



**Eastern
Long Island
Chapter**



Blue Water Task Force 2017 Water Quality Report

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Executive Summary

The Surfrider Foundation, in partnership with Concerned Citizens of Montauk and Peconic Baykeeper monitored approximately 50 sites throughout the Town of East Hampton and Southampton in 2017, analyzing water quality samples for the presence of enterococcus, a bacteria used to indicate fecal pollution and public health risk in recreational waters. An analysis of samples indicates that, (1) bacteria levels are higher in closed waterbodies with minimal to no flushing, (2) bacteria levels are higher during the summer months, and, (3) bacteria levels are higher after rain events. Blue Water Task Force data are being used by, and in conjunction with several municipal and nonprofit partner projects aimed at addressing some of the documented water quality issues at monitored locations through advanced monitoring, source tracking and/or remediation projects.



Background: Blue Water Task Force

The Blue Water Task Force (BWTF) is the Surfrider Foundation's citizen-science water quality monitoring program that provides critical water quality information to the community to protect public health and clean water. BWTF data are used to advise community members and beachgoers about current water conditions, and to inform decision makers of local water pollution problems so sources can be investigated and solutions implemented.

The Surfrider Foundation Eastern Long Island Chapter's Blue Water Task Force program runs in partnership with [Concerned Citizens of Montauk \(CCOM\)](#) and [Peconic Baykeeper](#). Trained volunteers collect water samples from over 50 locations between East Quogue to Montauk, including ocean beaches, bays, harbors, coastal ponds and freshwater flows of water on the beach including creeks and stormwater discharges.

Water samples are analyzed for enterococcus, a coliform bacteria that is plentiful in the gut of warm-blooded animals. Measurable amounts of enterococcus in the water indicate the presence of fecal pollution (human or animal waste) and other harmful pathogens that could make people sick with gastrointestinal illness, rashes, eye and ear infections, or worse.

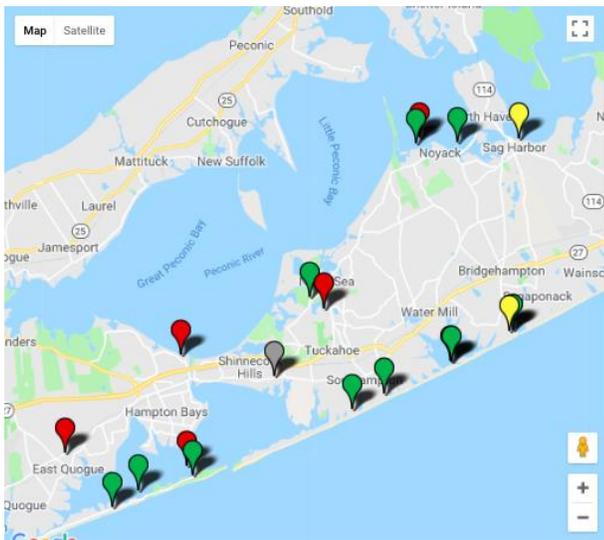


Figure 1: BWTF sampling locations in Southampton, New York.

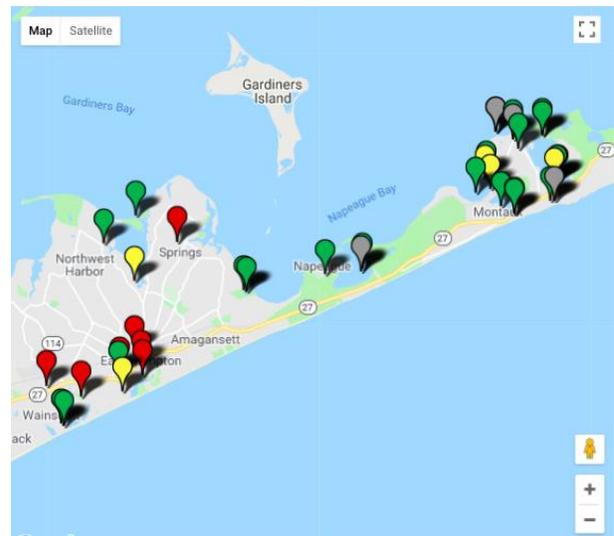


Figure 2: BWTF sampling locations within East Hampton, New York.

Sampling is conducted on a weekly basis during the summer months, bi-weekly during the spring and fall, and monthly during the winter. Water quality samples are collected and processed by dedicated citizen scientists in either the lab located in the office of Concerned Citizens of Montauk (East Hampton samples) or Dr. Chris Gobler’s Lab at Stony Brook Southampton (Southampton samples).

The Eastern Long Island Blue Water Task Force program is designed to supplement seasonal monitoring conducted by the [Suffolk County Department of Health Services](#) (SCDHS) at lifeguarded beaches. All BWTF data are compared to national water quality standards set by the Environmental Protection Agency (EPA) to protect public health in recreational waters and used by the County to issue beach closures and swim advisories.

All BWTF data are shared online on the [Blue Water Task Force website](#), via social media by the participating organizations, in “Water Quality Alert” emails and press releases, and now on a mobile application hosted by [Swim Guide](#). Presentations and workshops are also held throughout the year to inform local decision makers of water quality issues of concern and to engage members of the public and school children.

Results and Discussion

Blue Water Task Force results obtained during the 2017 calendar year were analyzed for trends in water quality conditions at monitored sites between East Quogue and Montauk. During 2017 over 1100 unique data points were generated from samples collected from recreational waters at ocean and bay beaches, coastal ponds, harbors, creeks and sources of stormwater. All data were compared to the recreational health standard of 104 colony forming units (cfu) of enterococcus per 100 mL of seawater, or as presented below as 104 enterococcus cfu/100mL.

Table 1: Summary of 2017 Results shows sampling sites tested, type of site, the number of samples collected during 2017, and the percentage of samples with high bacteria counts that exceeded the health standard of 104 cfu/100mL enterococcus. Locations are organized from lowest to highest percent of high bacteria counts.

East Hampton Data	Site Type	Sample Count	% Exceedance/ High Bacteria
Napeague Harbor: East	Harbor	18	0%
Lake Montauk: Harbor	Harbor	16	0%
L I Sound: Soundview Drive Beach	Bay Beach	10	0%
Surfside Place: Ocean Beach	Ocean Beach	30	3%
Fort Pond: Industrial	Pond	30	3%
L I Sound: Fort Pond Bay at Tuthill Rd	Bay Beach	28	4%
L I Sound: Fort Pond Bay at Navy Rd	Bay Beach	27	4%
Georgica Beach Ass./ Third Jetty	Ocean Beach	25	4%
Napeague Harbor: West	Harbor	18	6%
Lake Montauk: Nature Preserve Beach	Harbor	29	7%
Ditch Plains: Ditch Witch	Ocean Beach	29	7%
Lake Montauk: Causeway South	Harbor	11	9%
Lake Montauk: South Beach	Harbor	30	10%
Hook Pond South	Coastal Pond	18	11%
Fresh Pond: Beach	Bay Beach	24	13%
Three Mile Harbor: Head of the Harbor	Harbor	23	13%
Three Mile Harbor: Folkstone Drive	Harbor	21	14%
Georgica Pond Beach-side	Coastal Pond	26	15%
Fort Pond: Ramp	Pond	29	17%
Lake Montauk: West Creek	Creek	28	18%
Three Mile Harbor: Settler's Landing	Harbor	15	20%
Georgica Pond: Rte 27 Kayak Launch	Coastal Pond	25	20%
Georgica Pond: Cove Hollow Access	Coastal Pond	25	24%
Fresh Pond: Creek	Creek	24	29%
Lake Montauk: Little Reed Pond Creek	Creek	30	30%
Lake Montauk: East Creek	Creek	30	37%
Pussy's Pond	Coastal Pond	23	48%
Surfside Place: Outfall Pipe	Stormwater	14	50%
EH Town Pond	Pond	2	50%
Hook Pond: David's Lane Duck Pond	Pond	23	83%

EH Village Green Bioswale	Stormwater	2	100%
Southampton Data			
Southampton: Gin Lane/Bathing Corp.	Ocean Beach	24	0%
Southampton: Old Town Beach	Ocean Beach	25	0%
Hampton Bays: Meschutt Beach	Bay Beach	24	0%
Flying Point: Scott Cameron Beach	Ocean Beach	26	0%
East Quogue: Tiana Bay Park	Bay Beach	21	0%
East Quogue: Weesuck Creek	Creek	19	0%
Stony Brook University: SoMAS Boat Ramp	Bay Beach	5	0%
Sag Harbor: Havens Beach	Bay Beach	29	3%
Sagg Main Beach	Ocean Beach	27	4%
North Sea: Big Fresh Pond	Pond	27	4%
Hampton Bays: Ponquogue Beach	Ocean Beach	25	4%
East Quogue: Triton Lane	Ocean Beach	20	5%
Sag Harbor: Long Beach	Bay Beach	27	7%
Hampton Bays: Old Ponquogue Bridge Marine Park	Bay Beach	25	16%
Noyac: Circle Beach	Bay Beach	23	22%
Noyac: Circle Beach Estuary	Estuary	16	25%
Flying Point: Mecox Bay	Coastal Pond	27	26%
Sagg Pond	Coastal Pond	27	41%
North Sea: Little Fresh Pond	Pond	27	63%

While the high percentage of high bacteria counts in sites such as the EH Village Green Bioswale and the Outfall Pipe at Surfside Place in Montauk are to be expected given that they receive high volumes of stormwater and road runoff, there was an alarmingly high number of sites that are used recreationally by paddlers and families with children that failed to meet the health standards on multiple occasions. In East Hampton, the sites of most concern are Fresh Pond Creek in Amagansett with a 29% exceedance rate, Little Reed Pond Creek at the Nature Preserve Beach in Lake Montauk (30%), the Kayak Launch at Georgica Pond (20%) and Settler's Landing in Three Mile Harbor (20%). In Southampton, Little Fresh Pond in North Sea failed to meet the health standard 63% of the time it was tested. Sagg Pond (41%), Mecox Bay (26%), and both the estuary (25%) and bay beach (22%) at Circle Beach in Noyac are also concerning as they are all popular for beachgoing and recreation.

An analysis of all water quality data collected in 2017 also reveals the following trends;

Trend 1. Bacteria levels tend to be higher in creeks and closed, still bodies of water than at open ocean and bay beaches.

As Table 1 above demonstrates, water samples collected from ocean and bay beaches tend to yield fewer high bacteria counts in comparison to samples collected from more enclosed ponds and lakes and sampling sites that receive high volumes of stormwater runoff such as creeks, swales and discharge pipes. This trend is easy to discern when viewing water quality results from Sagg Main and Sagg Pond in Sagaponack and at Fresh Pond Beach and Creek in Amagansett.

Case Study: Sagg Main Beach and Sagg Pond, Sagaponack

Samples are collected at two locations in Sagaponack, in Sagg Pond and at the adjacent ocean beach, Sagg Main.

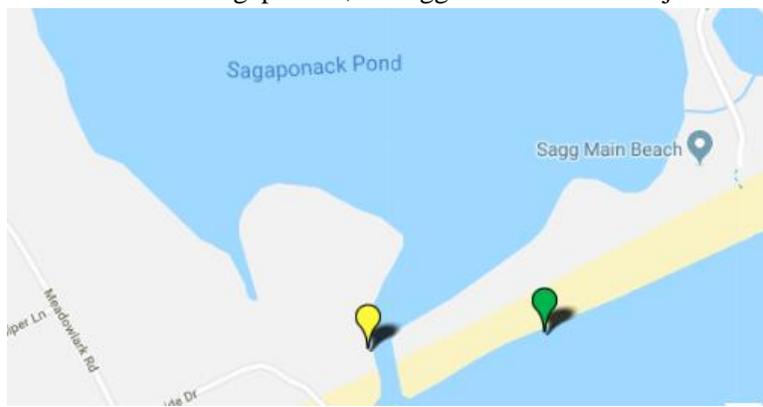


Figure 3: Sampling locations at [Sagg Pond](#) (left, yellow) and [Sagg Main](#) (right, green).

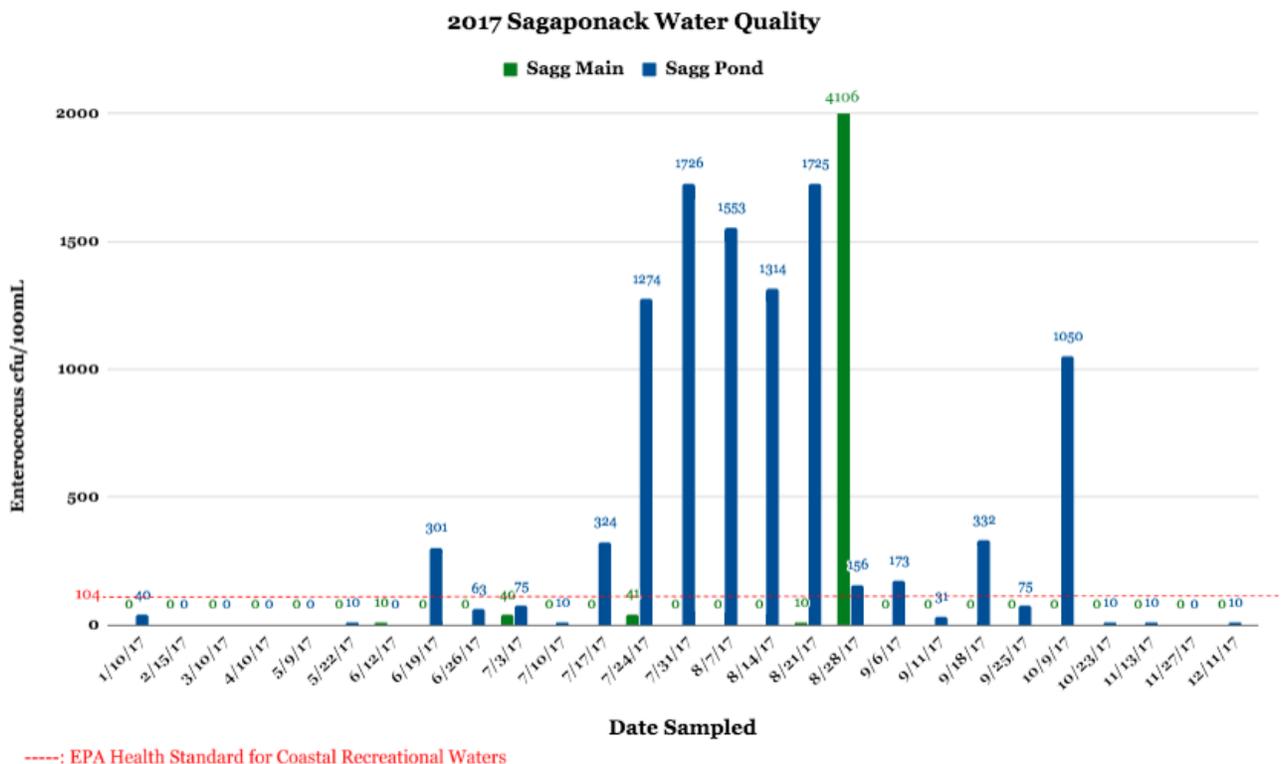


Figure 4: Enterococcus levels measured at Sagg Pond and Sagg Main during 2017

Of the 27 samples collected during 2017, 41% of results from Sagg Pond measured bacteria levels above the 104 cfu/100mL health standard, while only 4% results from the adjacent ocean beach yielded high bacteria. It is reasonable to assume that the opening of the cut between Sagg Pond and exchange of water with the Atlantic Ocean would influence water quality in the pond, likely reducing bacteria levels. During 2018, both the opening and closing of the cut as well as tide cycle will be consistently noted on all sampling events for further analysis next year.

Case Study: Fresh Pond Park, Amagansett

At Fresh Pond Park, there is a creek that flows intermittently, bisecting the beach and connecting Fresh Pond to Gardiners Bay. Depending on environmental factors such as tide and recent weather events, the creek will stop flowing and close Fresh Pond off from the bay. Samples are collected both in the creek and the bay beach in Gardiners Bay.

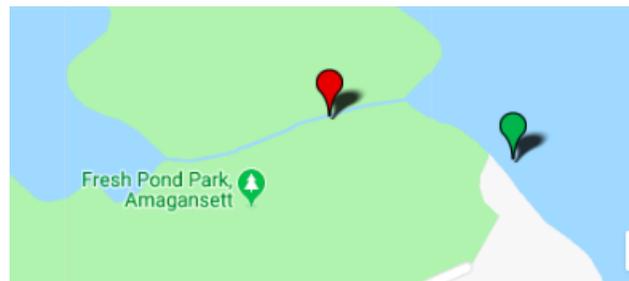


Figure 5: Sampling locations at [Fresh Pond: Creek](#) (left, red) and [Fresh Pond: Beach](#) (right, green).

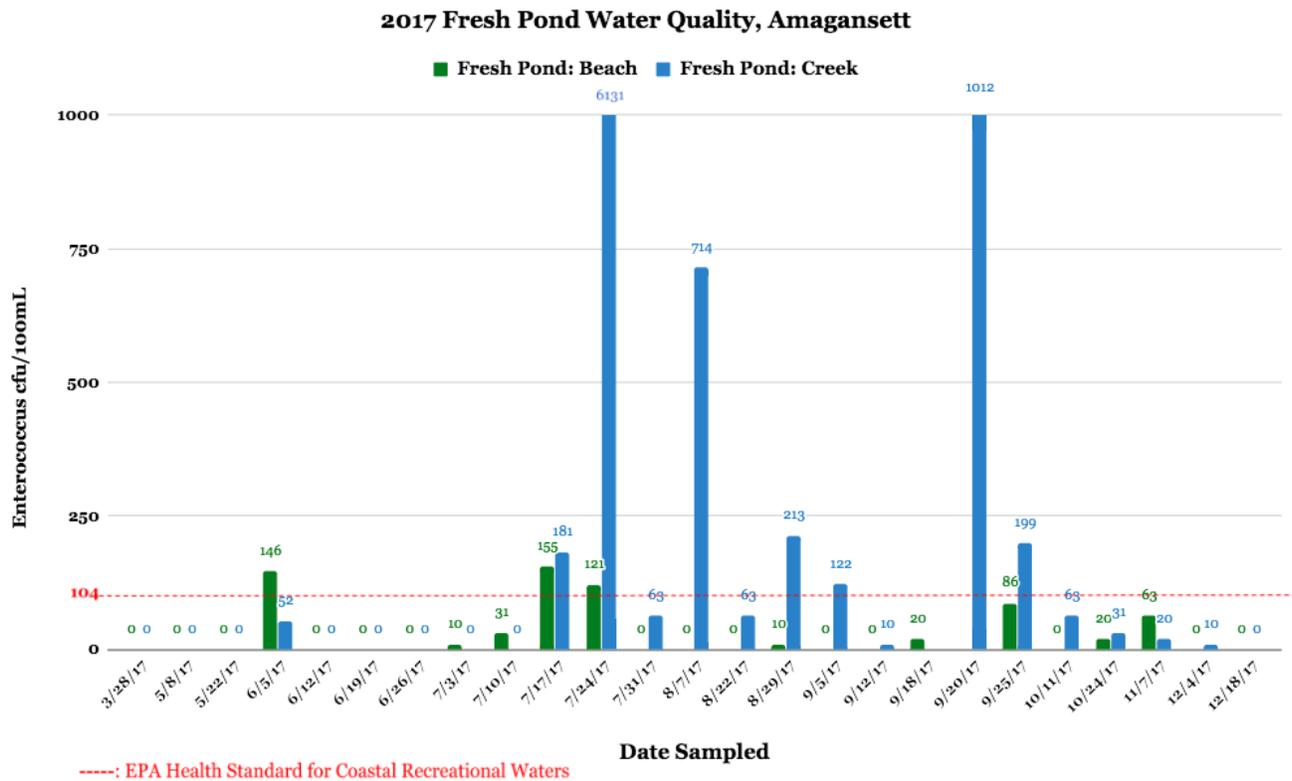


Figure 6: Enterococcus levels measured at Fresh Pond: Beach and Fresh Pond: Creek during 2017

During 2017, 24 samples were collected at Fresh Pond Park, with 30% of the creek samples and 13% of the beach samples exceeding the recreational water quality standard (Table 1). These results align with historical data at

Fresh Pond: Beach and Fresh Pond: Creek, showing that the creek experiences higher bacteria levels than the adjacent open bay beach.

There are a number of factors that could be influencing this trend. In comparison to ocean and bay beaches, more enclosed bodies of water like lakes and coastal ponds tend to be:

- more shallow
- warmer during the summer months
- more stagnant, experiencing less flushing and water exchange
- the primary receiving bodies for pollutants coming from commercial and residential development in their watersheds

Trend 2. Bacteria levels are higher during summer months.

Bacteria levels measured between June and October are generally higher than during the cooler winter and spring months. During the summer the water is warmer, and importantly, the local population increases significantly. More people in the watershed means more household waste, including fuller cesspools and septic systems, and pet waste that if left unattended, can be washed into surface waterways by stormwater runoff.

Case Study: Fort Pond, Montauk

Most sampling sites in East Hampton and Southampton show elevated enterococcus levels during the summer, but nowhere is this trend more obvious than in Montauk's Fort Pond. Samples are collected at Industrial Road on the north end of Fort Pond and at the Ramp on the southern end.

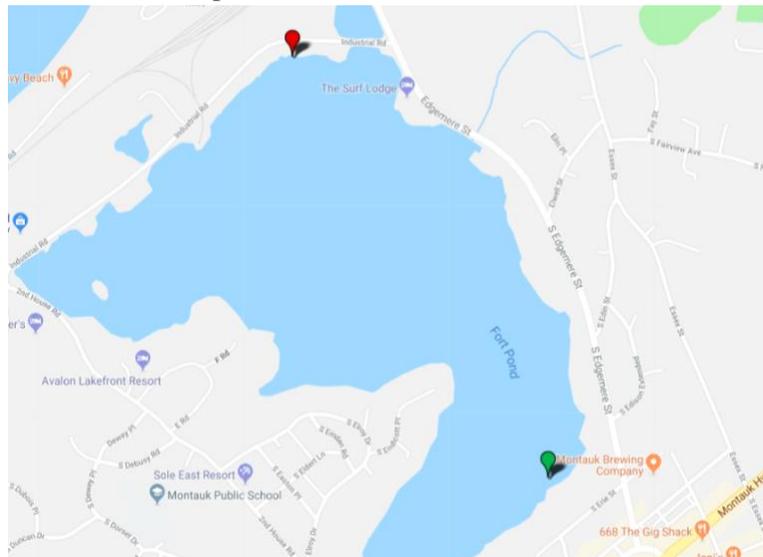


Figure 7: Sampling locations at [Fort Pond: Industrial](#) (left, red) and [Fort Pond: Ramp](#) (right, green).

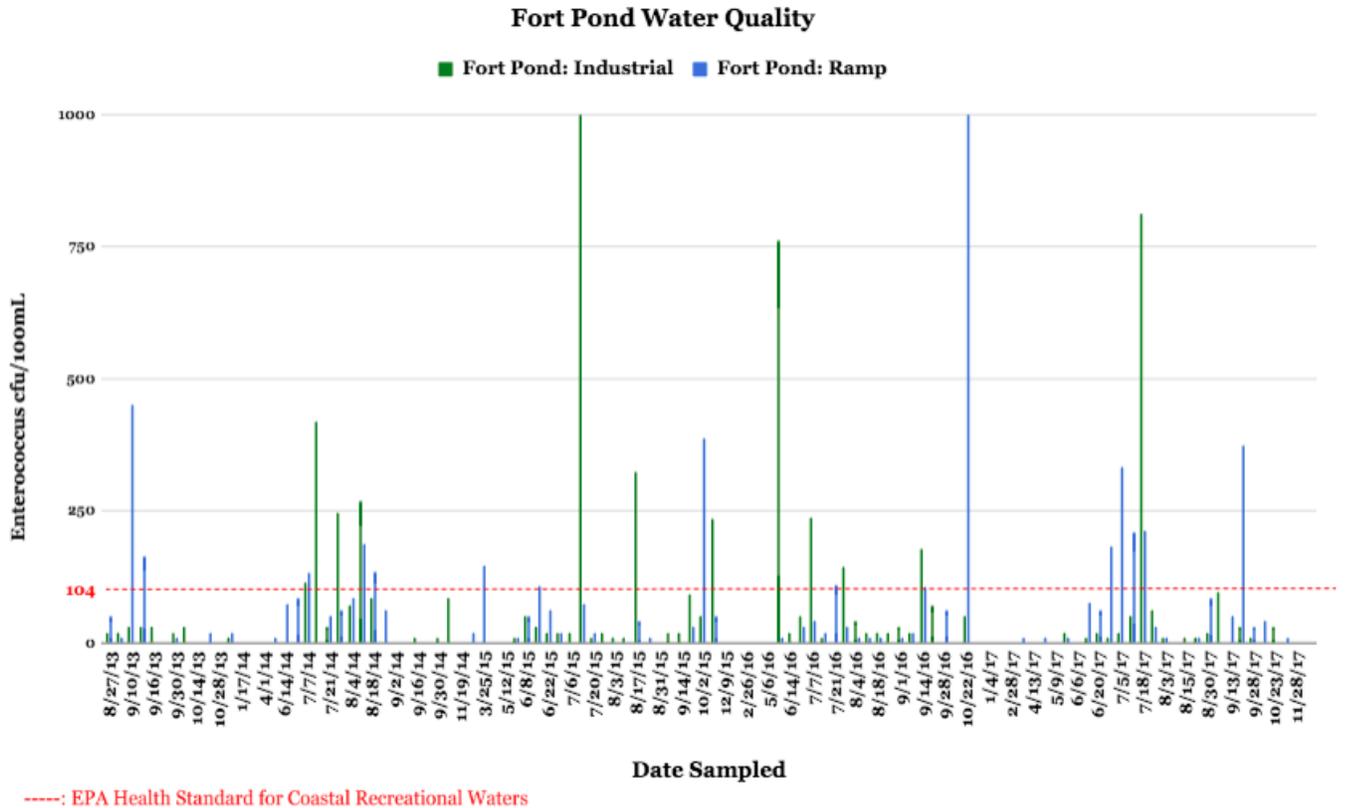


Figure 8: Enterococcus levels measured in Fort Pond: Industrial and Fort Pond: Ramp from June 2013 - Nov. 2017

Figure 8 above illustrates quite clearly clusters of higher bacteria counts during the summer months of June through October, and relatively low bacteria results during the colder winter months. This trend repeats itself each of the five years that Fort Pond has been tested (2013- present).

Case Study: Little Fresh Pond, Southampton

Samples are collected in Little Fresh Pond at the end of Fresh Pond Lane.



Figure 9: Sampling location at [Little Fresh Pond](#) (red).

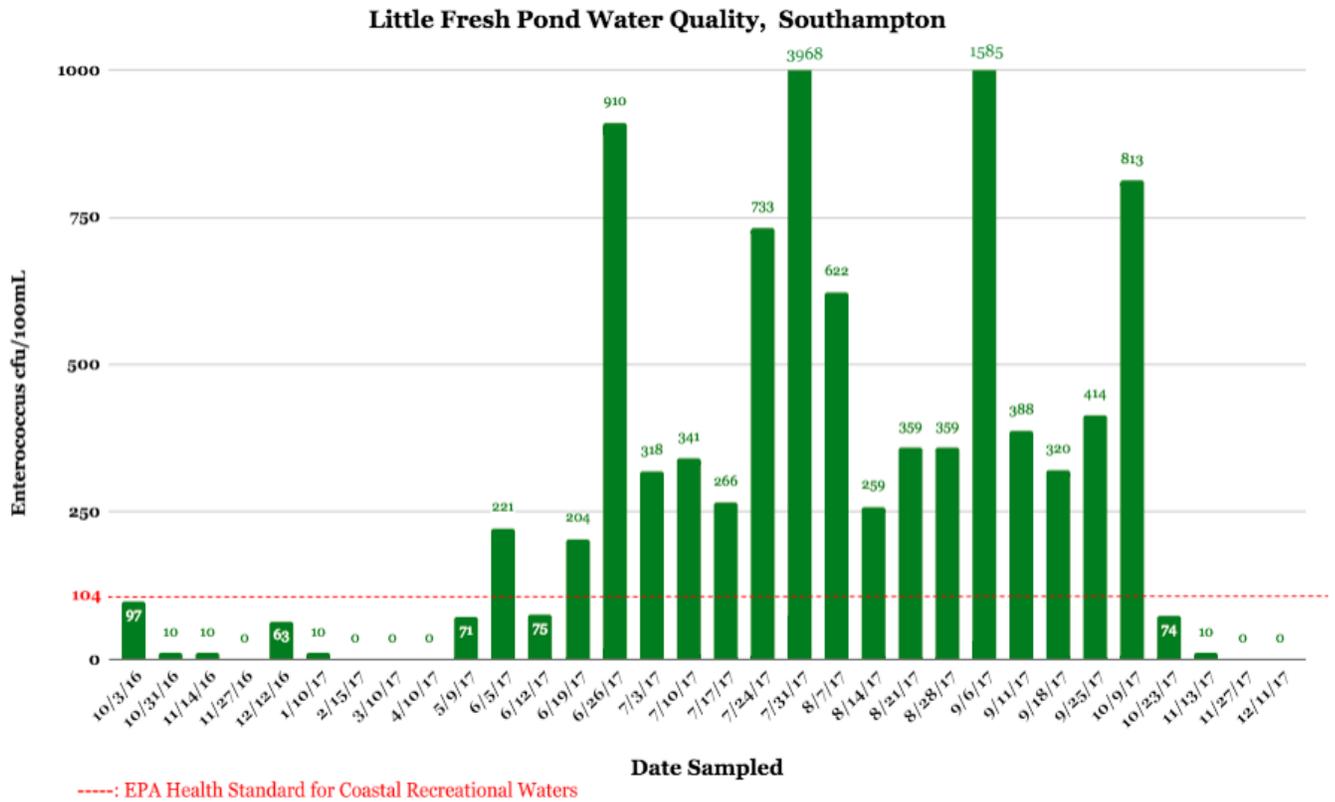


Figure 10: Enterococcus levels measured at Little Fresh Pond from October 2016 - December 2017.

The above graph of water quality data from Little Fresh Pond shows a clear seasonal trend of elevated bacteria levels during the summer months. This site was first tested in October 2016 and all bacteria levels remained below the health standard until June 2017. Then from June through early October all but one sample measured bacteria counts above 104 cfu enterococcus/100mL. The water quality conditions at Little Fresh Pond are particularly concerning because June-October are the months when recreational use is highest. In addition, with 20 out of 27 samples collected during 2017 (or 63%) failing to meet the health standard, Little Fresh Pond earns the dubious distinction of the most polluted BWTF sampling site in Southampton.

Trend 3. Higher bacteria levels are measured after rain events.

[An analysis of Blue Water Task Force data collected from 2013 through 2016](#) showed that higher enterococcus levels were measured at a number of sampling sites during and within 48 hours following rain events. Water quality results from 2017 seem to show a similar trend, which is most strikingly illustrated by the elevated bacteria levels measured in water samples collected during Tropical Storm Jose that hit Long Island last September. In Montauk during Tropical Storm Jose, the storm tide was 2.52 ft above the predicted astronomical tide, while the storm also caused groundwater inundation of 1.6 ft above ground level, [according to NOAA](#).

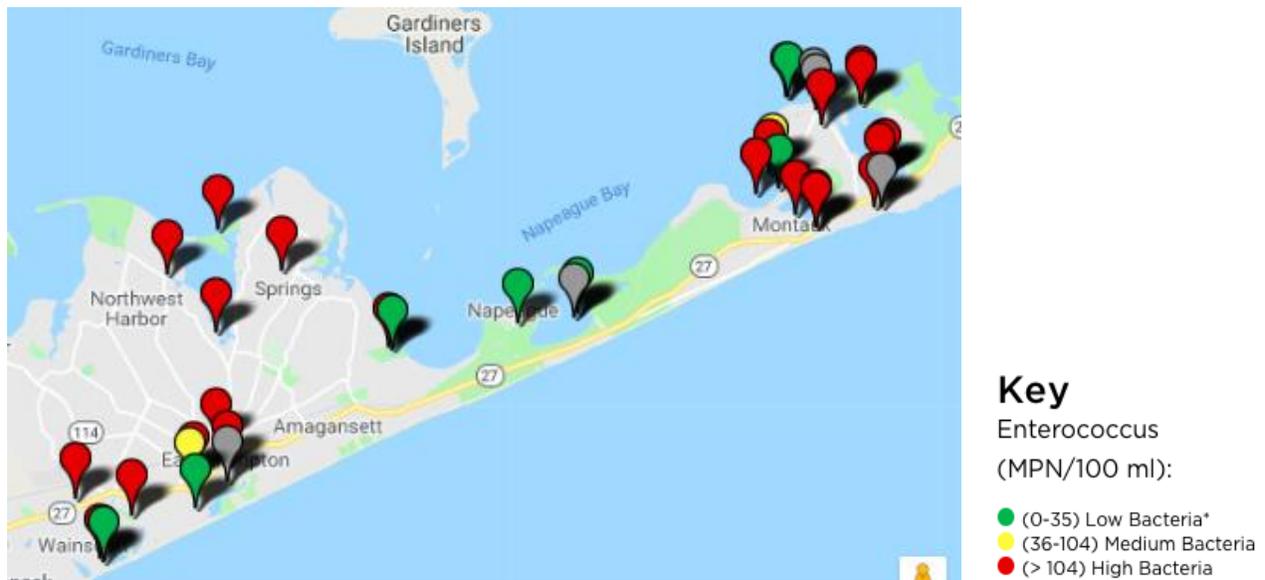


Figure 11: Map of East Hampton sampling sites depicting water quality results collected during Tropical Storm Jose, between September 18th-20th, 2017.

All of the 27 samples collected in East Hampton after Tropical Storm Jose showed detectable bacteria levels, even at the ocean and bay sites that typically test clean. Even worse, 20 of those 27 samples measured high bacteria levels that exceeded the recreational water quality standard meant to protect public health. During Tropical Storm Jose, even the ocean water at Ditch Plains and Surfside Place in Montauk had high bacteria counts.

Stormwater runoff is the number one cause of beach closures and swimming advisories in the United States. As rain hits impermeable surfaces, like roofs and roads, it collects pollutants like animal waste, pesticides, and chemical fertilizers that end up in our waterways. Here on the East End where our groundwater is generally shallow and almost all of our households are connected to individual sanitary systems rather than sewers, flood conditions are even more problematic as groundwater levels rise and cesspools and septic systems can leach wastewater into ground and surface waterways. Combine those impacts with extreme tidal cycles that can occur at the same time as coastal storms, and you can see why Tropical Storm Jose had such an impact on water quality conditions.

Additionally, towards the end of the summer, results showed more high bacteria counts at ocean beaches following heavy rain events than has been seen in any other year since testing began. In addition to the sampling event during Jose, high bacteria levels were measured during or after it rained at Ditch Plains on 8/15, Georgica Beach Association in East Hampton on 7/24, Sagg Main Beach in Southampton on 8/28, Ponquogue Beach in Hampton Bays on 9/6, and Triton Lane in East Quogue on 7/24. These readings do not yet provide statistical evidence that ocean beaches on the East End are becoming more polluted, but it was disturbing to see any measurable amount of bacteria at our ocean beaches. The BWTF hopes that we do not see this trend repeat itself during 2018. To be safe, the [Suffolk County Department of Health Services recommends](#) to avoid swimming for 24 - 48 hours after rain has ended, or until two successive tidal cycles are complete.

Community Impact

The Eastern Long Island Surfrider Chapter and Concerned Citizens of Montauk (CCOM) started the joint water testing program in 2013 to provide more information on water quality conditions of the beaches, bays, lakes and coastal ponds throughout East Hampton. The purpose was to inform safe recreation and build awareness of water quality problems so they could be addressed. When Peconic Baykeeper came aboard in 2016, the program's impact extended across the South Fork. Looking back on the last five years, all three partners are pleased to see how BWTF results have gotten the attention of local government officials and agencies, and the number of projects motivated by BWTF results that are aimed at identifying and solving the sources of pollution at sites tested.

Surfrider partnered with the Village of East Hampton and the Ladies Village Improvement Society of East Hampton in 2017 to install a beautiful bioswale in the EH Village Green that absorbs and filters road runoff before it passes into Town Pond, Hook Pond, and eventually out into the Atlantic Ocean at Main Beach. Part of the chapter's [Ocean Friendly Gardens](#) program, the bioswale is planted with beautiful native plants that not only absorb runoff but provide native habitat as well. With such a high visibility in the community, the chapter is hoping that this garden is helping to shift people's perspectives on what is desirable in their own yards and will inspire confidence in taking a more natural, toxin-free approach to landscaping to support clean water rather than adding to local pollution problems.

In 2016, CCOM launched their [Save the Lake - Save the Pond](#) Program to engage homeowners, local businesses, commercial property owners, and East Hampton Town officials in a coordinated effort to reduce the human causes of water pollution in Montauk. This program encourages homeowners to inspect and properly maintain septic systems, stop using lawn chemicals, and reduce stormwater through vegetated buffers and rain gardens. CCOM has also teamed up with the Town of East Hampton to fund a U.S. Geological Study [source tracking study](#) that will identify the sources of pollution entering Montauk's waters so targeted, effective solutions can be implemented. Sampling for this study started in June 2018, and a final report will be released in 2019.

The Town of East Hampton has also started a number of studies and projects using, in part, monies generated through the Community Preservation Fund to improve water quality and identify sources of pollution. A huge [restoration project](#) has been underway at Pussy's Pond in Springs to restore native habitat and absorb and filter stormwater runoff for the last two years, and a permeable reactive barrier has been installed to intercept nutrients and other contaminants entering Pussy's Pond through groundwater flow. Additionally, the Town has begun investigating the underground pipes that lead to the discharge of stormwater into Georgica Pond at [Cove Hollow](#) to determine the best solution for addressing high bacteria counts measured by the Blue Water Task Force at this site. Additional efforts are being planned by the Friends of Georgica Pond Foundation to work with East Hampton Town and the New York State Department of Transportation to identify the best options for reducing the amount of stormwater, nutrients and bacteria that are entering Georgica Pond through the [Kayak Launch/Rest Area on Route 27](#). Further, Dr. Chris Gobler's lab at Stony Brook Southampton is now investigating the source of bacteria entering Georgica Pond using cutting edge DNA source tracking.

Surfrider will also continue to work with the Town of East Hampton this summer to inform the public of polluted conditions in Fresh Pond Creek in Amagansett. In Southampton, Surfrider has been sharing our results from [Little Fresh Pond](#) in North Sea to demonstrate an existing pollution problem and to urge the Town's Planning Board to require an advanced technology septic system be installed at a [new camp that is proposed in this watershed](#).

Peconic Baykeeper (PBK) has engaged local municipalities in adopting a Net Nitrogen Reduction policy by pairing septic improvement mandates with rebates for replacement of existing systems and is working directly with local septic installers to target areas of highest concern in the watershed, while providing homeowners permitting assistance. PBK's new headquarters in Hampton Bays will be the first commercial business in the Town of Southampton to receive a Community Preservation Fund grant for advanced septic upgrade and serve as an example for the local community to follow. PBK has begun working directly with local septic installers to provide creative financing of advanced septic system installations at a community level and continues to encourage local homeowner associations to contact them to convert your community to bay-friendly advanced septic treatment. Additionally, PBK has recently launched their commercial pilot aquaculture project in Great Peconic Bay, as a means to encourage in-water nutrient removal while providing local economics benefits to fledging commercial oyster farmers in the Peconics.

Stay Informed

The primary goal of the Surfrider Foundation's Blue Water Task Force program is to provide water quality information to inform safe beachgoing and aquatic recreation. Community members are encouraged to check water quality results posted online before you head to the beach. All data are available here: go.surfrider.org/BWTF. You can also visit the [Swim Guide](#) online or download Swim Guide from the app store to easily access water quality information on your iPhone or Android at the beach.

Other ways you can protect yourself and your family from getting sick at the beach include:

- Swim at ocean or bay beaches with lifeguards on duty
- Avoid swimming 24-48 hours after it rains, especially in ponds and enclosed bay and lake sites
- Keep your kids out of streams and runoff at the beach
- Do not enter the water where there are Blue-Green Algae Bloom signs posted, and do not let your dogs in the water either!
- Rinse with freshwater before you eat or leave the beach.