

Long Island Sound Research

Written by Mikael Kerr, April 2017



Photo courtesy Eco-Health Report Card

Long Island Sound Background and Information:

The Long Island Sound is one of the most important and vulnerable assets Long Island has, more than 23 million people live within a 50 mile radius of the sound. Between Connecticut and Long Island, the Sound generates over \$9 Billion dollars annually, with 191,000 direct and indirect jobs dependent on the Sound being a healthy, productive and economically viable body of water. The Sound is approximately 113 miles long and 21 miles at its widest with a surface area of approximately 1300 square miles. The depth of the Sound can vary but the average depth is 63 feet and the volume of water is around 18 trillion gallons. The Sound also has a beautiful and ecologically diverse coast line that measures more than 500 miles due to all the various bays and inlets.¹

The Sound is also home to a large diversity of finfish and shellfish with over 120 different species found in its waters. Some of the more popular sport fishing species being, Striped Bass, Bluefish, Little Skate and Summer and Winter Flounder.² Shellfish are also a very important ecological and economic component of the Sound, with the area being home to hard clams or quahogs, blue mussels, razor clams, soft clams, oysters and bay scallops. Shellfish are caught both recreationally and commercially but unfortunately they are very vulnerable to

¹ Connecticut Coastal Access Guide Long Island Sound Facts, Connecticut Dept' of Energy & Environmental Protection

² Nearshore Saltwater Sportfish of New York, New York State Dep't of Environmental Conservation

changes in the water quality which leads to a number of temporary harvesting closures throughout the year.³

Beyond the waters, the coastal areas also provide a rich, biologically diverse habitat for a number of animals and birds such as osprey, herons, swans and ducks.⁴ The estuaries, salt marshes, wetlands and meadow grasses are a critical component for spawning fish and nesting birds, and provide a critical source of food for a number of fish and wildlife. Also, these areas provide an important barrier that protects the inland areas from storm surges and flooding, vice versa, these areas protect the Sound by capturing pollutants found in runoff.

Major Issues Facing The Sound:

The most pressing issue currently facing the sound is excessive nutrient loads, mostly nitrogen, which causes common occurrences of hypoxia and dead zones throughout the year. When excessive nutrient loads enter the sound this leads to increased algae blooms which then use up oxygen as they decompose. Over the years, a lot of progress has been made to greatly reduce the nutrient load in The Sound but there is still a lot of work to be done. Increasing populations, increasing amounts of paved areas, urban runoff, cesspools and aging septic systems still pose as significant point and nonpoint sources of pollution. Many of the bays and inlets along the North Shore of Long Island such as Oyster Bay Harbor, Mill Neck Creek, Beaver Lake, Cold Spring Harbor, Huntington Harbor, Lloyd Harbor, Centerport Harbor and Northport Harbor are considered by the DEP and DEC to be impaired. This means shellfish and finfish populations are periodically stressed and beaches are occasionally closed to the public due to elevated bacteria levels.⁵

³ New York State Dep't of Environmental Conservation, Shellfish Alerts, Division of Marine Resources

⁴ Long Island Sound Study, 2003 Long Island Sound Habitat Restoration Initiative, Technical Support for Coastal Habitat Restoration, Tidal Wetlands

⁵ New York State Dep't of Environmental Conservation, 2012 Oyster Bay/Huntington Bay Watershed Report, Revised 2016

Long Island Sound, Nassau/Suffolk (1702-0270)

Impaired

Waterbody Location Information

Revised: 02/19/2016

Water Index No: (MW5.1a) LIS (portion 3c)
Unit Code: 0203020102 **Class:** SA
Water Type/Size: Estuary Waters 27950.6 Acres
Description: Sound fr Matinecock Point to Eatons Neck Point
Drain Basin: Atlantic-Long Island Sound
Reg/County: 1/Nassau (30)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Shellfishing	Stressed	Known
Public Bathing	Stressed	Known
Recreation	Stressed	Known
Aquatic Life	Impaired	Known
Fish Consumption	Stressed	Suspected
Conditions Evaluated		
Habitat/Hydrology	Good	
Aesthetics	Good	

Type of Pollutant(s)

Known: NUTRIENTS (nitrogen), LOW D.O./OXYGEN DEMAND, Pathogens
Suspected: Priority Organics (PCBs)
Unconfirmed: - - -

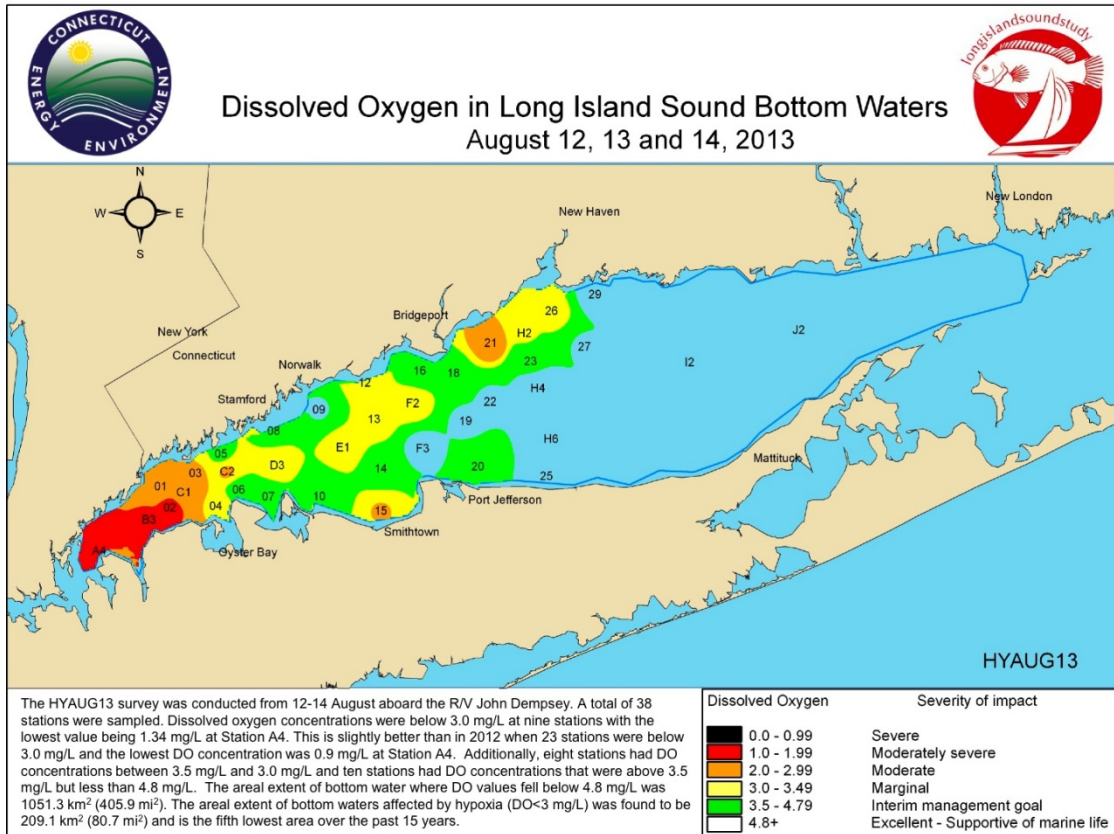
Source(s) of Pollutant(s)

Known: MUNICIPAL DISCHARGES, CSOs, URBAN/STORM RUNOFF
Suspected: Other Source (migratory species)
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: DEC/Reg1
IR/305(b) Code: Impaired Water, TMDL Completed (IR Category 4a)





The other major issue for The Sound is floating debris aka, plain old trash that makes its way to the water and can be harmful to fish and wildlife. There is also the aesthetic impact of floating debris that causes people to avoid the water and can negatively impact the image of businesses along the waterfront.

Municipalities and Organizations Working to Mitigate Pollution in and Along the Sound:

Another major issue facing the sound is simply awareness of the nutrient pollution issue. Many towns and municipalities have fairly good looking resources on their web sites regarding runoff and waste water management. However, while they look good, many of them are only surface deep and links to current projects or news about cleanup efforts go to empty webpages. Also, there doesn't appear to be much communication between some the towns along the North Shore, at least by looking at their websites there is little mention of what surrounding areas are also doing to protect the sound. That being said, there are some significant educational resources being provided and initiatives being taken by Nassau and Suffolk County municipalities and private organizations. Below, is an outline of these ongoing projects:

Nassau County:

In addition to programs by individual towns, Nassau has county wide programs to teach residents and business owners about runoff management, one such program is the Erosion and Sediment Training program:



NYSDEC ENDORSED 4-HOUR EROSION AND SEDIMENT CONTROL TRAINING

March 28th, 2017
11:00 AM - 4:00 PM

LOCATION: Old Bethpage Village Restoration
1303 Round Swamp Road
Old Bethpage, NY 11804

COST: \$100 per person, Non-Refundable. Payment by check only. Pre-payment Required. Cost Includes refreshments, training materials, certificate, certificate ID card, which is valid for 3 years. Make check out to Nassau SWCD and email it with your Trainee Application Form to 1864 Muttontown Road, Syosset, NY 11791.

REGISTRATION: Visit www.nassauswcd.org and complete a Trainee Application Form and mail it with your \$100 payment to 1864 Muttontown Road, Syosset, NY 11791. Completed registration form/payment must be received by March 24th, 2017. Check-in begins at 10:30 AM. Legal Photo ID and signature required at the beginning and end of the training. Space limited to 100 participants.

PRESENTED BY: Jake Wedemeyer, Certified Professional in Erosion & Sediment Control, Ulster County

Under the NYS Dept. of Environmental Conservation's Stormwater Permit GP-0-15-002, all developers, contractors, and subcontractors must identify at least one trained individual from their company that will be responsible for implementation of the Stormwater Pollution Prevention Plans, and have at least one trained individual on site on a daily basis when soil disturbance activities are being performed. In addition, developers must have a qualified inspector* conduct regular site inspections in accordance with GP-0-15-002.

*Qualified inspectors and trained individuals must have 4 hours of training in the principles and practices of erosion and sediment control endorsed by NYS DEC, SWCD, or CPESC Inc. (Training is valid for 3 years.)

Nassau County Soil & Water Conservation District
1864 Muttontown Road Syosset NY 11791
www.NassauSWCD.org - 516-364-5860 - NassauSWCD2@optonline.net



Nassau also has a great resource in the *Nassau County Soil and Water Conservation District*⁶, this organization is committed to educating and engaging the population in storm water management. One of their main focuses is rain gardens and so far they have constructed three rain gardens located at, Cedarmere Preserve, Centre Island and Bayville Village Hall. To promote these gardens they have involved the community through rain garden volunteer days and Earth Day rain garden construction events.

Cedarmere Pond and Raingarden Volunteer Day

When: Saturday, September 10th, 2016 - 9am to 12pm

Where: The Pond at Cedarmere
225 Bryant Ave, Roslyn, NY 11576

If you choose to work on the raingarden bring: work gloves, a hat and sunscreen. If you choose to work in the pond bring: water shoes, a towel and dry clothes to change into.

Seeking Volunteers!
Help the Friends of Cedarmere and the Nassau County Soil and Water Conservation District remove invasive plants from the pond or help clear the way for Cedarmere's new raingarden!

Before

After

Please visit NassauSWCD.org for more information or to register for the event.

⁶ Nassau County Soil and Water District, <http://www.nassauswcd.org/>

With these projects they have also involved local business, for example the Earth Day project volunteers were all National Grid employees.



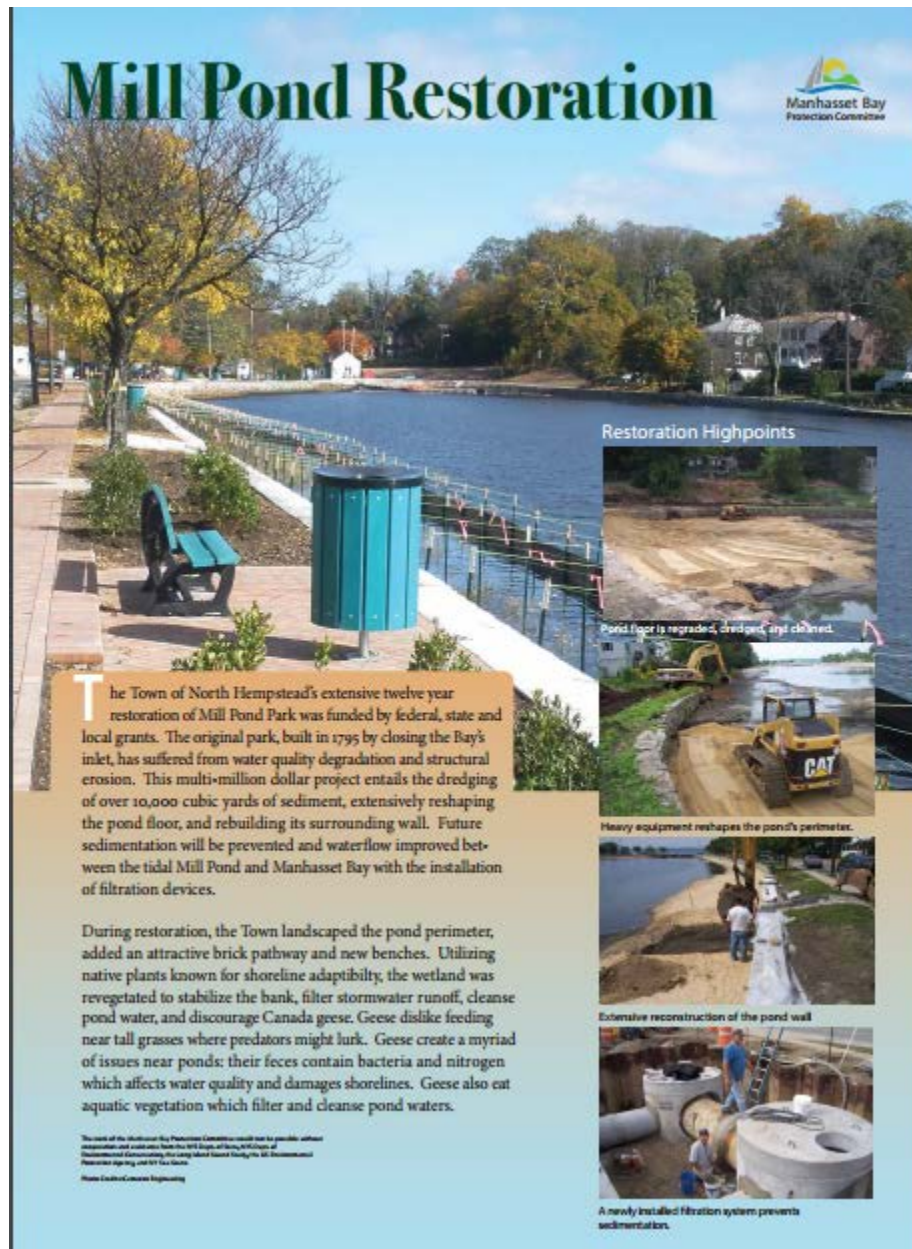
Photo from NassauSWCD

Also, in 2016 and currently ongoing, The NassauSWCD has partnered with the Town of Hempstead to rebuild the wetlands at Mill Pond in Port Washington.

Manhasset

In Manhasset there are also ongoing efforts to protect The Sound and the Manhasset Bay, *The Manhasset Bay Protection Committee*⁷ is one such organization. Their goal is to protect and educate residents about the watershed and its role in impacting the bay and Sound. Judging by their website it appears their main goals are education and awareness, some of their recent projects have been creating informational signs that have been put up in key areas of the watershed. An example of one such sign can be seen below;

⁷ Manhasset Bay Protection Committee, <http://www.manhassetbayprotectioncommittee.org>



The Protection Committee also has placed similar signs in Manor Haven Town Park and Whitney Pond Park. Beyond signage, the Committees website has many great educational resources teaching the history and ecological importance of The Sound and ways in which the residents can protect The Sound in their everyday lives. The Committee is also engaged in a variety of other activities, they have strong presence at myriad environmentally themed festivals throughout Nassau such as;

- Participants at Harborfest (June each year)
- Participants at North Hempstead's Ecofest at Clark Gardens (May each year)
- Participants at Port Washington Nature and History Fest
- Participants at Clark Gardens Earth Day festivities

- Participated in planning and created brochure design for new festival, Long Island Sound Day (held 4/2/2011) with Theodore Roosevelt Sanctuary and 9 other groups

Great Neck

The Town of Great Neck is located along the Manhasset Bay so they fall under the *Manhasset Bay Protection Committees* purview. However, the town also has an official Storm Water Management Program for which they publish reports every year. The main goal of this program is to reduce the amount of runoff and pollutants reaching The Bay, Sound and wetlands in the area.⁸ Unfortunately the town itself doesn't seem to have such great online resources; the only information on their website is a single page describing their goals and some best management practices like cleaning up after pets, not feeding geese and ducks, managing lawn care fertilizers responsibly, etc... The page also has the rules and regulations concerning storm water management for constructions projects. The link to the page is not very visible and unless specifically searching for it, it seems unlikely residents would be aware of its existence. The town also includes a link to their 2016 storm water management report but the report is a bit technocratic and not easily understandable.⁹

Port Washington

Port Washington is situated along both The Manhasset and Hempstead Bays; this puts it in the unique situation of affecting both waterways. One interesting aspect of Port Washington is that instead of the usual septic tanks found around Long Island, they have a sewer system serving the town. However, this system is only for sewage, it is illegal to have any storm water enter their system. The system is managed by the *Port Washington Water Pollution Control District* (PWWPCD) and serves about 28,000 residents and businesses. The facility treats the waste water and then discharges the treated water into Manhasset Bay.

The Village of Port Washington North appears to be very committed to properly managing storm water. To date, they have acquired 1.7 acres of waterfront property that is currently being turned into *Baywalk Park*. According to the village website, the park construction includes shoreline stabilization, water fountains with bottle fill stations, rain

⁸ Village of Great Neck, Storm water Management Program, 2016

⁹ Village of Great Neck, Storm water Management Program, 2016

[illegible]

Hempstead

Hempstead Harbor Protection Committee is one of the major organizations working to maintain and improve the quality of the Hempstead Harbor. Active since 1995, they were a major force in improving the water quality enough to reopen the harbor for shell fishing.

There is also a very active nonprofit called *Coalition to Save Hempstead Harbor* who is "...dedicated to identifying and eliminating environmental threats to Hempstead Harbor and surrounding communities."¹¹ They are currently involved in a variety of initiatives aimed at protecting and maintaining the Harbor such as, Water Monitoring, Reopening of Shellfish beds, Storm water workshops, mapping projects, and beach cleanups. They appear to be a very active organization, their website is updated regularly and they host many events to raise awareness off the issues facing The Sound. Here is an upcoming event they have scheduled for Earth Day,



BEER TASTING



**Celebrate Earth Day with CSHH and
Garvies Point Brewery**

**Sample Craft Brews from
Our Local, Glen Cove Brewery**

Sunday, April 23

6 pm – 9 pm

\$40 per Person

**Includes: Tasting, 3-Hour Open Bar,
and**

Lite Fare from Local Establishments!

Visit our website to purchase tickets. Space is LIMITED!
Must be 21 or over to purchase tickets.

www.coalitiontosavehempsteadharbor.org

Oyster Bay & Cold Spring Harbor

Active in Oyster Bay is the *Oyster Bay, Cold Spring Harbor Protection Committee (OBCSHBC)*; their mission statement is "Improve the health of Oyster Bay and Cold Spring Harbor by coordinating the efforts of all municipalities in the watershed and engaging the

¹¹ Coalition to Save Hempstead Harbor, Mission Statement

public.”¹² The committee is made up of public officials from municipalities all along the Sound including Mayors, Town Executives and residents. In addition, they also work with other organizations protecting the Sound such as, *Friends of the Bay* and the *Manhasset Bay and Hempstead Harbor protection committees*. Some of their major accomplishments and ongoing projects to date deal mostly with assessing water quality and managing nitrogen pollution.

Along with *the Friends of the Bay*¹³ the *Oyster Bay/Cold Spring Harbor Protection Committee* conduct weekly water quality testing April through October every year. The two organizations also organize volunteer clean ups and an annual invasive species removal targeting water chestnuts. The OBCSHBC has also worked to stop overdevelopment along the waterfront; instead they have been successful in having parks built. They are also involved with wetlands restoration, at Eastover Marsh they helped to restore 20 acres of marsh with the installation of a self-regulating tide project. Regarding nitrogen pollution, they have implemented plans to mitigate the impact of water fowl and pet waste. The OBCSHBC has also partnered with the CESSPOOL Project¹⁴ to inform Long Islanders about waste water and proper cesspool and septic system maintenance.



The OBCSHBC has also been involved with two rain garden constructions, one at Cold Spring Harbor Library and the other at The Waterfront Center in Oyster Bay. The OBCSHBC has a very thorough website with an actively updated events calendar including public meetings, beach cleanups and citizen water quality testing events. They also have many educational documents and links, and they would likely be a very useful resource and partner.

¹² Oyster Bay, Cold Spring Harbor Protection Committee <http://www.oysterbaycoldspringharbor.org>

¹³ Friends of the Bay, <http://friendsofthebay.org/>

¹⁴ The CESSPOOL PROJECT, Get Pumped Long Island <http://www.getpumpedli.org/>

Also in Oyster Bay, *Planting Fields Arboretum* (could be more involved with runoff management like rain gardens – have none at the moment) 2016 had a new parking lot installed with permeable pavement and a bio-retention system. The Project was paid for by the New York State Green Innovation Program.¹⁵

Another great resource in Oyster Bay/Cold Spring Harbor is the *Waterfront Center*¹⁶, a non-profit located along Oyster Bay. They're main goal is to combine education and recreation for families and students. They employ hands on marine education programs crafted by New York State certified teachers; their programs include Biology and Ecology, Earth and Physical Science, Marine Exploration and Innovation, Data Collection and Research and Custom Programs.

Cold Spring Harbor has also invested in an experimental wastewater treatment practice at Upland Farms. In partnership with The Nature Conservancy and with a grant from the National Fish and Wildlife Foundation, a constructed wetland was developed to treat wastewater.¹⁷

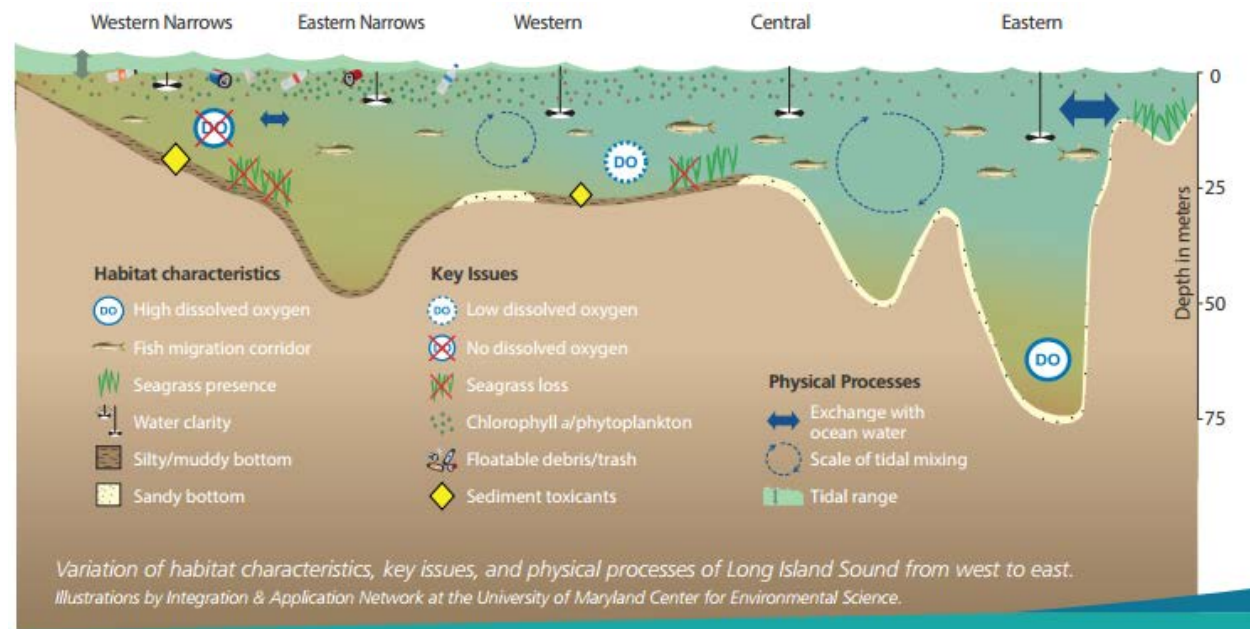
¹⁵ Evergreen, 2016, Planting Fields Foundation, Spring 2016 Newsletter

¹⁶ The Waterfront Center, <https://www.thewaterfrontcenter.org/>

¹⁷ Grant Helps Fund Green Wastewater Treatment, Nov. 2016 <http://www.publicnewsservice.org/2016-11-29/environment/grant-helps-fund-green-wastewater-treatment/a55118-1>

Suffolk County:

Suffolk County also has a soil and waterways conservation district but it appears to be a bit less active and decentralized compared to Nassau. However, due to slightly smaller population densities and less built environments the Sound itself is cleaner in Suffolk. According to Eco-Health Report Cards¹⁸, the quality of the Sound shows a clear gradient, becoming cleaner as you travel west to east; however, there is still a lot to be done in Suffolk.



The Suffolk County government has created a dedicated website for their Storm Water Management Program; it has many resources and outlines the mitigation efforts taking place on county owned properties.¹⁹ Directly on their welcome page they promote building rain gardens and provide a link to the University of Connecticut's Rain Garden App. The county also promotes the Watershed Steward Program which seeks to engage and educate residents in protecting local waterways.

¹⁸ Eco-Health Report Cards Long Island Sound, <https://ecoreportcard.org/report-cards/long-island-sound/>

¹⁹ Suffolk County Storm Water Management Program, <http://www.suffolkcountyny.gov/stormwater/Home.aspx>



New York Master Watershed Steward Program

Why become a Master Watershed Steward?

- Program educates and trains citizens to serve as volunteers for the protection, restoration, and conservation of local watersheds
- The focus for 2014 will be on the Peconic Estuary Watershed
- Participate in a lecture series with leading experts discussing water quality issues. Topics will include stormwater pollution, nitrogen and bacteria loading, and ongoing eelgrass and shellfish restoration projects
- Participate in field trips to explore the Peconic Estuary watershed
- Use your acquired skills and knowledge to complete a restoration project



New York Master Watershed Steward Program in Suffolk County

- Make a difference in the Peconic Estuary watershed
- Become personally involved in a watershed improvement project: construction of a demonstration rain garden, use testing kits to monitor water quality, and participate in, wetlands, eelgrass and shellfish restorations
- Help increase public awareness of local watershed problems
- Be a leader in watershed protection in your community

For more information to participate in the Master Watershed Steward Program:
Contact Mark Cappellino at mec26@cornell.edu

Visit our website:
Suffolkstormwater.com



Suffolk County Stormwater
Management Program
Serve Ithaca Suffolk County Executive
Department of Public Works
Department of Economic Development and Planning



Cornell University
Cooperative Extension
of Suffolk County

Huntington, Centerport & Northport

The major waterways that The Town of Huntington encompasses are Huntington Bay, Huntington Harbor and Northport Bay. The municipalities effecting and managing these waterways are Huntington, Centerport, Eatons Neck, Asharoken and Northport.



Huntington seems to be well aware of the many benefits provided by the Sound and in accordance with the NYSDEP Huntington produces an annual Storm Water Management

Program Plan.²⁰ In addition, Huntington also has a forward looking plan created in 2008 titled, Horizons 2020 Comprehensive Plan²¹ that outlines their economic and environmental goals. Of the many environmental goals, shoreline revitalization and coastal resource protection are prominent features. Current ongoing initiatives by the town are; community beach clean ups, volunteer plant ins at Crab Meadow, Centerport and Gold Star beaches, maintaining an up to date GIS database outlining storm water discharges and areas of concern, local laws dealing with pet waste and feeding of waterfowl and the town website also has a number of EPA educational resources.

Huntington also has an ongoing BYOB or Bring Your Own Bag campaign²², informing residents about the negative impacts of plastic bags and encouraging the use of reusable bags. In conjunction with Citizens Campaign Fund for the Environment, the town has also constructed a rain garden to help manage storm water runoff at Centerport Beach. With a grant from the National Fish and Wildlife Foundation they constructed a 6,100 square foot rain garden in the beaches parking lot.

Regarding Northport Harbor, there is The Northport Harbor Water Quality Protection Committee. However, there is little information regarding any ongoing projects or initiatives, although, they do fall under the jurisdiction of Huntington.



Centerport Beach rain garden

²⁰ Town of Huntington Storm water Management Program Plan, August 2016

http://www.huntingtonny.gov/filestorage/13749/16439/16577/16591/26387/SWMP_Final_1019.pdf


²¹ Horizons 2020 Comprehensive Plan Update, Dec. 2008

<https://www.huntingtonny.gov/filestorage/13749/13847/16804/16874/16878/20879/872sm.pdf>

²² Town of Huntington BYOB campaign, <http://www.huntingtonny.gov/BringYourOwnBag>


Town of Smithtown

In Smithtown, along with the Sound, the Nissequogue River is a major body of water which feeds into the Sound. The Regional Plan Association (RPA) has deemed the waterway so important they have a dedicated website and plan to maintain the rivers ecological viability. Working with The Town of Smithtown and its incorporated areas the RPA lists numerous objectives such as, maintaining native vegetation and buffer zones, monitoring water quality, reducing the impacts of storm water pollution, determining sources of nitrogen overloading, monitoring eutrophication events, and petitioning the EPA to designate the river as a “No Discharge Zone”.²³ However, it appears the page hasn’t been updated since 2010 and it’s proven difficult to find out how many of these initiatives have been completed or is in progress. Smithtown’s website has a useful flyer to educate people about storm water pollution prevention:



BE THE SOLUTION TO STORMWATER POLLUTION!

When it rains, everything on the ground seeps into our drinking water or washes into street drains that lead to our streams, ponds, the Nissequogue River and Long Island Sound




- Use Fertilizer Sparingly
- Never Dump Anything Down Storm Drains
- Vegetate Bare Spots In Your Lawn
- Compost Yard Waste
- Direct Downspouts Away From Paved Surfaces

- Always Pick Up After Pets
- Inspect And Pump Your Septic Tank Regularly
- Utilize A Rain Garden Or Rain Barrel
- Use A Car Wash Instead Of Washing It At Home
- Have All Car Leaks Fixed

TOWN OF SMITHTOWN DEPARTMENT OF ENVIRONMENT AND WATERWAYS
www.smithtownny.gov

Nissequogue River

Stewardship Action Plan



Cover Illustration by Jan Peruchuk

Regional Plan Association
Summer 2008

²³ Regional Plan Association, Nissequogue Watershed Stewardship, <http://www.rpa.org/nissequogue/>

Port Jefferson Village

A major harbor and active waterway is Port Jefferson Harbor which is a part of the Town of Brookhaven. Over the years the harbor has often suffered from frequent red tides and shellfish closings. Port Jefferson has a nice looking wastewater and runoff information page on the town website, unfortunately many of the informational links and links to their annual storm water reports do not lead anywhere or lead to blank pages. However, in 2014 Port Jefferson partnered with Cornell University to determine the sources of pollutants entering the harbor. They determined that much of pollution, waterfowl and dog waste, was originating as runoff from Main Street and the various parking lots around the town.²⁴ Also operating in Port Jefferson is North Shore Tree and Landscaping, they are a private company but specialize in rain garden construction and could be a beneficial partner for the area.²⁵

Shoreham

Also in the Town of Brookhaven, Shoreham is looking into new ways to manage nitrogen pollution. With a grant from the Long Island Sound Futures Fund and partnering with Peconic Green Growth and Stony Brook University, a test project is being installed at the Robert Reid Recreation Center in Shoreham. This test involves a new waste water treatment technology known as a Nitrogen Reducing Biofilter²⁶ which would be able to hook up to existing septic systems.

Town of Riverhead

Riverhead, it appears has a number of green infrastructure projects they are looking into or are currently developing. However, it seems funding and manpower is two major barriers for the town. There is also a lack of any centralized data or resource center to see what the town is doing. According to Riverhead News, as of 2012 Riverhead was considering a number of projects such as, wetland restoration, bioretention projects, grass pavers and rain gardens.²⁷ Unfortunately it was difficult to find out which of these projects became realities. However, partnering with Cornell University a rain garden was constructed in 2012 at the Kermit Graf

²⁴ Water Quality Trends for Port Jefferson Harbor, 2015, <http://portjeff.com/wp-content/uploads/2016/05/Water-Quality-Trends-2015.pdf>

²⁵ North Shore Tree & Landscaping, <http://www.northshoretreetree.com/Rain-Garden-Landscape-Design-Long-Island-NY>

²⁶ Brookhaven Receives Long Island Sound Futures Fund Grant Award for Project to Protect Water Quality in LI Sound, Nov. 2016 <https://www.brookhavenny.gov/Press-Room/ArticleID/5159/Brookhaven-Receives-Long-Island-Sound-Futures-Fund-Grant-Award-for-Project-to-Protect-Water-Quality-in-LI-Sound>

²⁷ Riverhead Town charting water for storm water plan, March 2012, <http://riverheadnewsreview.timesreview.com/2012/03/35332/riverhead-charting-waters-for-stormwater-plan/>

Building.²⁸ Also, in 2016 a new rain garden was built along the Peconic riverfront in partnership with the Peconic Estuary Program (PEP).²⁹ While the PEP focuses more on the Peconic Bay than the Sound they do have an ongoing rain garden rebate program for residents located within the Peconic Bay Watershed.



Photo: Courtesy Blas; Peconic Riverfront rain garden

²⁸ Cornell Cooperative Extension, Rain Gardens, <http://ccesuffolk.org/marine/citizen-science/rain-gardens>

²⁹ Rain Garden Planted Downtown by Volunteers, Peconic Estuary Program, Apr. 2016, <http://riverheadlocal.com/2016/04/25/volunteers-help-peconic-estuary-program-install-rain-garden-peconic-riverfront/>

Southold

Along with Cornell University, Southold will be home to Suffolk counties first ever Living Shoreline project at the Marine Education Center. 197 feet of shoreline will be used for the project where cord grass and black ribbed muscles will be used to prevent erosion and mitigate and filter runoff and storm water.³⁰



Clumps of ribbed mussels are usually found half-buried in the mud among marsh grasses. Photo: Chesapeake Bay Program

Unfortunately Southold's website doesn't provide many resources or updates in regards to the green infrastructure programs they are involved in or proposing. It appears that the town's major focus currently is managing erosion of their shorelines and preventing property owners from hardening the shoreline.

Recommendations

Across the North Shore of Long Island there are many areas in which SLI could become involved in protecting the Sound. The first area of concern is the communication or lack thereof between the municipalities. Oyster Bay and Huntington seem to be communicating and coordinating with one another but they are the outliers. In this area I think SLI could become an important lynch pin, connecting municipalities along the North Shore and helping to coordinate efforts to protect the Sound. All towns across the North Shore share the same waters and impact one another so it makes sense that they should be better connected.

In the political sphere, green infrastructure, drinking water quality and LI Sound water quality have seen bi-partisan support. In the first quarter of 2017 the state assembly proposed a large budget to target these issues. In particular, Assemblyman Chad Lupinacci, who is a GOP

³⁰ County's first living shorelines project planned for marine education center, in partnership with Southold Town, Aug. 2016, <http://southoldlocal.com/2016/08/29/countys-first-living-shorelines-project-planned-marine-education-center-partnership-southold-town/>

representative for Huntington, has been outspoken in demanding more funding and resources be allocated to protect the watersheds along the North Shore. He could potentially be a good ally to promote green infrastructure projects in the future.

Rain gardens, rain gardens, rain gardens, it seems that many municipalities and residents on the Island are aware of rain gardens and their benefits. As we here at SLI are aware of, due to the relatively low cost and design flexibility, rain gardens are an ideal project for many towns. There are already a few existing rain gardens around the Island but there is huge potential for gardens to be installed all over the North Shore. Many municipally owned parks and parking lots are located along the shores of the Sound and these spaces are ideal for rain gardens. The Port Jefferson Chamber of Commerce has an annual garden tour and competition called “The Gardens & Landscapes of Port Jefferson”. Port Jefferson in particular has a significant problem with runoff entering their harbor so this could be a great event to become involved with and used to promote rain gardens.³¹ Replicating an event like this may also be a good suggestion for other towns.

While rain gardens are a great project for towns to be involved in there seemed to be a noticeable lack of other types of projects. It seems that many towns in Long Island are somewhat behind in current knowledge of green infrastructure, green streets, permeable pavement, ecoroofs, enhanced buffer zones, etc... are all project areas where towns and businesses across the North Shore could become more proactive. Some towns do mention wetland restoration projects but only a few were actually engaging in restoration or developing constructed wetlands. It may be beneficial to develop an easily digestible yet comprehensive brochure of modern green infrastructure projects and distribute them to municipalities, state and county representatives and local businesses.

Potential Partners and Persons of Interest

Patricia Aitken, Friends of the Bay

Al Caccese, Audubon New York

Carol DiPaolo, Coalition to Save Hempstead Harbor

Maureen Dolan Murphy, Citizens Campaign for the Environment

Donald McKay, Coalition for Protection of Long Island Ground Water

David Miller, Ecology and Environment Inc.

Jim Moriarty, Town of Oyster Bay

Daniel Natchez, DSN Associates

³¹ The Gardens & Landscapes of Port Jefferson 2017, <http://portjeffchamber.com/events-calendar/gardens-landscapes-of-port-jefferson-3/>

Eric Swenson, Hempstead Harbor Protection Committee

Jennifer Wilson-Pines, Manhasset Bay Protection Committee

Joel Ziev, Ed.D., Town of North Hempstead

Chad Lupinacci – State Assembly, Huntington

Edward A.T. Carr, Director of Maritime Services, Huntington & Northport Harbor Water Quality Protection Committee
