitat, human populations and natural resources. As sea level increases, we may expect an increase in demand for hardened shorelines. An environmentally beneficial alternative to hardening shorelines is construction of living shorelines which also have positive impacts on habitat. Read about our living shoreline project on page 06.

Ocean Acidification: As an increasing amount of carbon dioxide (CO_2) accumulates in the atmosphere, there is a similar increase in the amount of CO_2 that is transmitted to the oceans. When CO_2 dissolves in salt water a series of chemical reactions take place that result in a decrease in the overall pH of the water, meaning that the water becomes more acidic. The process is called ocean acidification. The ocean pH is now lower than any time in the last 420,000 years and if current trends continue, the average pH of the oceans could drop by as much as 0.5 pH units relative to pre-industrial levels. PEP holds a seat on the NY Ocean Acidification Task Force working with partners to create a strategic plan to deal with coastal acidification on the East End of Long Island.

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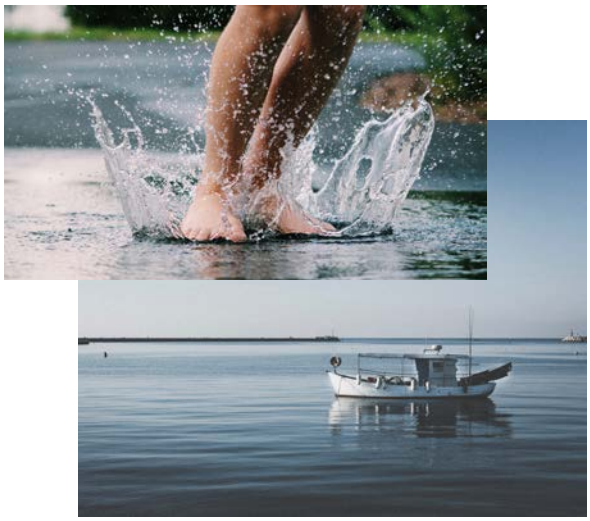
Water Quality: Changes in precipitation patterns, in particular the projected increases in total precipitation and extreme rain events, will likely lead to increased land based runoff of nutrients, herbicides, and pesticides and may also lead to increased atmospheric deposition. Additionally, increases in sea level will likely result in regular inundation of septic systems in coastal communities, either through regular tide cycles or elevation of groundwater level. This will lead to increases in the amount of nitrogen and pathogens transmitted directly to estuarine waters and contamination to our drinking water. Groundwater supplies are being threatened as sea level rises. The saltwater interface will increase in elevation and will result in the reduction of thickness of the freshwater aquifer system. This is a threat to our drinking water supply and our freshwater fed habitats.



Harmful Algal Blooms: The many impacts of climate change are likely to directly influence the occurrences, types, abundance, distribution and duration of harmful algal blooms in Peconic Estuary waters. Increased nutrient loading to the waters of the Peconic Estuary will provide more food for harmful algal blooms. Additionally, since harmful algal blooms generally occur during the warm summer season, increasing water temperatures may result in earlier and more frequent blooms. Warming temperatures could also prevent mixing of the water and allow the algae to grow thicker and faster.

Marine Habitats: Climate change is linked to the loss of eelgrass, wetlands, and other marine habitats, which provide an important feeding and nursery habitat for recreational and commercial fisheries. Research suggests that rising water temperatures and reduced water clarity are contributing to the loss of eelgrass beds. Wetlands can migrate inshore gradually with rising water levels. However, the rate at which the sea level is rising is making it difficult for wetlands to migrate inshore fast enough. In many cases around the Peconic Estuary low marsh plants are not able to hold their ground and high marsh plants are becoming more dominant in wetlands. In areas with significant coastal development and shoreline hardening, coastal habitats will be prevented from migrating landwards as sea level rises.

Fish Populations: Rising average water temperature has the potential to alter the species composition throughout the Peconic Estuary. Fish surveys show that since 1987 the average number of warm-adapted species has increased in the estuary while the average number of cold-adapted species has decreased. Since the estuary consists of a diverse community of native marine species which rely on specific food resources and habitats to survive, it is unclear exactly how a range in shift of immigrating warm water tolerant fish species to the estuary and emigrating cold water fish species from the estuary will alter ecosystem dynamics for native community members. Increasingly acidic oceanic waters limits the ability of calcifying organisms, like shellfish, to build their shells or skeletons.

PEP contracted with Anchor QEA to develop a Critical Lands Protection Strategy to better understand the risks of Climate Change and how to protect and prioritize land in the face of climate change. Read more about the project on page 06.

Wildlife Monitoring Network and Citizen Science

By Lauren Scheer

Getting the conversation started...

Wildlife monitoring is a significant piece to the puzzle for understanding our ecosystem. When we understand species' migration routes, population numbers, favorable habitat, behavioral patterns, and what their role is in the ecosystem - this knowledge sheds light not only the species but on the status of our water quality and habitats. There are a handful of species that have become "Indicator" species for our environment. Beyond this, monitoring programs collect data that can help guide decision-making for shoreline resiliency, conservation management and land-use planning. ***With species in mind, we can better plan for a future that lives in balance with them.*** We can make choices that are good for both the community and our wildlife.

Our Citizens' Advisory Committee meeting in September sparked the beginning of a unified network for wildlife monitoring and citizen science. ***Like with many projects, working together as a community will help us reach our goals for the health of our bays more efficiently and effectively.*** We kicked off the meeting with Guest Speaker, Mike Bottini of Long Island Nature Organization, who presented on his River Otter Project and shared where river otters have been found (like the Peconic Watershed!) and how to identify evidence while out in the field.

Seatuck Environmental Association's John Turner and Elizabeth Hall presented on their Diamondback Terrapin Project, showcased a Terrapin Excluder Device that reduces bycatch of the species, and introduced Terrapin Watch Survey 123 - an electronic submission form that will expand monitoring for terrapins throughout a wide geographic footprint. You can document terrapin sightings from anywhere on your phone or computer! ***Apps like these are the future of monitoring and citizen science.***

Following Seatuck's expertise on terrapins, the Peconic Estuary Program introduced our Diamondback Terrapin Monitoring program that began in 2017 for the East End. Once harvested as a delicacy, terrapin populations declined drastically. Although harvesting has not been of top concern in recent years, land development and shoreline hardening have become major threats. We can determine where terrapin nesting habitat is located around the estuary by surveying salt marshes for their activity. ***This data can guide conservation and land use management in the future.*** Environmental groups are encouraged to lead terrapin monitoring programs to contribute. If interested, please contact the Peconic Estuary Program at peptalk@peconicestuary.org.

The steps ahead...

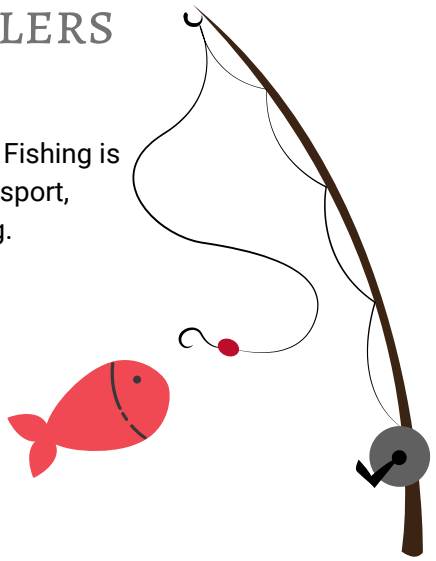
A fruitful collaboration for the Peconic Watershed and Long Island begins now. Environmental partners and citizens discussed how we should best collect wildlife data going forward as a network. Our meeting brought about ideas to utilize existing surveys or apps already in place for citizen science, avoid overlap among environmental organizations by joining forces, and have multiple species monitoring projects go to one database for easy data analysis and citizen participation. Protocols and unified outreach messaging will be developed as we work to address these points. And just like that - an engaging discussion has planted the seed, and the start of this collaborative network has taken root.

Hard work is ahead of us, but while we combine efforts and develop a cohesive monitoring network and database, check out some existing efforts around our community: PEP's citizen science programs, Seatuck's Terrapin Watch, Group for the East End NY State Wildlife Action Plan, and Cornell Cooperative Extension of Suffolk County & NYSDEC's Horseshoe Crab Monitoring program.

You can easily be involved. Training workshops will be scheduled before monitoring seasons begin. Visit the PEP website and social media channels to find out when.

3 Tips for Recreational Anglers

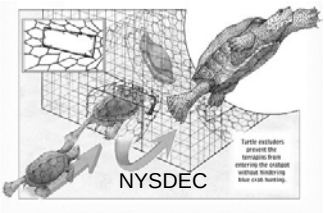
By Adelle Molina



Fall is a popular fishing season for many recreational anglers across Long Island. Fishing is a great way to interact with nature and is a family-fun activity. When enjoying this sport, keep in mind the practices we can adopt to reduce the negative impacts of fishing.

Know and follow the laws

Avoid an expensive ticket by abiding by all current fishing rules and regulations. Make sure to always have your valid permit on hand, and check out the DEC's website for updates to the bag limits, size limits, or seasons, which are all subject to change from year to year. Remember that recreational anglers are not allowed to sell their catch; you may consume it and/or gift it to friends and family, but it is illegal to sell fish caught through recreation. Finally, if you are a crabber, NYS regulations require that TEDs (turtle excluder devices) measuring 4-¾" x 1-¾" be installed on all funnel entrances of non-collapsible crab pots set in creeks, coves, rivers, tributaries, and near-shore harbors. You can acquire TEDs from Seatuck Environmental Association.

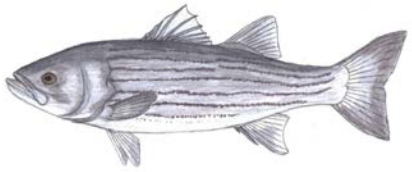


Remove debris and leave no trace

Leave no trace is always a rule of thumb when enjoying the great outdoors. Whatever you bring with you to the beach, the dock or on your boat, make sure to bring it back home with you. Don't throw cigarette butts into the water and make sure to use trash receptacles for any waste you generate while fishing. If you break your line or decide to discard of any fishing equipment, make sure to properly dispose of it in either a trash can or in a fishing line recycling container. PEP has monofilament recycling stations across the estuary as do some of our partners. Furthermore, if you happen to find or drag up old fishing pots, old line, or any derelict fishing gear from the water, please dispose of it properly. Do not throw it back in. Gear can endanger and kill marine life.

Keep "trash" fish

While we understand that certain fish species are more desirable than others, we are also saddened to see edible fish left discarded on the beach. Striped bass may be a favorite for many anglers, but did you know that some of the more abundant species that look ugly or inedible are actually quite delicious? Spiny Dogfish and Sea Robin are great examples. The Sea Robin is often referred to as a "bait stealer" as it typically gets caught while trying to catch other fishes; anglers often throw them back into the water because of incorrect perceptions that it is not tasty or is hard to clean. If you don't want to take a fish home, save its life and please throw it back, do not leave it on the beach. But if you decide to keep it, they are not as difficult to clean as they may seem. With a couple of fish you can easily make a meal to feed your family. You can make Sea Robin salad with celery and mayo, which is delicious! You can also sauté these fish, bake them, or fry them. Don't say no before you try it!



Striped Bass

Spiny Dogfish

Illustrations: Amanda Levine

Peconic Estuary Program Updates

PEP's Revision of the Comprehensive Conservation and Management Plan (CCMP)

The Peconic Estuary Program has been working with our stakeholders to revise our Comprehensive Conservation and Management Plan. We have gained great feedback from the community as to what environmental issues we should focus our work around for the next 10 years. In October, PEP held three Public Meetings during a 30 day public review period to gain comments on the issues, goals and objectives that will shape PEP's and the Peconic Estuary's future. Final CCMP to be completed: December 31st, 2019.

Peconic Estuary Solute Transport Model

Contracting with United States Geological Survey, this Solute Transport Model will be a tool to estimate time-varying nitrogen loading rates to the Peconic Estuary resulting from wastewater and fertilizer inputs to the groundwater.The Model will be used to simulate the response of loading rates to the Estuary due to possible wastewater and fertilizer-management actions. Model Development phase and scenario prioritization is being discussed at stakeholder meetings. Next project meeting on December 4th, 2019. Anticipated completion in 2020. https://www.peconicestuary.org/protect-the-peconic/priority-issues-in-the-peconic-estuary/peconic-estuary-solute-transport-model/

2nd Annual Estuary Day 2019 at Theodore Roosevelt Park in Oyster Bay was a success!

To kick off National Estuaries Week, the three estuary programs - the Peconic Estuary Program, Long Island Sound Study, and South Shore Estuary Reserve - host Estuary Day to celebrate the beauty and natural resources that estuaries have to offer. The theme this year was Marine Debris. Lectures, activities, and environmental partners focused on educating attendees about the impacts of micro-plastics, fishing line and other macro-plastics, and promoted ways the community can reduce their plastic pollution footprint. Estuary Day was held in Long Island Sound Study's watershed at Theodore Roosevelt Park in Oyster Bay. Next year, Estuary Day will be held in the Peconic Estuary watershed, so stay tuned for details!


Photo Credit: NYSDEC

Living Shoreline Pilot Project- Widows Hole Preserve, Greenport

PEP contracted with Cornell Cooperative Extension and Peconic Land Trust to create a living shoreline that provides habitat for wildlife and protection from storms and sea level rise. The project was completed in August 2019. The site is a great educational opportunity for school groups.



Hardened Shoreline GIS Mapping Project

With the help of two interns, PEP completed a GIS mapping project to quantify the amount of hardened shoreline in the estuary. This supports Action 3, under Objective 9 in the Habitat Restoration Plan. The last survey was in 2003. An overview of the Hardened Shoreline GIS Mapping Project was presented at the PEP Natural Resources Subcommittee meeting in June. A final report is anticipated in 2020. The results are being reviewed and ground-truthed in advance of final report distribution.


Critical Lands Protection Strategy (CLPs) Update and Climate Ready Assessment Services for PEP and Shinnecock Indian Nation

PEP contracted with Anchor QEA and the project was completed in September 2019. Objectives for this project are to update the Critical Lands Protection Strategy for the Peconic Estuary watershed to identify lands that should be prioritized for protection, and assess the climate change risks to the Peconic Estuary watershed and the Shinnecock Indian Nation to develop strategies that better prepare environmental restoration and protection programs for impacts of climate change. Final report and products will be distributed.

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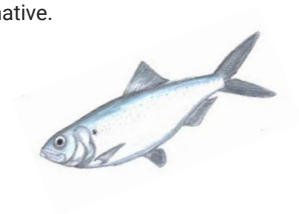
Expansion and Monitoring of the Town of Southold Living Shoreline Demonstration Project

Peconic Estuary Program is contracting with Cornell Cooperative Extension. Project is underway. Expansion to an existing Town of Southold Living Shoreline Demonstration Project contract with the Town of Southold Trustees and the Suffolk County DEDP. Goal is to establish a larger geography of the project and monitoring services to run in tandem with the existing project to quantify nitrogen and pathogen uptake results and assess the effectiveness of the living shoreline to mitigate nitrogen pollution in the Peconic Estuary with Spartina alterniflora and ribbed mussels. Expected project completion in August 2020.

Upper Mills Dam Fish Passage Project

Contracting with L.K. McLean Associates for engineering design/permitting services. The fish passage preferred preliminary design alternative was selected at an April 9th, 2019 stakeholder meeting. Developing engineering designs for selected design alternative.



Woodhull Dam Fish Passage Project

Suffolk County contracted with L.K. McLean Associates for engineering design/permitting services.
NYSDEC WQIP Funding awarded for fish passage construction. Construction bids received in the summer exceed current available funding. PEP is securing additional funding with a goal of completing construction in 2020.

Seagrass Bio-optical Model

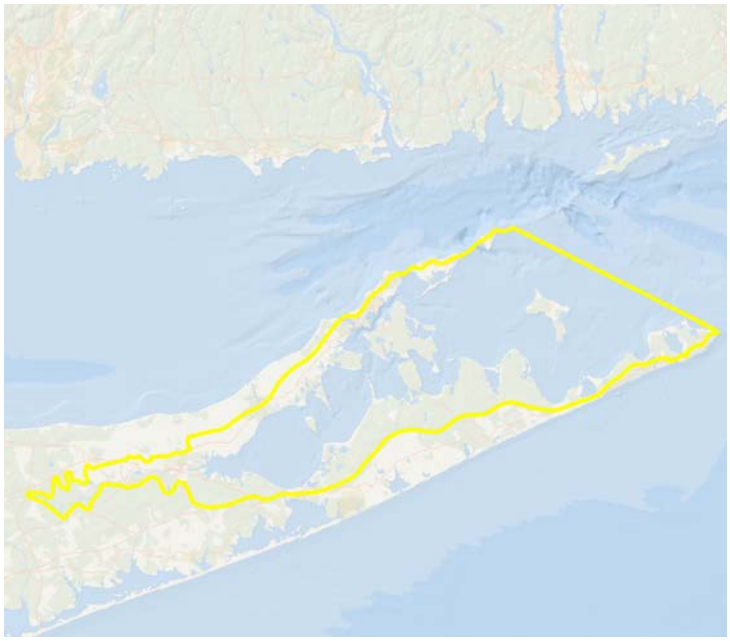
PEP contracted with The Research Foundation of SUNY Stony Brook. The project completed in September 2019 and provides site specific information to inform eelgrass management and restoration programs. This project will lead to a better understanding of specific light and temperature requirements for eelgrass in the Peconic Estuary. This is the critical next step towards understanding the threats to the eelgrass community and where restoration projects have the best probability of success. Final report and products will be distributed. A GIS tool is being developed and will be available to guide resource management and restoration goals.
Link to the project presentation at the August 15th TAC meeting:
https://www.peconicestuary.org/peconic-estuary-seagrass-bio-optical-model-project-presentation-kaitlyn-otoole-2018/

Conceptual Habitat Restoration Design Planning in the Peconic Estuary

Peconic Estuary contracted with Land Use Ecological Services, LLC.
The project was completed in September 2019 and final reports will be distributed. Conceptual habitat restoration designs were developed for the following identified priority sites:
a. Southold: Narrow River Road Wetland Restoration
b. Southampton: Iron Point Wetland Restoration
c. East Hampton: Lake Montauk Alewife Access and Habitat Enhancement
d. Riverhead: Meeting House Creek Main Road Wetland Construction/Restoration
-2016 Suffolk County Capital funds have been secured for implementation of the Lake Montauk project.
-PEP secured 2018 EPA Funds ($173,719) for design/implementation of the Meetinghouse Creek project.

Estuary-Based Project for Schools!

If you are interested in conducting an estuary-based project with your class or after school group, please contact PEP's Education and Outreach Coordinator at peptalk@peconicestuary.org to make arrangements. Whether out in the field or on the grounds of your school, we are happy to discuss and implement project ideas that fit best into your curriculum.



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