Peconic Estuary Partnership

2023 State of the Peconic Estuary

Peconic Estuary Partnership

PROTECTING AND RESTORING LONG ISLAND'S PECONIC BAYS

The Peconic Estuary Partnership (PEP) is a National Estuary Program that acts as a backbone organization to address environmental issues in the Peconic Estuary and its watershed, bringing together partners from different sectors to address common goals. Serving as a bridge between science and policy, PEP supports monitoring, research, collaboration, and education on priority issues. PEP's partners and staff strive to ensure that all community members and other interested parties are well informed and have a voice in the decision-making process.

Our Misson:
To protect and restore the Peconic Estuary and its watershed.

Our Vision:
A successful partnership dedicated to restoring clean water, protecting and enhancing vibrant ecosystems and communicating sound science for nature-based coastal planning in the Peconic Estuary and its watershed.

www.peconicestuary.org
info@peconicestuary.org

On the cover: Aerial view of Little Peconic Bay with Towd Point in the foreground.

Letter from the Director

On the East End of Long Island, water is everything. The communities of the Peconic Estuary watershed are rooted in the coastal waters around them and reliant upon the groundwaters below them. The economy has been tied for generations to the Peconic Bays; our residents are avid boaters, recreational fishermen and women, water users and lovers. Our tourists and seasonal visitors drive not only the modern economy but bring with them a population three-fold higher than normal. This brings great joy and great challenges because East Enders know that this way of life is contingent on the cleanliness of our waters.

Here at the Peconic Estuary Partnership, our job is to support our communities, their way of life, and the economy by working to support the habitats that rely on our surface waters: salt marsh, eelgrass, and coastal ponds, just a few of the habitats teeming with life so interconnected that preservation of organisms enhances the life of those around it. Dedication to clean water is also dedication to healthy habitats.

Our sole source aquifer is also always on our minds. Our groundwater remaining clean and fresh is not only a priority for our partners but a driving force in our annual planning. Without this, our capacity for longevity in the Peconic region ceases to exist. The past decade has brought changes to our coastal areas. We are accepting that just as we need clean water, we need to plan for an uncertain future with warmer waters and changing weather patterns, and we need a better understanding of how the natural world around us and in our waters will change as they adapt. PEP has been focused on providing tools and data to help our communities understand and plan for these changes and work toward resiliency.

We have some great accomplishments under our belt: the open waters of the eastern estuary are cleaner; we have a solid and robust monitoring system with our partners at Suffolk County, the USGS, and Stony Brook University; river herring can now reach spawning grounds previously inaccessible to them; each parcel of land in the watershed has been assessed for its viability under predicted climatic changes; and our communities are more engaged than ever before.

As always, there is still work to do. Many of our embayments are still suffering from poor water quality, even those in the eastern estuary; all of our communities need to prioritize the replacement of outdated septic and cesspools with new Innovative and Alternative Onsite Wastewater Treatment Systems (I/A OWTS); there are still barriers to river herring migration; our marine and coastal habitats need our help; and climate change is bringing with it new challenges.

This year, our State of the Peconic Estuary report reviews some of our key work and presents some of the data we use to measure ourselves and make decisions. It also includes a snippet of new endeavors we are working on to get you excited about the future. Join us, because on the East End of Long Island, water is everything.

Warm regards,

Joyce Novak

Joyce Novak, Executive Director
Peconic Estuary Partnership

Comprehensive Conservation and Management Plan (CCMP) Implementation

Improving water quality in the Peconic Estuary is a complex challenge requiring the cooperation and coordination of multiple groups. Through the years, we have gained a greater understanding of the issues facing the Peconic Estuary and the most effective ways to address them.

In 2018, we set out on a journey of updating PEP's Comprehensive Conservation and Management Plan (CCMP) with the inclusion of the PEP Management Conference, local officials, scientific partners, and community members. PEP's renewed focus on partnership will enable us to grow and meet the challenges of today and tomorrow.

The updated CCMP, finalized in 2020, lays out a roadmap for protecting and restoring the Peconic Estuary and its watershed that will carry us through the next decade.

CCMP 2020 focuses on four Goals with eight new Objectives and 35 new Actions that will guide PEP's staff and partners to address the challenges facing our watershed.

4 Goals

8 Objectives

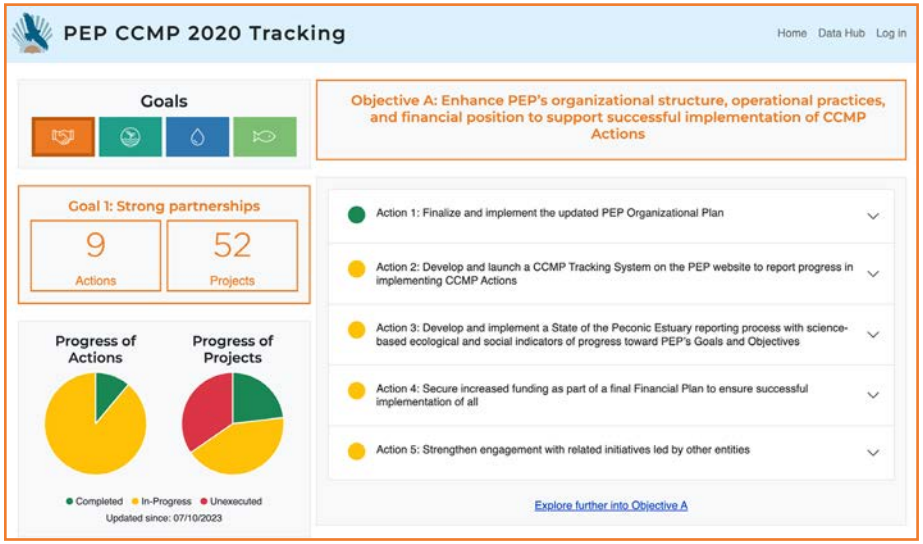
35 Actions

- Strong Partnerships and Engagement
- Resilient Communities Prepared for Climate Change
- Clean Waters for Ecosystem Health and Safe Recreation
- Healthy Ecosystem with Abundant, Diverse Wildlife

New CCMP Tracking Tool

To help facilitate CCMP implementation, PEP partnered with Stony Brook Geospatial Institute to develop a new web-based CCMP Tracking System. It graphically displays the progress of Actions and Projects associated the Goals and Objectives, as well as Performance Measures and Related Resources.

PEP staff, our Management Conference and all partners will be able to easily track the progress of CCMP efforts and obtain information and tools for telling the story of the estuary.



This screenshot of the CCMP Tracking Tool shows an example of how the tool displays information about progress toward CCMP Goals, Objectives, and Actions.

The CCMP Tracking Tool is available at https://portal.gss.stonybrook.edu/ccmp/

Organizational Restructuring Enables PEP to Strengthen and Expand

Stony Brook University Plays Vital Role as PEP's New Host

In 2021, PEP found a new host in Stony Brook University, the flagship university in the State University of New York system. We are now an integral part of the School of Marine and Atmospheric Sciences (SoMAS) while continuing to maintain our independent offices in Suffolk County and within the Peconic watershed. Having this well-balanced blend of autonomy and support has given PEP a solid foundation and enabled programmatic growth, increased annual budgets through funding diversification, and direct access to important academic resources.

Increased Local Government Support

After PEP began a host relationship with Stony Brook University, the East End Towns each voted to allow a portion of the Community Preservation Fund (CPF), which matched the 2021 EPA base funding amount of $700,000, to be passed to PEP for operational costs as is allowable under the Peconic Bay Region Community Preservation Funds. While some Towns decided to use their direct Town budgets to provide funds to PEP, there was overwhelming support for the program at the local government level. Additionally, NYS Environmental Preservation Fund allocation to PEP was increased from $200,000 to $450,000 in 2021 and $500,000 in 2023.

New Staff Positions Provide PEP with Greater Capacity

Increased funding has enabled PEP to rewrite former/existing roles and add staff to expand our impact and provide greater stability. We brought on an Outreach Coordinator as a direct staff member, a role that previously was contracted out to a partner organization. We also hired a Coastal Resilience and Community Coordinator, and we are poised to hire additional outreach and administrative staff.

Community Partnerships Foster Engagement and Understanding

New York Horseshoe Crab Monitoring Network

PEP organizes volunteers and manages one location for the Horseshoe Crab Monitoring Network. Cornell Cooperative Extension's Marine Program is helping to develop this network through funding provided by the New York State Department of Environmental Conservation (NYSDEC). NYSDEC uses the data to assess the status of horseshoe crabs in the New York marine district and assist with the management and conservation of this important species.

A Day in the Life of a River (Estuary)

Through this program with the Central Pine Barrens Joint Planning and Policy Commission and the New York State Department of Environmental Conservation, students use hands-on field techniques to describe their sites, catch fish in nets, collect water and invertebrate samples, and examine biodiversity and water chemistry parameters. They learn how their site fits into the larger ecosystem.

Long Island Coastal Bioblitz

This community science effort is hosted by Seatuck Environmental Association, Long Island Sound Study, Peconic Estuary Partnership, South Shore Estuary Reserve, New York Sea Grant, and Long Island Invasive Species Management Area. With volunteers recording as many species as possible within a designated location and time period, the bioblitz increases understanding of the ecology of Long Island's vitally important estuaries.

National Estuary Week Outreach

Continuing five years of collaboration, Long Island's estuary programs—PEP, the Long Island Sound Study, and the South Shore Estuary Reserve—celebrated in 2022 by sharing an interactive map highlighting opportunities to head outside and engage in coastal cleanups, educational events, and more.

Monofilament Line Recycling

PEP started this program in 2016 to reduce the potentially lethal hazard of fishing line entanglement and ingestion by marine life. PEP installed 18 receptacles throughout the watershed, provides outreach, hosts a map of receptacles on our website, and collects from a portion of the receptacles. On average we are collecting 4.2 lbs of monofilament and plastics in our receptacles, with a total of 21.02 lbs since the project started in 2018.

Nature Walks with Peconic Baykeeper

PEP partners with Peconic Baykeeper to organize and lead nature walks for the public. The inaugural Winter Walk Series in 2022-2023 featured five monthly nature walks at parks throughout the East End Towns. In spring, a walk at Southampton's Alewife Creek celebrated Earth Day and Long Island Migratory Fish Week by educating about the history of these threatened and ecologically important fish, current monitoring efforts, and restoration efforts.

Diadromous Fish Work Group

Organized by PEP, Seatuck, Long Island Sound Study, and South Shore Estuary Reserve, the annual Long Island Volunteer River Herring and Eel Survey engages community volunteer scientists aims to find the waterways where "remnant" runs still exist and to monitor the size and timing of the runs. This information is vital to restore local populations of these ecologically important fish.

Wildlife Monitoring Network Long Island

Achieved through the partnership of Seatuck Environmental Association and Peconic Estuary Partnership, the Wildlife Monitoring Network is a 'one-stop-shop' for wildlife monitoring surveys for species found throughout Long Island.
The goal is greater community participation, data collection, and understanding of wildlife and their habitats.

Wildlife Monitoring Network
LONG ISLAND

Community Science Long Island Webinar Series

PEP partnered with Long Island Sound Study, New York Sea Grant, South Shore Estuary Reserve, and the Seatuck Environmental Association to host the Community Science Webinar Series. This outreach series raises awareness of citizen science opportunities on Long Island and the importance of those projects in supporting research and local environmental management efforts.

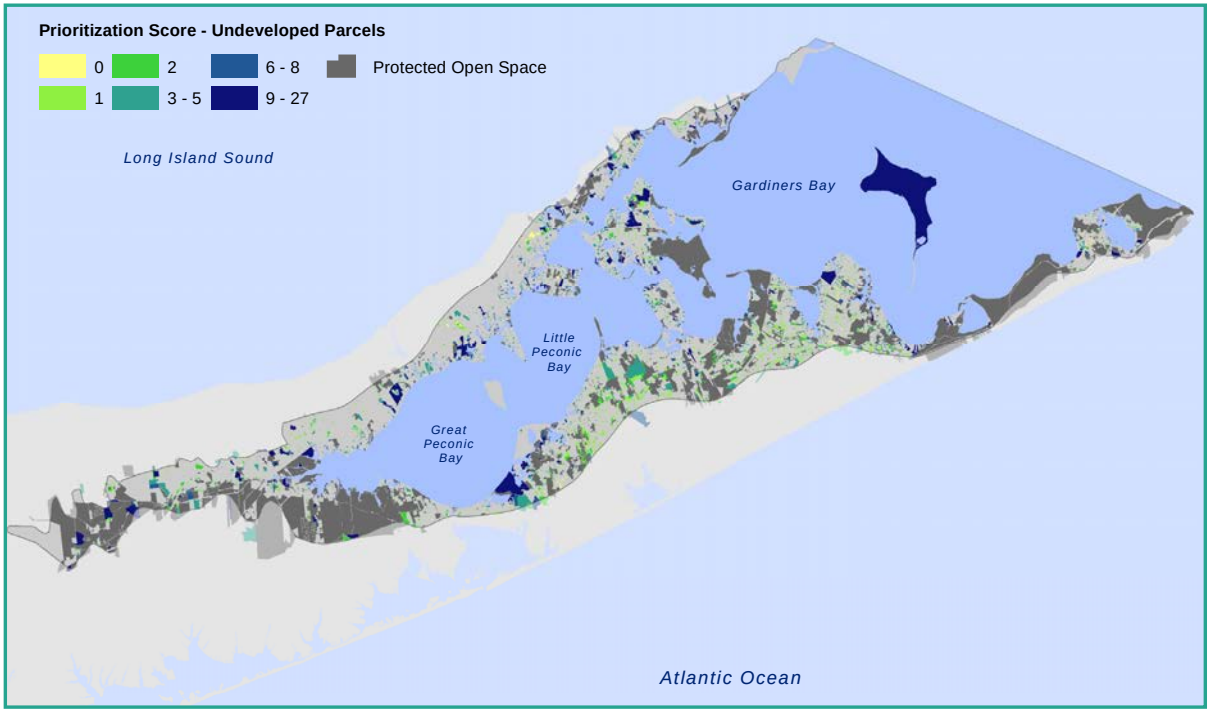
Critical Lands Protection Strategy: New Tool to Assist State and Local Decision-making

Over the past two decades, the Critical Lands Protection Strategy (CLPS) has been used by municipalities and other land stewards, such as the Peconic Land Trust, to protect over 10,000 acres in the Estuary. The CLPS helps identify and prioritize parcels of land with the greatest potential to protect and preserve the health of the Peconic Estuary.

The Peconic Estuary Partnership recently reviewed and refreshed the CLPS screening criteria to account for anticipated changes in coastal conditions related to climate change and to incorporate agricultural land. Using Geographic Information Systems (GIS), each parcel in the Peconic watershed was evaluated based on the updated criteria.

The resulting map products can be used by State and local agencies for land-use planning and zoning, and to identify potential opportunities for developed or agri-cultural lands to be converted back to a natural state to increase resilience to climate change.

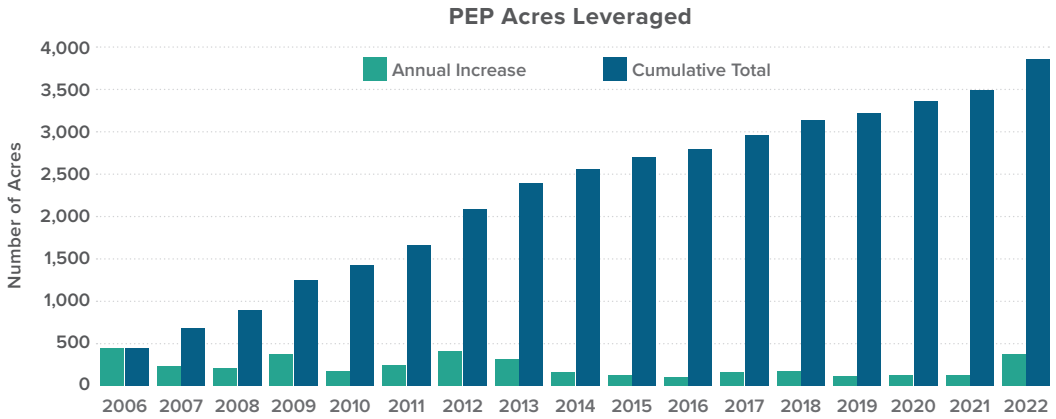
The CLPS GIS tool is available at www.peconicestuary.org/news-and-events/maps-gis/climate-change/.



CLPS map of prioritization scores of undeveloped, unprotected land parcels in the Peconic watershed. Dark gray indicates open space parcels that are already protected..

Voter-Approved Community Preservation Fund Provides Crucial Support

Established in 1998, the Communitiy Preservation Fund (CPF) is a real estate transfer tax in Riverhead, Southold, Shelter Island, East Hampton, and Southampton. Managed by the East End towns, it is used for the protection of farmland, open space, and community character. In 2016, voters extended the CPF to 2050 and approved an amendment allowing towns to invest up to 20% of the funds in water quality improvement projects. The agreement specifies that 10% of that 20% can be allocated to the Peconic Estuary Program. In 2021, using this fund, the East End towns agreed to contribute direct funding to PEP on a three-year phased in contribution to match EPA funds (then $700,000 annually).

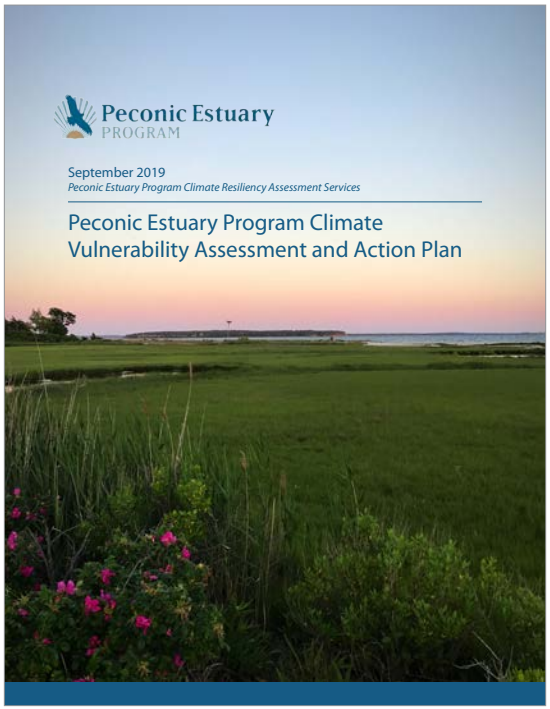


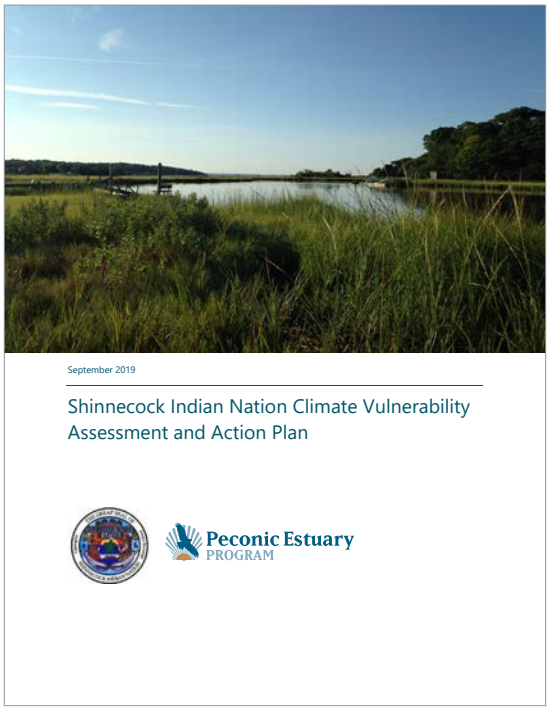
Acres leveraged from 2006 to 2022 by the Peconic Estuary Partnership. Data source: EPA National Estuary Program Online Reporting Tool (NEPORT)

Development of Climate Ready Action Plans

PEP embarked on a Climate Ready Assessment (CRA) Project with Anchor QEA, LLC. to incorporate climate change into an updated Critical Lands Protection Strategy (CLPS) (www.peconicestuary.org/news-and-events/maps-gis/climate-change/), to conduct a risk-based climate change vulnerability assessment, and to develop an adaptation action plan consistent with USEPA's Climate Ready Estuaries Program. PEP plans to use the information in this report and associated tools to assist East End municipalities with planning decisions related to resilience and climate adaptation.

Based on the results of this assessment, a Climate Ready Action Plan was developed to address prioritized climate change risks and vulnerabilities in the Peconic Estuary watershed. The Climate Ready Action Plan is a guide for the municipalities and resources managers in the Peconic Estuary. A Climate Vulnerability assessment with the Shinnecock Nation was also developed for all areas of the Nation Lands (including those outside of the Peconic watershed). PEP worked with The Nation to complete a risk-based assessment, to account for future sea level rise, storm inundation and erosion potential. Based on the results of this assessment, a Climate Ready Action Plan was developed to address prioritized climate change risks and vulnerabilities in the Shinnecock Indian Nation. The Climate Ready Action Plan is a guide for the Shinnecock Indian Nation to adapt to the impacts of climate change.





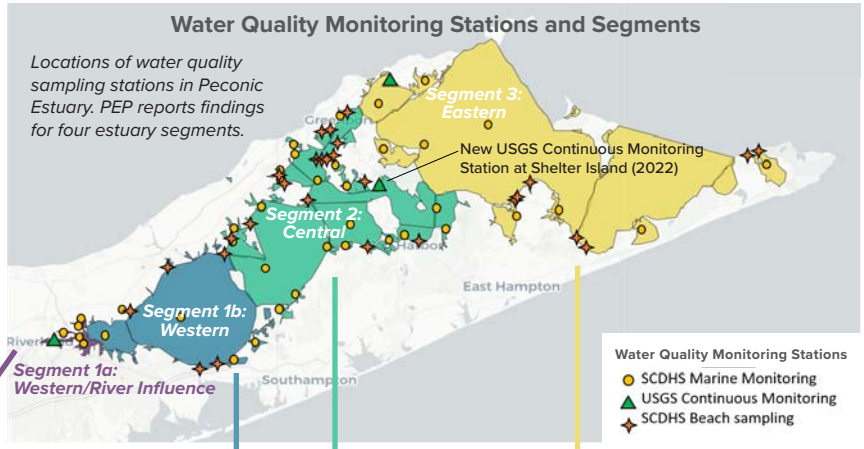
New Initiative to Improve Water Quality and Climate Resiliency

PEP has had an increasing presence in State and Local government policy-related endeavors and was appointed by the NYS Assembly minority leader to the Ocean Acidification Taskforce and by Suffolk County Legislator from District 1 to the Suffolk County Coastal Resilience and Sea Level Rise Task Force. Using the federal investment from the Bipartisan Infrastructure Law, PEP will be initiating a Blue Carbon project in our estuary in 2023. This project aims to improve water quality and climate resiliency within the bay, with special focus on shoreline protection, ocean acidification mitigation and nutrient bioextraction by means of kelp aquaculture, eelgrass restoration and oyster reefs.

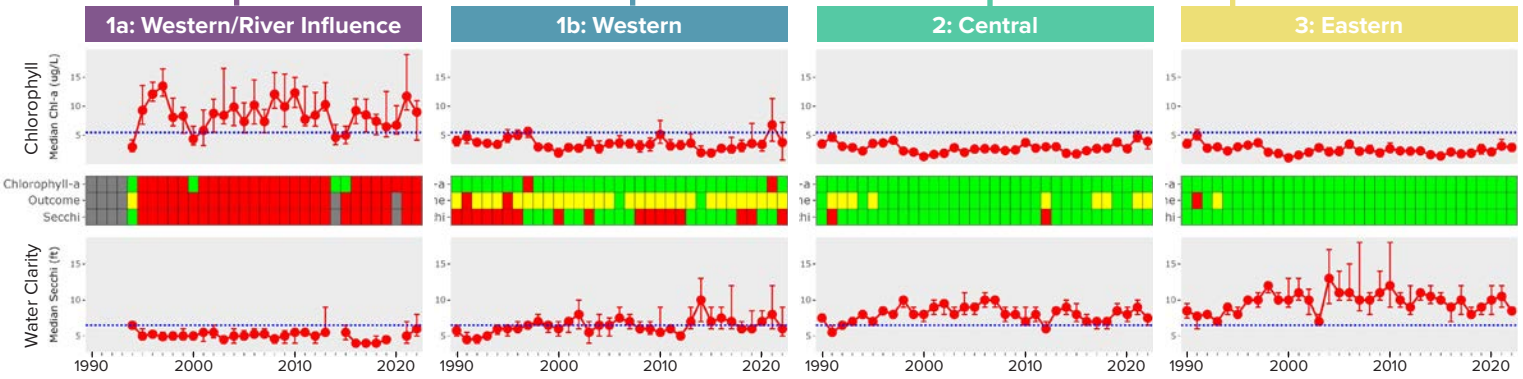
Michael Doall and Capt. Brian Gagliardi hold sugar kelp, which is being co-cultivated with oysters in the Eastern Peconic Blue Carbon project to mitigate ocean acidification. (Photo: Stony Brook University)

Water Quality Poor in Western Areas and Embayments, Healthier in Eastern Open Waters

PEP has developed a Peconic Estuary Water Quality Monitoring Collaborative (WQMC) to help ensure effective implementation of the PEP Water Quality Monitoring Strategy. The Collaborative functions as a subcommittee of the Technical Advisory Committee (TAC) and is composed of main water quality monitoring programs in the Estuary, including members from New York State Department of Environmental Conservation (NYSDEC), U.S. Geological Survey (USGS), Suffolk County, Cornell Cooperative Extension (CCE), and academic and nonprofit groups. A new USGS station for continuous water quality monitoring was established at Shelter Island in 2022. Our water quality monitoring efforts show that open waters in the eastern segment are doing great, especially when compared to the highly impaired western segment. However, problems still exist in the embayments all over the Peconic estuary. In 2022, we began targeted monitoring of priority embayments for HABs and their relation with nutrients (nitrogen and phosphorus). We are looking to establish nutrient reduction endpoints to reduce those HAB species.



Water Quality in Estuary Segments from 1990-2022

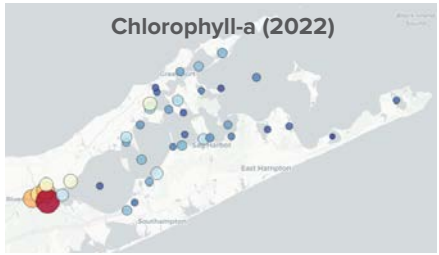


These four panels summarize water quality data over time in four segments of the Peconic Estuary. For each segment, top graph shows chlorophyll-a, and bottom graph shows Secchi depth. Dashed blue lines indicate thresholds for chl-a (5.5 µg/L) and Secchi depth (6.5 ft). Secchi depth is a proxy for water clarity. Table in the middle shows the "stoplight" management categories for chl-a, Secchi depth, and the combined outcome of both parameters.

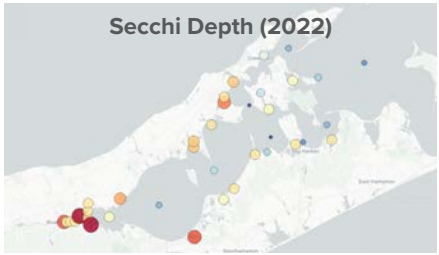
Water Quality in 2022

These three maps show key indicators of water quality at sampling locations within Peconic Estuary in 2022. Chlorophyll-a is an indicator of productivity, and high levels may suggest eutrophication. Secchi depth is a proxy for water clarity. Total nitrogen is an indicator of nutrient enrichment, which can lead to eutrophication.

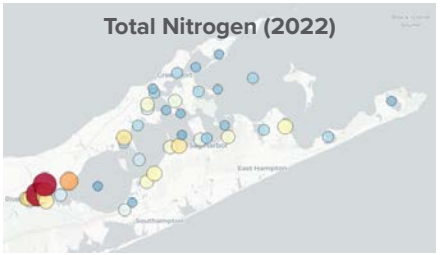
Peconic Estuary Water Quality Report is available at peconicestuary.org/peconic-estuary-water-quality-report/



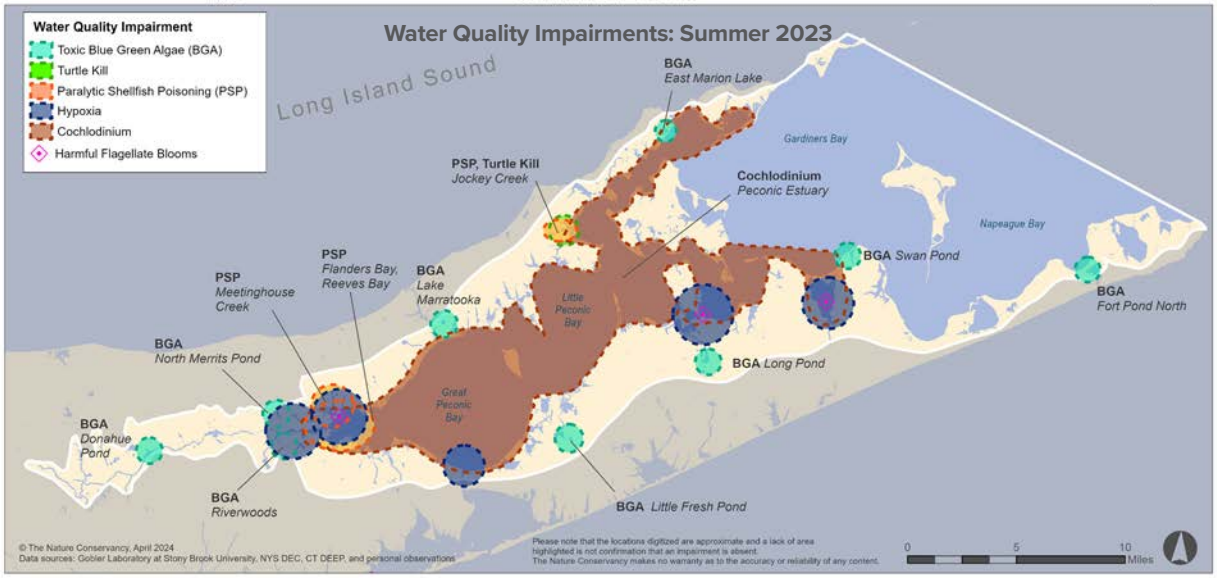
Warm colors indicate sites where median Chl-a exceeded the recommended threshold for healthy conditions (5.5 µg/L).



Warm colors indicate sites where water clarity did not meet the recommended threshold for healthy conditions (6.5 ft median Secchi depth).



Two sites (darkest orange) far exceeded the recommended threshold for sustaining existing eelgrass (0.4 mg/L median total N).



Combined Outcomes for Estuary Segments

	1a	1b	2	3
1990		yellow	green	green
1991		red	yellow	red
1992		yellow	yellow	green
1993		yellow	yellow	yellow
1994	yellow	yellow	green	green
1995	red	red	yellow	green
1996	red	yellow	green	green
1997	red	yellow	green	green
1998	red	yellow	green	green
1999	red	yellow	green	green
2000	red	yellow	green	green
2001	red	yellow	green	green
2002	red	yellow	green	green
2003	red	yellow	green	green
2004	red	yellow	green	green
2005	red	yellow	green	green
2006	red	green	green	green
2007	red	yellow	green	green
2008	red	yellow	green	green
2009	red	yellow	green	green
2010	red	yellow	green	green
2011	red	yellow	green	green
2012	red	yellow	yellow	green
2013	red	yellow	green	green
2014		green	green	green
2015	red	yellow	green	green
2016	red	yellow	green	green
2017	red	yellow	yellow	green
2018	red	yellow	yellow	green
2019	red	yellow	green	green
2020		yellow	green	green
2021	red	yellow	yellow	green
2022	red	yellow	yellow	green

Tracking of attainment outcomes for chlorophyll-a and Secchi depth provides a framework from which bay management actions can be developed and initiated.
Red: On alert. Yellow: Caution. Green: Stay the course.

Dissolved Oxygen

PECONIC RIVER

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	0	0	0	0	1	13	31	31	12	8	2	0
2014	0	0		0	19	30	31	31	30	19	0	0
2015	0	0	0	5	20	30	31	31	25	6	6	0
2016	2	13	0	6	20	30	31	31	29	8	0	1
2017	3	0	0	13	13	21	31	31	30	27	7	0
2018	0	0	0	0	15	19	31	31	30	9	0	0
2019	0	0	0	4	4	30	31	31	29	15	0	0
2020	2	1	7	15	25	30	31	31	23	20	15	13
2021	8	0	0	1	19	30	31	31	26	26	11	0
2022	0	0	0	0	16	17	31	31	21	11	2	0
2023	0	0	0	0	8	23	31	31	30	8	8	5

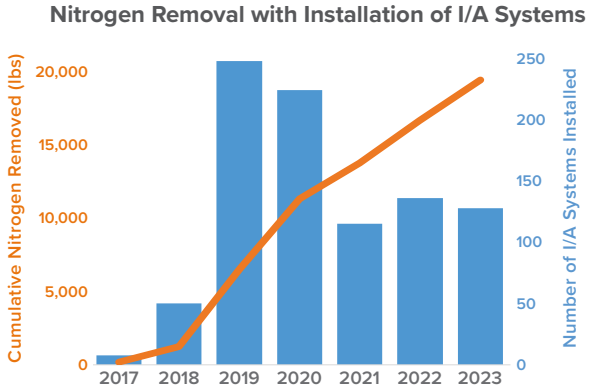
ORIENT POINT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	0	0	0	0	0	0	11	3	2	0	0	0
2014	0	0		0	0	0	2	3	2	0	0	0
2015	0	0	0	0	0	0	8	8	3	0	0	0
2016	0	0	0	1	0	0	3	2	6	0	0	0
2017	0	0	0	0	0	0	10	0	1	0	0	0
2018	0	0	0	0	0	0	13	20	6	0	0	0
2019	0	0	0	0	0	0	6		0	0	0	0
2020	0	0	0	0	0	2	14	12	2	0	0	0
2021	0	0	0	0	0	1	3	10	0	0	0	0
2022	0	0	0	0	0	2	9	11	0	0	0	0
2023	0	0	0	0	0	0	5	3	4	0	0	0

SHELTER ISLAND

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022									1	0	0	0
2023	0	0	0	0	0	3	16	10	10	0	0	0

Replacement Systems for Onsite Wastewater Treatment Reduce Nitrogen Pollution



The Suffolk County Reclaim Our Water Initiative offers the Septic Improvement Grant and Loan Program to incentivize the replacement of conventional septic systems and cesspools that do not adequately reduce nitrogen pollution. They are replaced with Innovative and Alternative (I/A) Onsite Wastewater Treatment Systems. These systems remove 50-70% of total nitrogen compared to traditional systems. The towns of East Hampton, Southampton, and Shelter Island also offer Septic Rebate Programs.

Since the start of the program there have been 909 I/A systems installed within the Peconic watershed. These septic improvements mean an approximate removal of 19,362 lbs of nitrogen each year from our aquifers. Peconic Estuary Partnership is encouraging residents to upgrade their septic systems by offering information on the available grant programs and hosting outreach events.

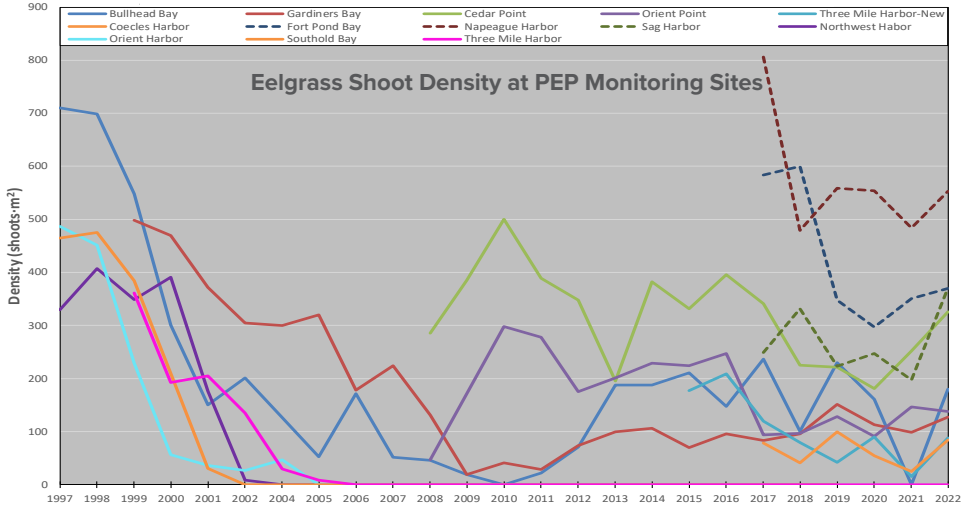
Left: Sequential number of days with a 24-hour mean measurement below the threshold for chronic low dissolved oxygen (4.8 mg/L) for Peconic River (top), Orient Harbor (middle), and Shelter Island (bottom).

Monitoring and Restoring Vital Eelgrass Beds to Support Ecosystem Health

Eelgrass in the Peconic Estuary has declined dramatically since 2016, according to annual observational investigations by Cornell Cooperative Extension, and eelgrass coverage is far below historical levels. We will be adopting a more quantitative monitoring plan to accurately assess annual condition of the eelgrass beds.

Cornell Cooperative Extension diver monitoring eelgrass

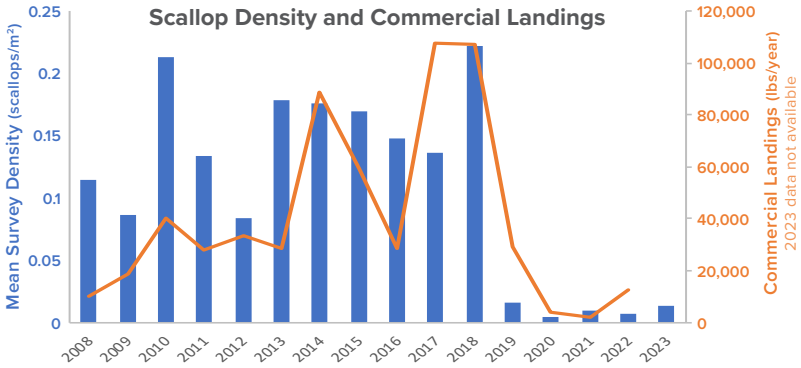
Past efforts to restore eelgrass were unsuccessful. In 2022, PEP in partnership with Bradley Peterson (Stony Brook University) and Jonathan Tamborski (Old Dominion University) received an EPA Coastal Watershed Grant to initiate estuary-wide research on the relationship between water temperature and existing eelgrass beds to identify sites of potential eelgrass restoration. Additionally, PEP will be coordinating a regional eelgrass collaborative focused on eelgrass preservation along the East Coast.



Average annual shoot densities for all PEP Long Term Eelgrass Monitoring Program sites supporting eelgrass from 1997 to 2022. New monitoring sites added in 2017 are represented by dashed lines.

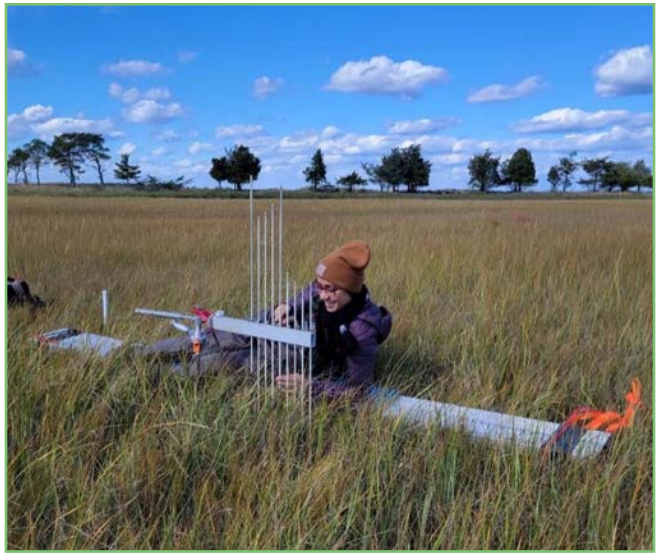
Assessing Factors in Scallop Die-off

Scallop density and landings in the Peconic plummeted in 2019 and remain extremely low. In 2020, NYS funds dedicated to PEP funded research at the Marine Animal Disease Laboratory at Stony Brook University to begin investigations into the die-off. A parasite, triggered by consistent higher water temperatures, is thought to be the cause of the die-off. Ongoing research is being carried out on potential strains of the scallop that are resistent to this parasite.



How Does Climate Change Affect Salt Marshes?

In partnership with The Nature Conservancy, Peconic Estuary Partnership measures the surface elevation of salt marshes at Indian Island, Hubbard, and Cedar Beach County Parks. Marsh elevation can be influenced by sea-level rise, changes in sediment loading, increasing temperatures, and other consequences of climate change. The data contribute to local and regional understanding of the status and future of salt marshes. Data from the past fourteen years are currently under publication review and will be shared once publicly available.

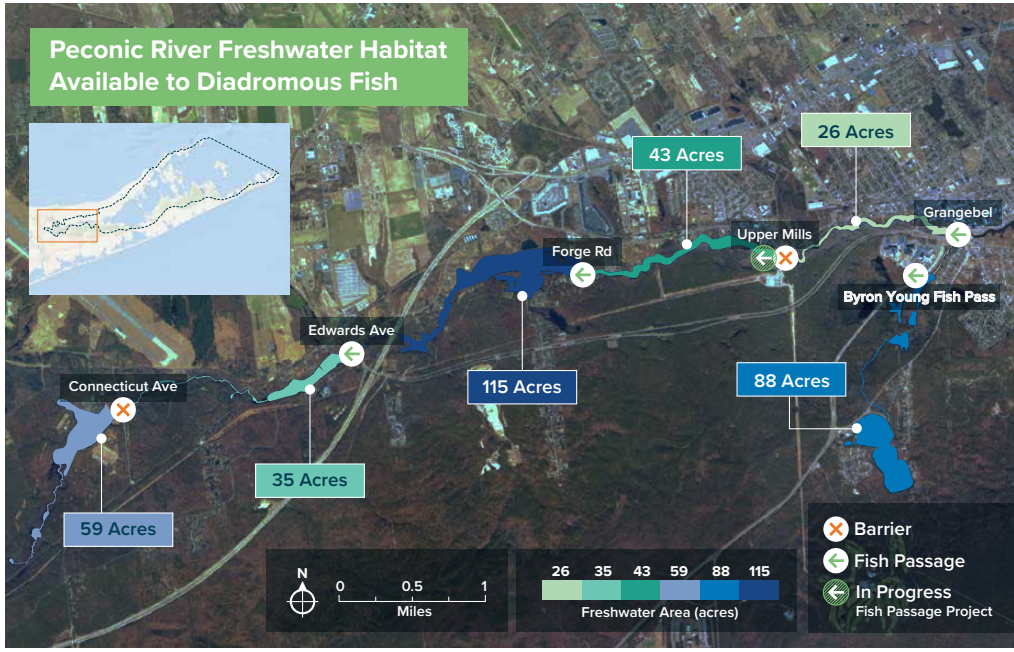


PEP staff measuring a surface elevation table (SET) station in a salt marsh at Hubbard Creek in 2022.

Important Milestones Achieved in Restoration of Diadromous Fish Habitat

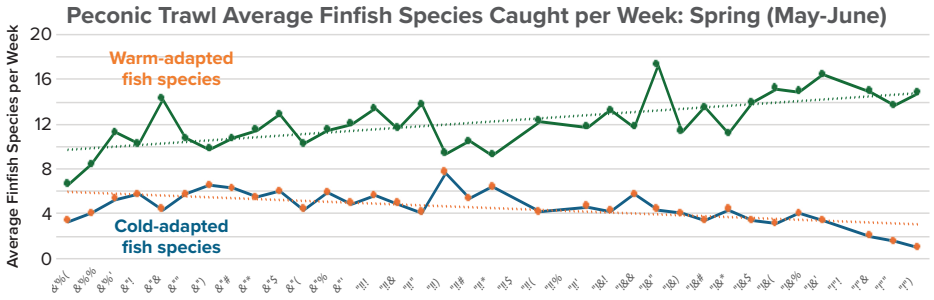
Historically, six dams in the Peconic River's watershed blocked diadromous fish from migrating upstream and downstream to reach their spawning and maturation habitats. Over the last several decades, PEP has worked diligently with partners to install fish passage structures and replace undersized road culverts with larger, fish-friendly culverts, which has enabled alewife and American eel to go around or over four of the dams.

Recently, PEP's Aquatic Connectivity Program celebrated an significant milestone when a fish pass was constructed at the Woodhull Dam on Little River, a tributary of the Peconic River. More than 50,000 fish used the new Byron Young Fish Pass in 2022. In addition, the Town of Brookhaven completed a fish pass at Forge Road Dam in 2023. This leaves the Upper Mills Dam as the only remaining obstruction. Final engineering designs and permits for a fish pass at Upper Mills Dam were approved in 2021, and land-use agreements are currently being developed that will allow construction to start.



Changes in Warm- and Cold-Adapted Fish Species Abundance

The NYS DEC Bureau of Marine Resources has conducted finfish trawl surveys to monitor juvenile fish populations in the Peconic Estuary since 1987. Scientists use the data to analyze the relative abundance of warm-adapted fish species (which are generally more abundant south of the Peconic Estuary) and cold-adapted species (which are generally more abundant north). Data collected in spring (May-June) suggest that warm-adapted species have increased and cold-adapted species have decreased.



Warm-adapted fish species (orange) appear to have increased in the Peconic Estuary in May-June surveys, while cold-adapted species (blue) have declined. Dotted lines indicate trends (linear regression). Data not available for 2006, 2008, and 2020.

Mixed Breeding Success for Piping Plovers

The piping plover is a Federally Threatened and New York State Endangered shorebird species. Since 2015, the number of breeding pairs within the Peconic Estuary appears to be increasing, and nesting success seems to be slightly decreasing. From 2015 to 2022, the highest reproductive rate was 1.88 birds fledged per nest in 2016, and the lowest was 1.15 in 2022.

Annual dedicated beach management and monitoring of breeding pairs is conducted by PEP partners: NYS DEC, NYS DFW, Long Island National Audubon Society, and the public. PEP is dedicated to the continuity of programs that foster healthy reproductive piping plover populations. Despite these efforts, predation and human disturbance remain a risk to breeding success at many locations in the Peconics and throughout the northeastern states.

SUMMARY:

Local Action Needed to Keep the Peconic Estuary Healthy

On the whole, the Peconic Estuary continues to be a healthy and diverse marine ecosystem with significant opportunities for water-dependent recreation. Many environmental indicators, however, are exhibiting worsening trends.

- Low dissolved oxygen occurs in the tidal Peconic River, western Flanders Bay and tidal creeks.
- Nitrogen concentrations remain high in the western Peconic Estuary, and various harmful algal blooms (HABs) are common. Additionally, we are seeing embayments experiencing closures for the first time due to HABs.
- Eelgrass beds, which provide important habitat for many fish and shellfish species, are now virtually absent west of Shelter Island, and those that do exist are not expanding.
- The amount of marsh is decreasing, and a majority of the identified marshes in the Peconic Estuary are considered “at risk.”
- Critical habitats for fish spawning and breeding birds continue to decrease in availability and quality.

It is possible to reverse some of the trends revealed from the environmental indicators through the combined efforts of government, businesses, non-government organizations, and community members to:

- preserve open space,
- reduce pollution from existing development, and
- ensure that any future development minimizes its impact on the environment.