

SUMMER NEWSLETTER

Protecting and Restoring Long Island's Peconic Bays

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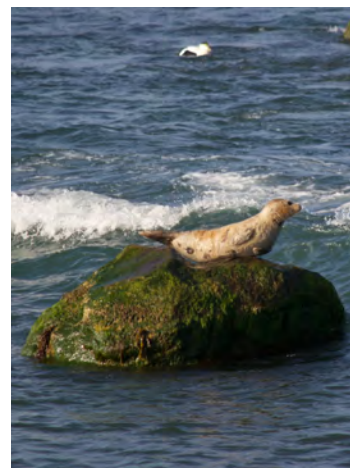
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6 best places to buy native plants on the east end.

The PEP is offering an exciting program offering up to \$500 for residents that live within the Peconic Estuary watershed who install rain barrels or plant native vegetation on their property. This program will expire in September 2019 so don't miss out!

Interested but not sure where to start? You can check out our native plant database to help you decide which natives you like best. Not sure where to purchase natives? Peconic Herb Farm, Long Island Native Plant Initiative, Warren's Nursery, Trimble's Nursery, Long Island Natives or Fort Pond Native Plants are aware of our program and have many native plants to offer.





The Importance of The National Estuary Program

by Dr. Alison Branco, PEP Director

In 1992, the Peconic Estuary became one of 28 estuaries in the United States that are part of the National Estuary Program (NEP). The NEP was created (and reauthorized by Congress most recently in 2016), to protect and restore “estuaries of national significance” recognized for their importance to the people, environment, and economy of this country. This created the Peconic Estuary Program (PEP), which brings together government agencies at all levels, industries, scientists, citizens, and environmentalists with a common purpose: to Protect and Restore Long Island’s Peconic Bays.

As an NEP, the PEP and its partners developed and are now implementing a Comprehensive Conservation and Management Plan, which facilitates coordination between agencies and develops priority projects for water quality and habitat protection with the input of local stakeholders. We use NEP funding provided by the U.S. Environmental Protection Agency to leverage state, local, and private resources, making federal dollars go many times further than they would alone. In 25 years, the PEP has generated resources and technical assistance for countless projects to reduce and prevent pollution in our region, partnering with companies, communities, farmers, schools, and homeowners. Together with agency efforts, this has reduced contaminants going into our ground and surface waters, improved critical habitats, and created new opportunities for people to enjoy the outdoors and local sea-food.

Like us, each local NEP demonstrates real environmental results through on-the-ground restoration and protection. Each NEP works on local

environmental and economic priorities and engages local communities as partners. We use non-regulatory approaches and the best science available.

The NEP is making a difference here, and around the country, but we still have a long way to go. Like many estuaries around the country, the Peconic Estuary continues to suffer from water quality challenges, and people continue to flock to the coasts to live, work, and play. Water doesn’t stop at state boundaries, and everyone needs clean water. So we need the NEP now more than ever. To learn more about the National Estuary Program, please visit NationalEstuaries.org.





The Case for Dam Removal

By: Long Island Sound Study Habitat Restoration & Stewardship Coordinator and PEP Program

Many dams in the United States are aging, unsafe, and no longer serve their original purpose. Dams that once harnessed water power to serve our commerce, industrial, and recreational needs are now primarily hindering the movement of migratory fish (such as blueback herring and alewife) to and from spawning habitat which has resulted in a decline in fish populations. Although dam removal has occurred throughout the United States, few examples exist in NYC and Long Island.

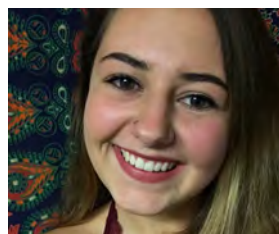
On October 18, 2016, scientists, natural resource managers, regulators, and concerned citizens across Long Island and NYC came together at Hofstra University to discuss the benefits of dam removal. At the workshop, partners learned about the history and current status of dams and migratory fish in our area, discussed the benefits of dam removal through dam removal success stories, and obtained some insight into New York State regulations and how they influence dam removal projects. The workshop and afternoon field trip to a potential dam removal project site was coordinated through a partnership between Long Island Sound Study, Peconic Estuary Program, Seatuck Environmental Association, and the Hofstra University Biology Department.

While the installation of fishways is a viable and successfully proven option for fish passage, continued maintenance and monitoring is required with minimal benefits to overall river water quality. Dam removal reduces maintenance and the associated long term costs while providing multiple benefits including reduced sediment and nutrient loads, decreased water temperatures, and restored invertebrate passage. While dam removal seems to be ideal, it can be a difficult choice for communities that are unsure about the impacts to their waterfront properties. The first step to producing more dam removal projects is starting the conversation with local project partners who can communicate benefits and success stories of dam removal to alleviate stakeholder concerns.

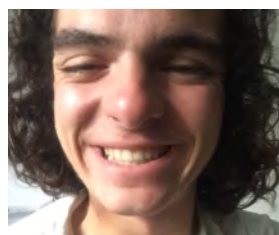
Welcome PEP Summer Interns! Horseshoe Crab Monitoring



Ashley Longo is a recent college graduate. She has a B.S. from Eckerd College majoring in marine biology. .



Mary Bertschi attends Stony Brook University majoring in Marine Vertebrate Biology and Ecosystems and Human Impact.



Nicholas Leone is a Sociology major going into his junior year at SUNY New Paltz.

Water Quality Monitoring



Susanna Osinski attends Cornell University to study marine biology. I am planning to take over my family's oyster farm in a few years.

Salt Marsh Restoration



Gabriella Green attends SUNY Oswego to study Geology and looks forward to graduation this December.



Best Management Practices for Summer Visitors and Residents

Best Management Practices for Summer Visitors and Residents

The Peconic Estuary Program needs your cooperation to ensure the successful restoration and protection of the Peconic Estuary. When visiting the Estuary and taking part in recreational activities this summer, please be mindful of the environmental value of the places you visit and be respectful of the wildlife and people who live in the watershed. Understand how you play a role in promoting clean water and a healthy environment for better boating, swimming and fishing. Follow the tips below to be part of the solution, not the problem!

Ecotourism: *is responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.*



Keep the Environment Trash Free - Bring back what you take out and recycle as much as possible. Fishermen can recycle their monofilament fishing line at one of the PEP receptacles located throughout the Estuary. See an area with litter to pick up? Consider taking a bag to pick up trash along your journey or invite others to help you clean up a shore or beach. Not only is it a great way to help keep the outdoors beautiful, but it also protects wildlife that might eat or get tangled in the garbage. Plastic pollution can be particularly dangerous in the marine environment.



Protect Habitats and Wildlife

The Peconic Estuary is home to some of the most valuable and rare habitats in the world. Unfortunately, development pressure and human use activities can negatively impact natural habitats and the diversity of life in the region. When hiking in the many parks throughout the Estuary, stick to marked trails to avoid harming native flora. Visitors to the seashore can protect fragile coastal areas by not walking on beach grass and dunes. Keep a respectful distance from wildlife and never feed wildlife, for any reason! Feeding animals makes them habituated to and reliant on humans, which often harms the animal. Boaters can help protect shoreline habitats by complying with no wake zones- excessive wakes erode the shoreline and can interrupt nesting waterfowl and shorebirds.





Protect our Eelgrass Meadows

The value of eelgrass is immeasurable, affecting all of us who live and recreate on Long Island. Eelgrass is habitat and nursery ground for the majority of life in local waters, and without it, finfish and shellfish populations dramatically reduce. Eelgrass beds have rapidly declined in the last few decades to 20% of previous acreage. When boating, stay in marked channels, look out for eelgrass beds and avoid boating or anchoring in these fragile habitats. Learn more at SeaGrassLI.org.



Reduce Stormwater Runoff

Stormwater runoff is a major issue facing waterways. When precipitation from storms hits paved surfaces it flows towards the bay, picking up pollutants along the way. These pollutants can cause unsafe water conditions for marine life and people. Help protect the bays from stormwater runoff by acting responsibly when at the dock and in the marinas. Refrain from over-using a hose to minimize the runoff of potential pollutants. Collect paints and chemicals used for boat maintenance and create barriers on ground surfaces so that rainwater does not carry toxic materials into the harbors and bays. Use waterbased paints and biodegradable cleaning agents when feasible. Residents should consider reducing lawn areas and instead "bayscape" with native coastal plants that filter water pollution.



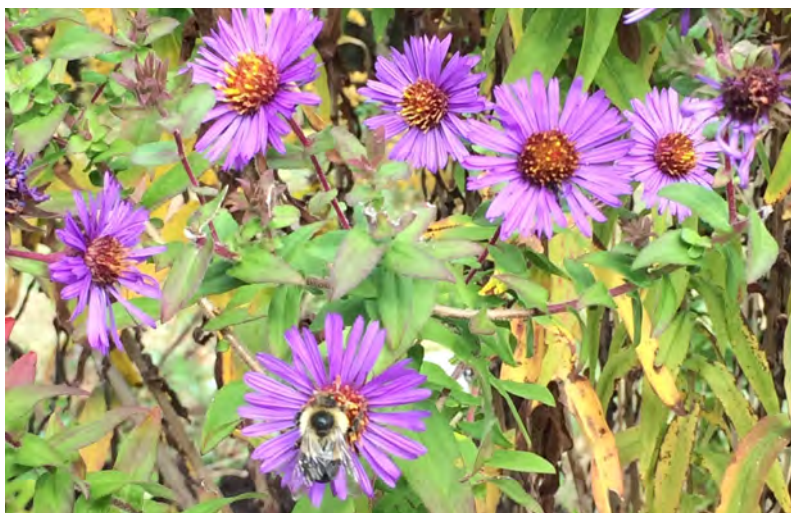
Nutrient Mitigation

Excess nutrients are causing major issues in estuaries throughout the entire world including the Peconic Estuary. As nutrients from fertilizers, septic tanks, pet waste and other sources make their way into local waterways they can cause algal blooms, which remove oxygen from the water, causing dangerous conditions for many fish and other organisms. The entire Peconic Estuary is a No Discharge Zone, which means treated and untreated discharges from marine toilets are prohibited. Use a pump-out facility for disposing of sewage from your boat. At home, reduce or eliminate fertilizer use, and have your septic system regularly pumped out. Also, please pick up pet waste!



Know Your Environment and Follow the Rules-

Read about and observe the diversity of nature around you. Become familiar with environmental regulations, where you live and travel. Check the New York State Department of Environmental Conservation website for fishing regulations and closures.



The Value of Native Plants

by John Turner

Three overarching environmental problems facing the Peconic Bay region, all of Long Island, and indeed much of the United States, are: 1) excessive nitrogen pollution of underground aquifers, surface lakes and rivers, and coastal harbors and bay, 2) the accelerating loss of biodiversity; and 3) an alarming decrease in the number of pollinating insects that provide such vital life sustaining services to important agricultural crops and native species.

While at first blush these problems may seem to be unrelated, they share a common thread – the continuing loss and replacement of native plant species by lawns and by the planting of a limited suite of non-native plant species - hostas, azalea and rhododendron come to mind as popular choices. Grass, along with these other wildflowers and woody species, typically require extensive fertilization, usurp native species that support insects, and provide little to no nectar, pollen or any other plant part (leaves) to bolster native insects, especially important pollinators.

And I confess to being as guilty as anyone and as an example, I offer my home and property in Setauket that we moved into almost a year ago.

Large grassy front lawn and even larger back lawn. Ornamental trees and shrubs along the perimeter, not a single one of which is native and a few species of which are invasive such as Norway Maple. Probably what you would consider the classic suburban American yard. I've come to realize my property is impoverished, close to being a biological desert.

And to drive home the point of my sterile domain, let me mention a shrub in the side yard. Here, the prior homeowner had planted an ornamental viburnum that up until a week ago, produced strongly fragrant white flowers that bloomed steadily for two weeks. The fragrance was so strong I could smell the shrub in the backyard. Certainly a plant so fragrant would attract a variety of pollinating insects, so I checked it daily, expecting to enjoy a hum of activity. In all the trips I saw nothing, save one small moth that fluttered by; I'm not even sure the moth was attracted to the flowers as it continued past and flew out over the driveway. But I've come to realize, it doesn't have to be this way. All it takes is the planting of native plants. So, as many homeowners are finding out, I know one effective way to make a meaningful contribution toward improving the quality of the local



environment is to plant native species in the area around your home. I've planted a few oaks, walnuts, three sweet pepperbush shrubs, bush clovers, and goldenrods. These plants add diversity, don't require fertilization but supplant non-native plants that do, and provide gifts of nectar to countless insects.

Want specifics as to how planting native plants can reverse the trends I started the article with? A vivid example relating to how native plants underpin biodiversity is in Doug Tallamy's seminal book "Bringing Nature Home". In this book he notes that oak trees, for example, are known to support 534 (that is not a typo!) species of butterflies and moths, cherries 456, hickory 200 species, and walnut 130 species. The same is true for native wildflowers: goldenrods support 115 species, asters 112, violets 29, and milkweeds 12. And while they'll support other pollinators too, they won't contribute nitrogen that helps befoul our aquifer and coastal bays.

The good news is that it has never been easier to buy native plants. One such source for native species is the Long Island Native Plant Initiative (LINPI) which sells nearly 60 species of native wildflowers, grasses, and shrubs, that besides being native, are locally derived genotypes, meaning they are genetically adapted for the specific environmental conditions found on Long Island. Both upland and wetland species are available through the LINPI program. These include several species of milkweed, goldenrods, and various native grasses and shrubs. More information about the native plants species offered for sale can be obtained by visiting the LINPI website. The next LINPI plant sale, to be held at the eastern campus of Suffolk County Community College, is scheduled for June 2, 3, 9, and 10th. A number of nurseries throughout Long Island also sell native plants.

So, you want to be part of the solution to enrich the lands around Peconic Bay? Buy and plant some native plants and when they take hold sit back to glory in your goldenrods, marvel in your milkweeds, and cheer about your cherries.

John Turner serves on the board of the Long Island Native Plant Initiative. He also serves as a Conservation Policy Advocate for the Seatuck Environmental Association.

HOMEOWNER REWARD PROGRAM TESTIMONIAL

After hearing about the PEP Homeowner Reward Program from a nursery customer who had also participated, I decided to apply for funding for a cottage we were restoring on Reeves bay in Flanders. I figured that I would then be better educated and equipped to help others navigate the application process. I was surprised and delighted to find how easy it was to apply and promptly receive reimbursement for the costs of my native seashore plantings. I cannot thank you enough for offering this program and recommend it highly!

-Cristina S. of Calverton



How is Water Quality Monitored in the Peconic Estuary?

Water quality monitoring, especially water column nitrogen and dissolved oxygen concentrations, is essential in order to assess the health of the Peconic Estuary and to help determine if management goals are being reached.

The Peconic Estuary Program supports both a year-round long-term periodic sampling program conducted by the Suffolk County Department of Health Services (SCDHS) Office of Ecology, Bureau of Marine Resources and a continuous sampling program conducted by the United States Geological Survey (USGS). These two water quality sampling programs complement each other and together provide a great resource for understanding the Peconic Estuary. SCDHS's water quality sampling provides excellent spatial coverage of the estuary and its freshwater tributaries and the high frequency data collected at the USGS continuous monitoring stations provide excellent temporal coverage at two sites.

Suffolk County Bureau of Marine Resources Water Quality Sampling

Suffolk County Bureau of Marine Resources has routinely monitored the water quality of surface and marine waters in the Peconic Estuary since 1977. On a monthly basis, 38 marine locations in main bays and peripheral embayments, and an additional 26 stream and point source sites in the Peconic Estuary are sampled from boats or from shore to assess status of the Peconic Estuary. These data are sufficient to document seasonal variability and trends in the waterbodies being measured.

What is sampled?

Sampling analytes at marine stations include total and dissolved nitrogen and phosphorus, dissolved inorganic nitrogen (nitrate, nitrite and ammonia), dissolved ortho-phosphate, total and fecal coliform bacteria, total suspended solids, chlorophyll-a, and the brown tide organism *Aureococcus anophagefferens*. Physical measurements taken include salinity, temperature, dissolved oxygen, pH, light extinction (PAR) and secchi depth.

Fresh water samples are also analyzed for dissolved metals and numerous organic constituents, including volatile organic compounds, semi-volatile organic compounds, pesticides and herbicide compounds. All Suffolk County Department of Health Services Peconic Estuary Water Quality Data and Information is available here:

<https://gisportal.suffolkcountyny.gov/gis/home/item.html?id=58cb2a1108ff4ccea11716cec9175f65>

USGS Continuous Water Quality Sampling

In 2012, the Peconic Estuary Program and Suffolk County partnered with the United States



Geological Survey (USGS) to install two continuous monitoring stations in the Peconic Estuary, one located in Orient Point Harbor and another located at the mouth of the Peconic River under the County Road 105 bridge in Riverhead. These two monitoring stations complement the periodic sampling conducted by SCDHS by providing continuous sampling of the water quality conditions within the estuary.

What is sampled?

At 6 minute intervals, ocean and estuary elevation, water temperature, specific conductivity, salinity, dissolved oxygen, turbidity, chlorophyll, sampling depth and pH are measured. A nitrate analyzer measures nitrate in the water column every 30 minutes.

High frequency measurements of key water quality parameters allow long-term trend assessment of climate and other incremental changes. Moreover, estimates of frequency, severity, and duration of hypoxia (low oxygen conditions) and anoxia (zero oxygen conditions) have been collected using the two USGS continuous monitoring stations since 2012. This information was particularly helpful to figure out the reasons for the 2015 fish kill in the Peconic River because the dissolved oxygen concentrations were recorded every 6 minutes and captured the times when dissolved oxygen was at levels too low to sustain aquatic life.

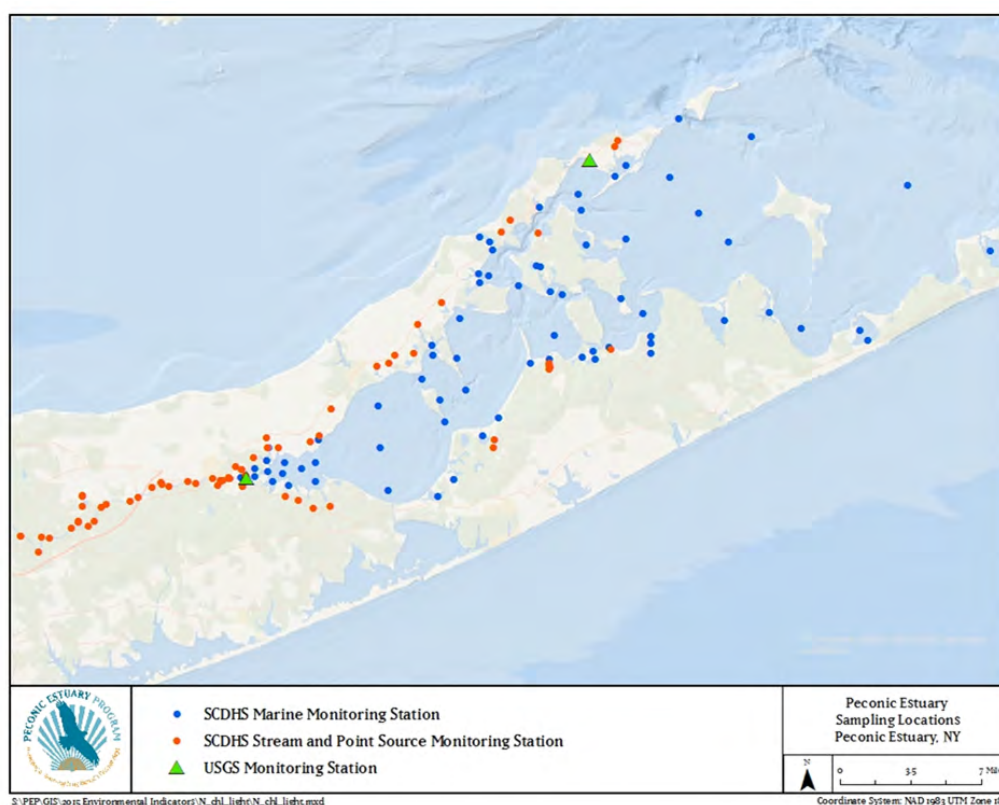


Figure: The SCDHS marine, stream and point source monitoring stations and USGS monitoring stations in the Peconic Estuary

All USGS data is publicly available and posted on the USGS website: USGS Continuous Monitoring at Riverhead, NY:

http://waterdata.usgs.gov/nwis/uv/?site_no=01304562 USGS Continuous Monitoring at Orient, NY:

http://waterdata.usgs.gov/ny/nwis/uv/?site_no=01304200



Creature Spotlight: Diamondback Terrapins

by Dr. Russel Burke

If you see a turtle in the bay.....

Many people have never seen one, but New York's own native salt water turtle, the diamondback terrapin, lives year-round in the bays and estuaries of Long Island, the lower Hudson River, and the Long Island Sound. They're about 7-12 inches long. Terrapins stay much closer to the shore, and can live wherever there are sizable salt marshes, where they find food and spend the winter safely. Terrapins are keystone species, because they prey on small invertebrates like snails, crabs, and mussels, which in turn can overgraze marsh plants.

The terrapin story is an interesting one, in part because humans have had such dramatic impacts on this harmless and appealing turtle. Terrapins were once highly prized for their meat, and connoisseurs of the nineteenth and early twentieth century considered them a delicacy. Starting in the mid-1800s, terrapins were harvested in huge numbers to make soup. This led to the loss of many populations, especially those near large cities. The proximity to New York City, coupled with the fact that Long Island

terrapins were considered to be among the best tasting on the market, led to severe declines in many local terrapin populations. By the mid-1930s terrapins had become so rare in the Long Island-New York City region that naturalists thought the species was locally extinct. Luckily for terrapins, the onset of World War II and the Great Depression resulted in a quick end of the turtle soup industry. Since that time, terrapin populations in many areas have slowly and steadily recovered. Many Long Islanders are still unaware that terrapins occur here.

Most people who do see terrapins see females when they come ashore to nest in June and July. They nest most commonly in dunes, grassland, shrublands, and beaches, and sometimes try to cross roads looking for their version of an ideal nest site.

Females lay 3 to 18 eggs per nest, but average about 12. Females can lay 2-3 nests per year. After nesting, females rejoin the males in the deeper bays and estuaries, where they feed until hibernation.

Eggs take 70 days or more to hatch, and some hatchlings emerge in the late summer and early fall. The other hatchlings overwinter in their nests, and emerge the following spring.

People sometimes find the little hatchlings and take them home as pets, which is illegal in New York.



Like many turtles, terrapins grow slowly, taking 3-8 years to mature (males mature earlier than females). No one knows how long they can live. Survival is tough for the diamondback terrapin at any stage in life, but no age is as perilous as the incubation and hatchling stages. Predators destroy >90% of the nests. Little is known about behavior of terrapins that do manage to hatch, but their survivorship is likely to also be very low.

These days, New York terrapins are facing a number of threats. Predators such as raccoons and foxes often eat eggs, hatchlings, and occasionally even adult turtles. Each year, many terrapins are killed trying to cross busy Long Island roads. Many of New York's salt marshes are deteriorating, and without marshes there are no terrapins. Terrapins are sometimes accidentally caught and drowned in crab traps. And some people still hunt

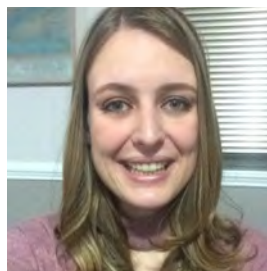
terrapins, mostly to ship out of state for food. Fortunately, the New York State Department of Environmental Conservation is taking action against these last two threats.

There are currently three ongoing New York terrapin research programs at Flax Pond on Long Island Sound, the Marine Nature Study in the South Shore Estuary Reserve, and the Jamaica Bay Wildlife Refuge. The Jamaica Bay project started in 1998 in an effort learn about the nesting biology of terrapins, the daily and seasonal movements of terrapins, population size, and to study the raccoon population.

Projects like these depend on the help of volunteers, so if you would like to learn more about terrapins or about opportunities to participate in the on-going research in this area, please contact Dr. Russell Burke at Hofstra University, russell.l.burke@hofstra.edu.

Welcome PEP Terrapin Interns

In coordination with The Jamaica Bay Terrapin Research Project and Friends of Flax Pond, this year the Peconic Estuary Program will be starting a terrapin monitoring program in the Peconic Estuary. Our interns will survey locations to determine where terrapins are nesting and monitor predation. In the future, PEP plans to expand the program to multiple sites across the Peconic Estuary and collect more detailed data on terrapins such as terrapin movement, population estimates and recruitment rates.



Kaitlin Johnson

Kaitlin Johnson is a graduate student in the Marine Conservation and Policy program at Stony Brook University. I grew up on Long Island and have always loved the ocean. I am beyond excited to promote conservation on terrapins this summer. I hope that in the future my career will involve conservation research.



Mikaela Neary

Mikaela Neary is currently attending Suffolk County Community College. She is planning on getting a degree in environmental science. Mikaela is excited to be a part of the Terrapin Turtle Internship because she wants more experience in field research and in handling wildlife for this purpose.

Summer Events



Horseshoe Crab Monitoring

Wednesday June 7th 11:15pm
East Landing Road, Hampton Bays



Participants assist with the collection of scientific data that is used to determine the management of this important species. Bring a flashlight and shoes that can get wet!

Water Quality Stewardship Training

Saturday June 17th 10:30am
3690 Cedar Beach Road, Southold



Citizen Science training day! Learn how to collect water samples and test for important environmental factors. Register at peptalk@peconicestuary.org

Terrapin Monitoring

June 24th 11:30am-12:30pm
3690 Cedar Beach Road, Southold



Diamondback Terrapins, indigenous to Long Island, are considered threatened and spend their entire lifecycle laying, hatching and hibernating in the same salt marsh. Help assess the health of local terrapin populations.

Invasive Species Removal

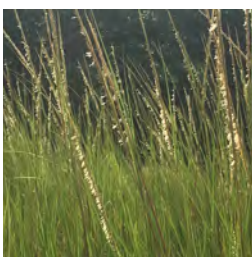
Tuesday July 11th 9:30am
Riverhead location TBD



Water primrose is a freshwater invasive plant in the Peconic River that out competes native plants and impedes fish habitat. Using kayaks and boats, we will remove this invasive species.

Salt Marsh Workshop

Sunday July 30th 1:00pm
3690 Cedar Beach Road, Southold



Salt marshes, also called tidal wetlands, help reduce erosion, flooding and provide essential habitat to birds, fish and shellfish. Unfortunately, these ecosystems are in decline. Come learn more about salt marshes and help

take care of the plants that will be used for a restoration project during National Estuaries Week.

Paddling the Peconics

Saturday August 5th 10:00am
Burns Road, Shelter Island



Join PEP educators as we paddle the Coecles Harbor Marine Trail in Shelter Island! Bring your own kayak or rent from Shelter Island Kayak Tours 631-749-1990 (kayaks will be delivered to launch site). Life jackets are required! Bring water, sunscreen, and a snack.

Contact

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Phone: 631-727-7850
peptalk@peconicestuary.org

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