



Save the Sound[®]

Action for our region's environment.

Clean Water Rye: Community Forum with Save the Sound

June 30, 2021

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Save the Sound[®]

Action for our region's environment.

**Leading environmental action in the Long Island Sound region.
We fight climate change, save endangered lands, protect the Sound
and its rivers, and work with nature to restore ecosystems.**



How's the Water: Report from Save the Sound

Tracy Brown
Regional Director, Water Protection

Peter H. Linderth
Director, Water Quality



Discussion Overview

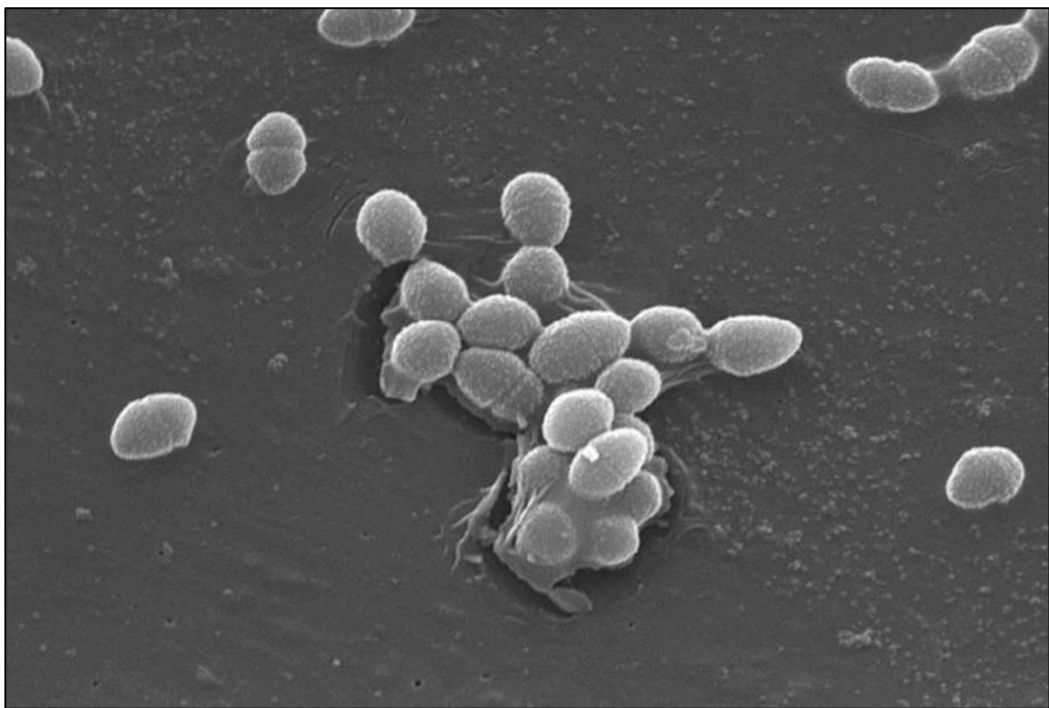
1. Fecal Bacteria (FIB) Monitoring
2. Save the Sound Reports
3. Local Sugar Kelp Project
4. Actions for Cleaner Water





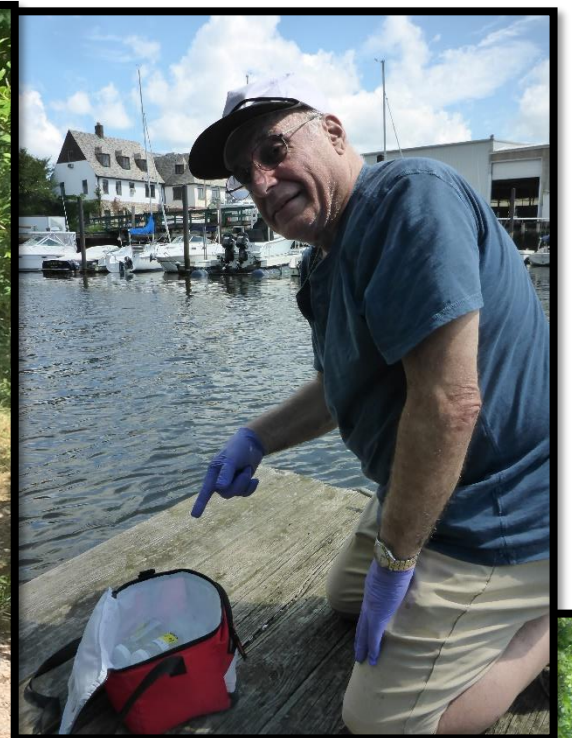
Fecal Indicator Bacteria Monitoring

- Citizen scientists & staff collect over 670 annual water samples from 63 sites
 - 5 sites in Rye, NY
- Tested for fecal indicator bacteria Enterococci or *E. coli*
- Scores based on the New York and Connecticut safe swimming criteria



http://www.wikiwand.com/pt/Enterococcus_faecalis

Indicator	Single Sample Fail	Geomean (Average) Fail
Enterococci (Marine water)	> 104 MPN/100 mL	> 35 MPN/100 mL
<i>E. Coli</i> (Freshwater)	> 235 MPN/100 mL	> 126 MPN/100 mL





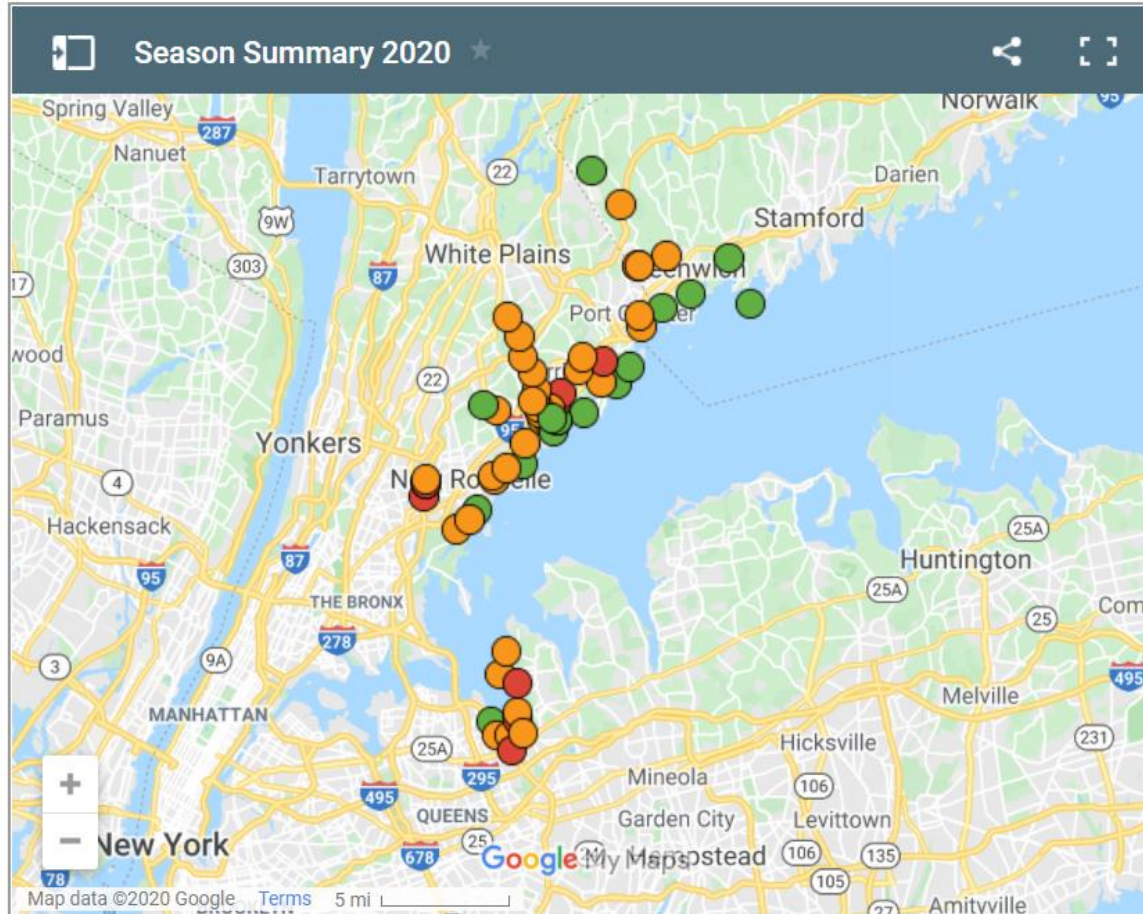
Lab Methods

EPA Approved
[IDEXX](#) Enterolert®
or Colilert® with
Quanti-Tray®/2000

Results reported
in MPN/100 mL

2020 Bacteria Monitoring Data

Select Year: 2020 • [2019](#) • [2018](#) • [2017](#) • [2016](#) • [2015](#) • [2014](#)



2020 Bacteria Monitoring Stats

61 sites, 671 water samples,
2 trained volunteers

(Covid-19 pandemic limited 2020 volunteer participation)

2020 Bacteria Sampling Data

[Weekly Monitoring Data Maps](#)

[Westchester, NY & Greenwich, CT pdf xls](#)

[Queens & Nassau Counties pdf xls](#)

[Summary by Site pdf xls](#)

[Quality Assurance Project Plan pdf](#)

Map Legend

- Passes safe swim criteria
- Fails safe swim criteria
- Fails safe swim criteria by 10X or more
- ☁ Wet weather sample*
*Wet weather = 1/2" or more of rainfall in the 72 hours prior to sample collection

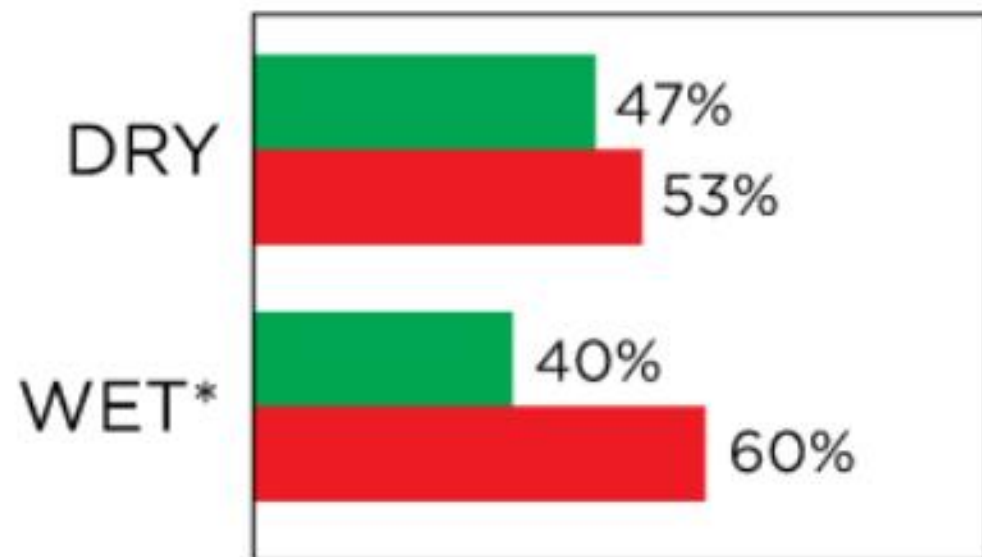
Quick Links

[Best and Worst](#)

[Summary of Findings](#)

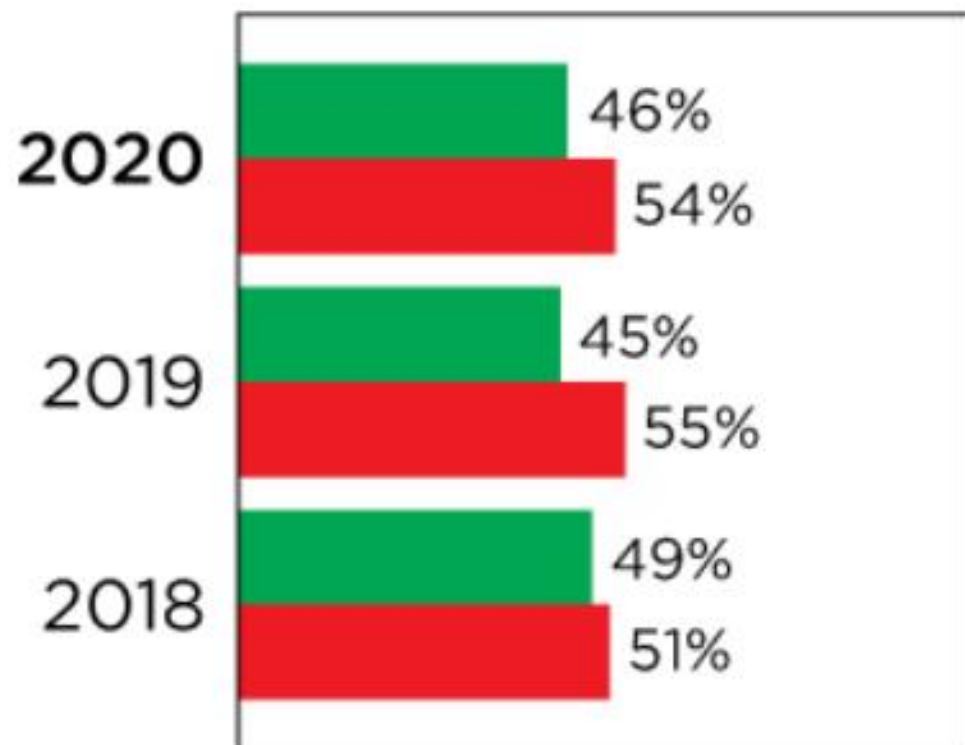
<https://www.savethesound.org/what-we-do/healthy-waters/measuring-water-quality/2020-bacterial-water-quality-data/>

2020 SAMPLES WET vs DRY:
Percent **Pass**/**Fail**

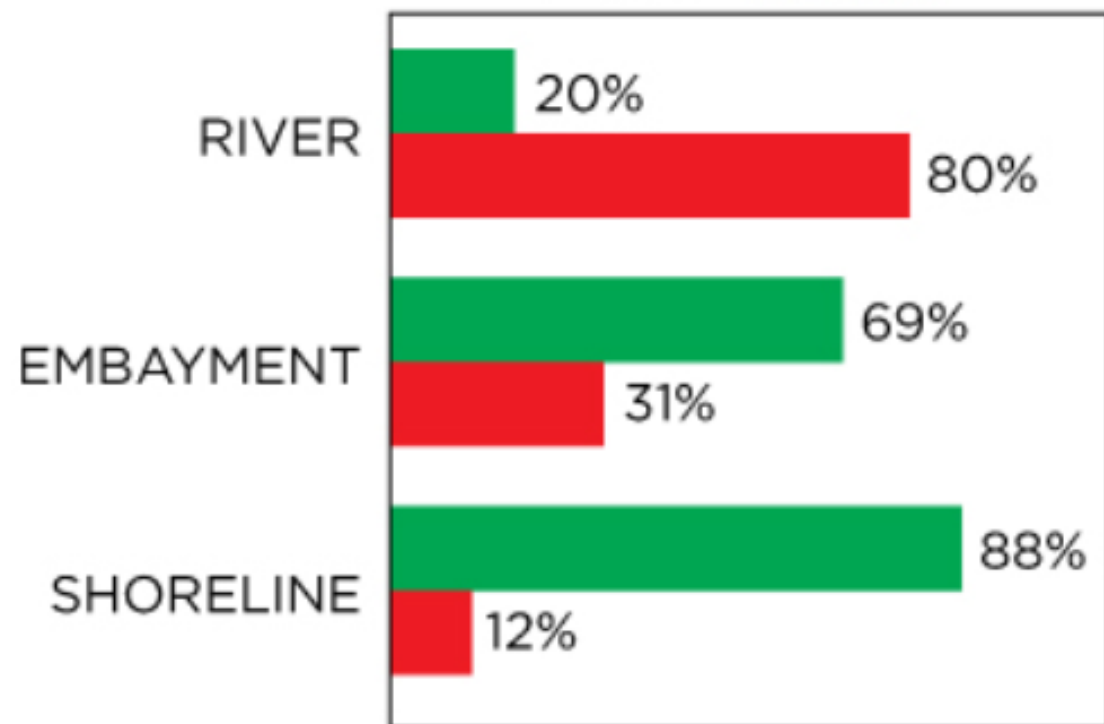


*Wet weather = 1/2" or more of rainfall in the 72 hours prior to sample collection

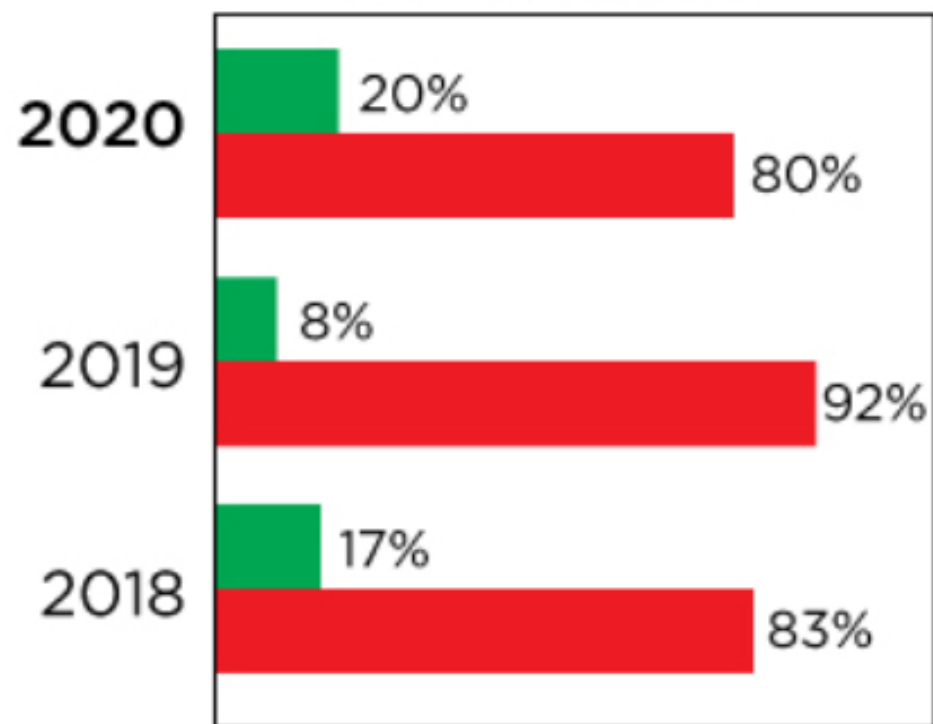
2018-2020 OVERALL SAMPLES:
Percent **Pass**/**Fail**

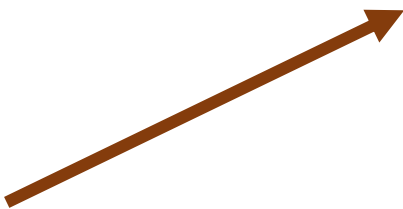
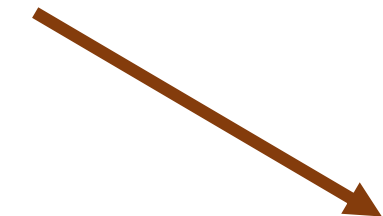


2020 WET WEATHER BY SITES:
Percent **Pass**/**Fail**



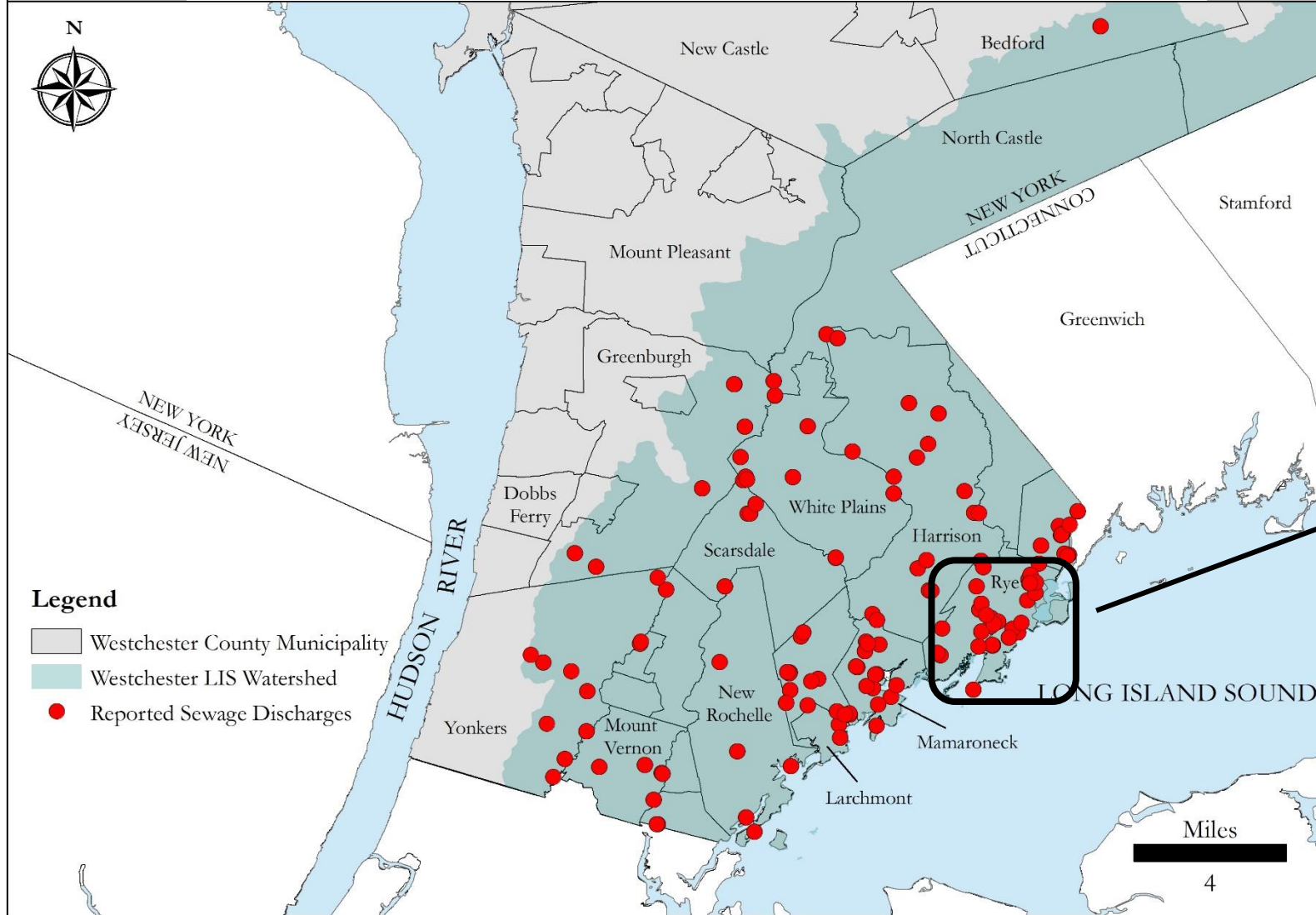
2018-2020 RIVER WET WEATHER:
Percent **Pass**/**Fail**







Reported Sewage Discharges in the Westchester County Long Island Sound Watershed 2010-2020

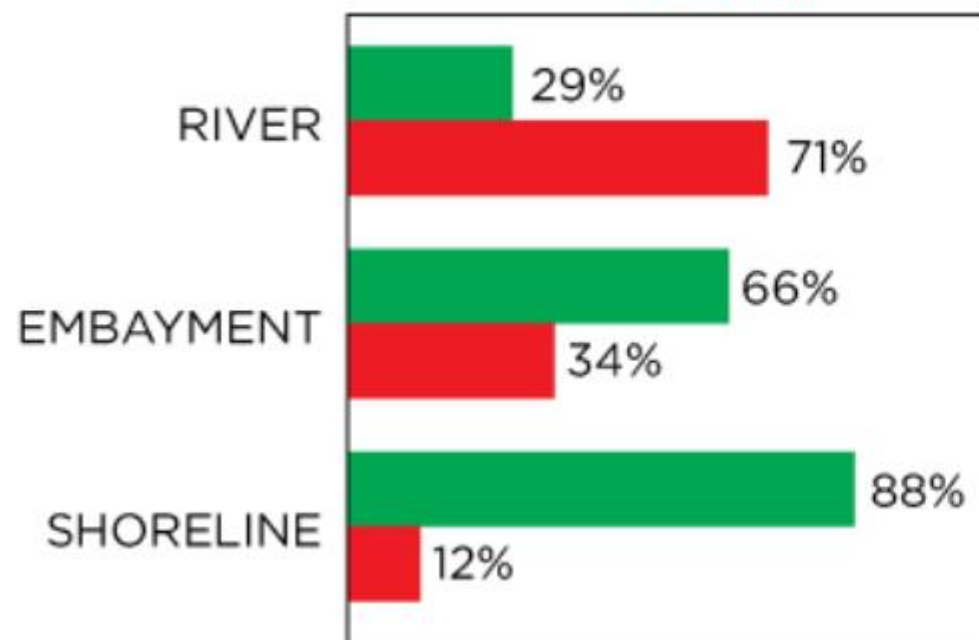


- ❖ 164 Sewage Discharges
- ❖ 37 in City of Rye

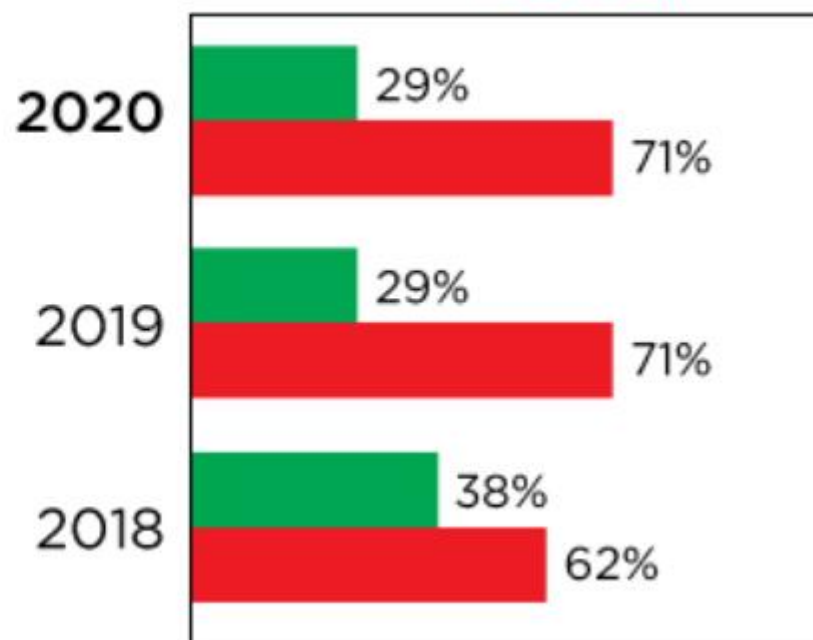


- ❖ Blind Brook, Resident Report
- ❖ Sanitary Sewer Overflow
- ❖ Westchester County DOH Rehabilitation

2020 DRY WEATHER BY SITES:
Percent **Pass**/**Fail**



2018-2020 RIVER DRY WEATHER:
Percent **Pass**/**Fail**



Sewage Exfiltration As a Source of Storm Drain Contamination during Dry Weather in Urban Watersheds

Article in Environmental Science & Technology 45(17):7151-7 · August 2011 with 32 Reads

DOI: 10.1021/es200981k · Source: PubMed



1st [Bram Sercu](#)

|| 24.79 · United Water Conservation District



2nd [Laurie C. Van De Werfhorst](#)

|| 27.52 · University of California, Santa Barbara



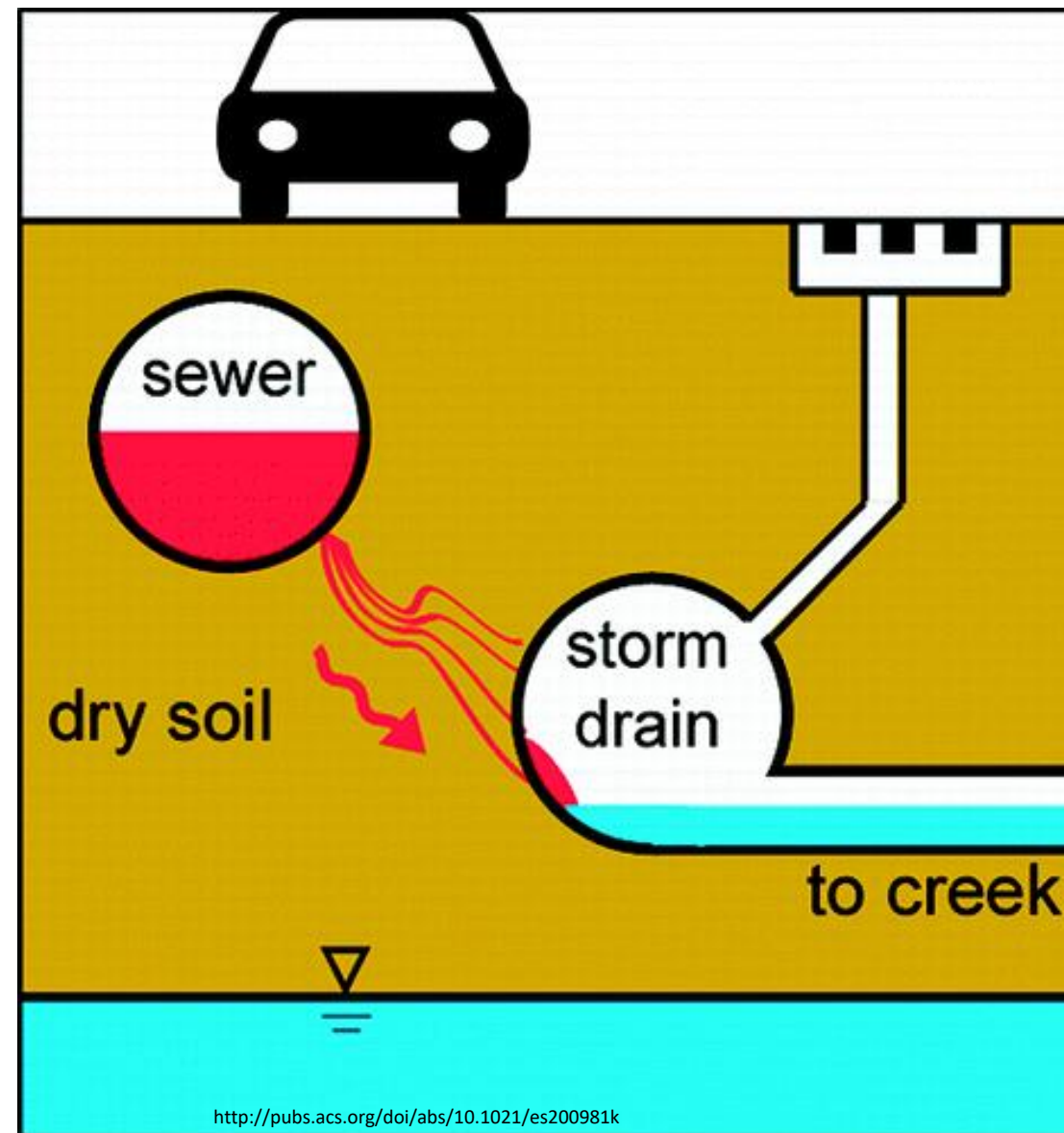
3rd [Jill Murray](#)

|| 16.62 · City of Santa Barbara



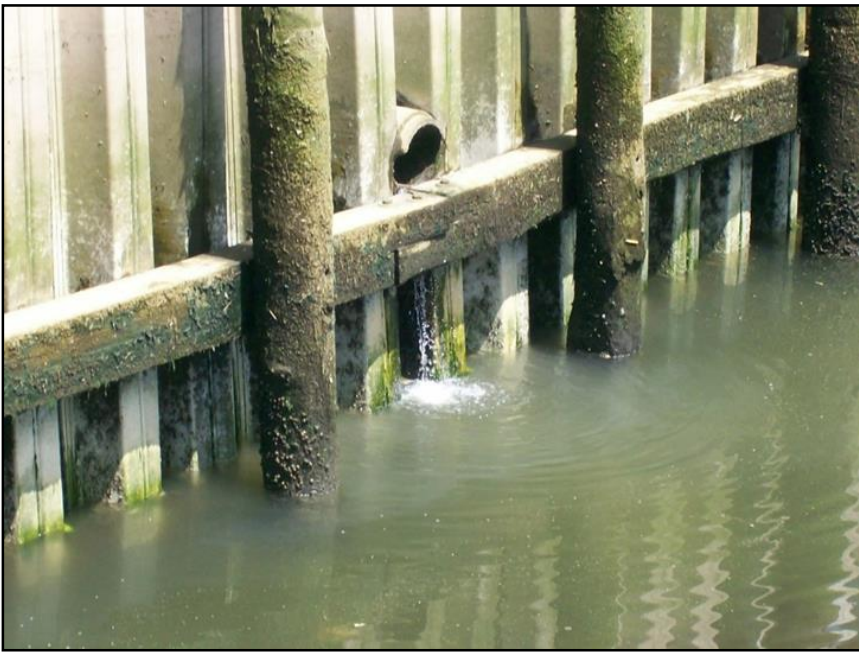
4th [Patricia A Holden](#)

|| 39.51 · University of California, Santa Barbara

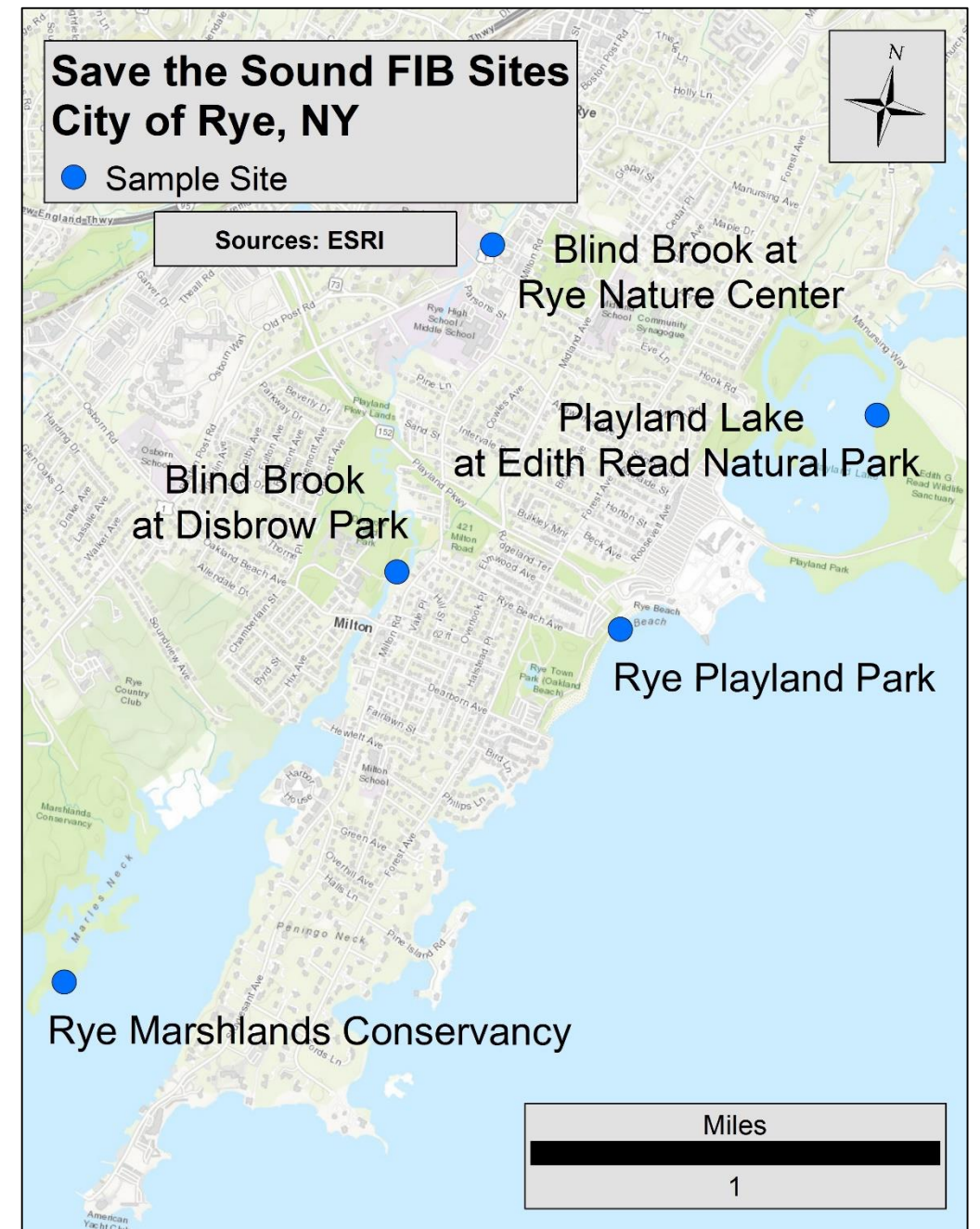
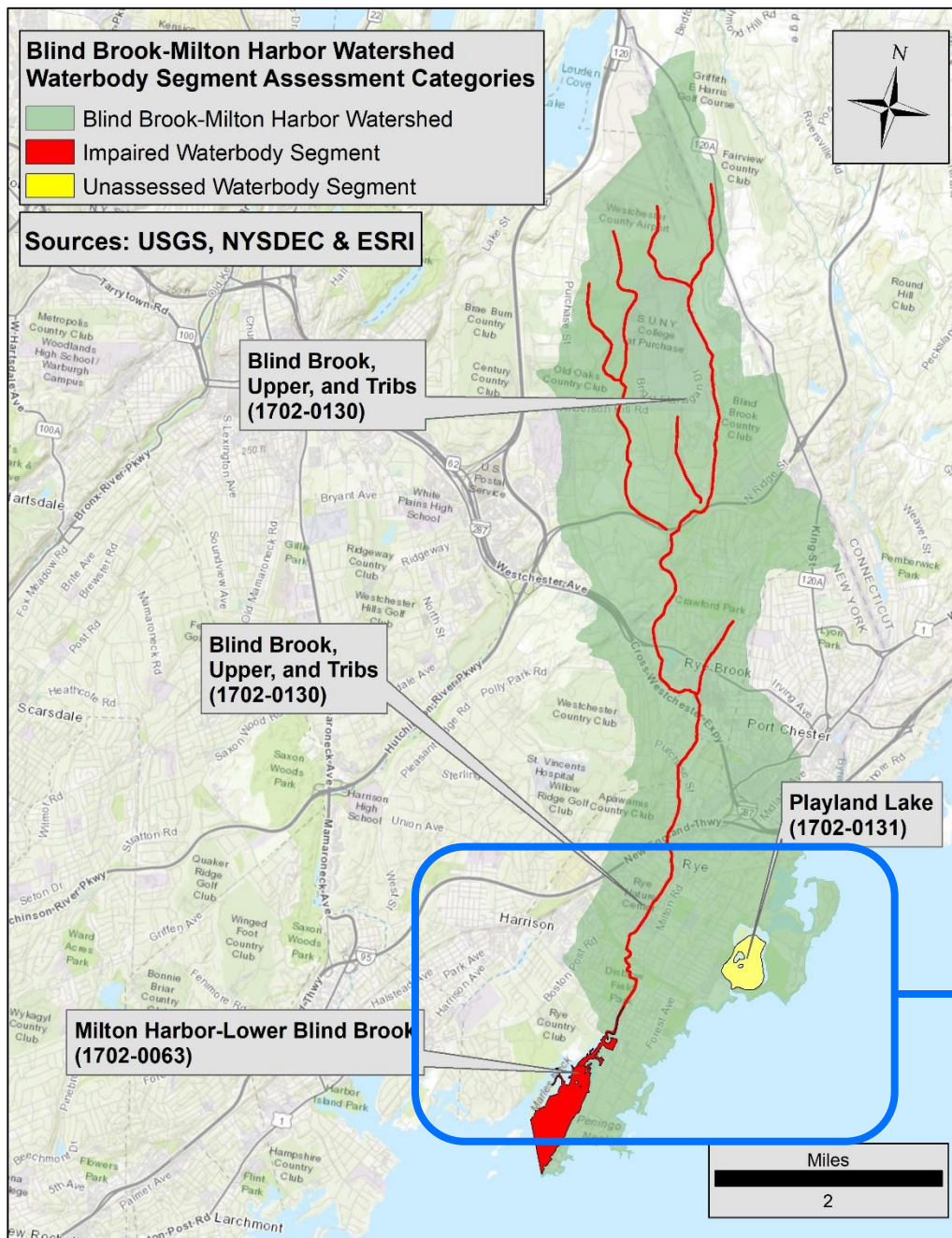




- ❖ Storm Drain to Blind Brook
- ❖ Resident Report
- ❖ Leaking Sewer Line Contaminating Storm Drain

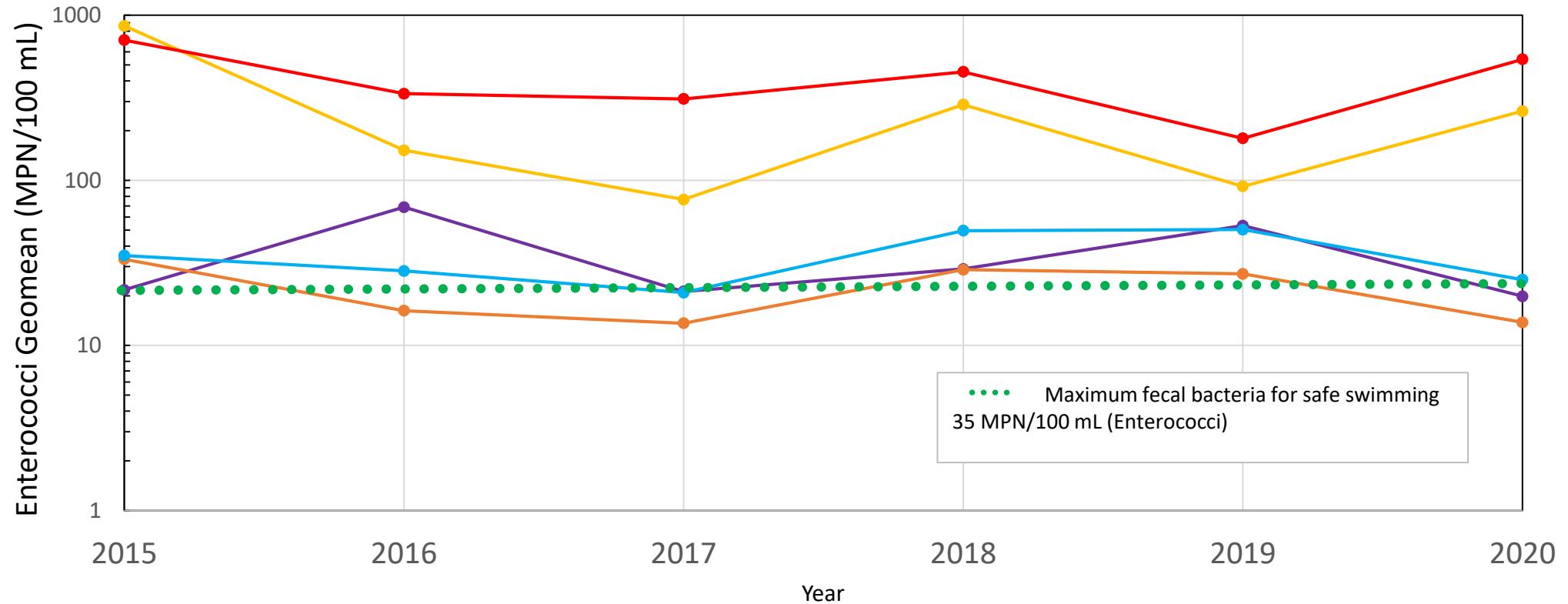


**Examples of untreated sewage
discharging from stormwater pipes**



Save the Sound FIB Sites in Rye, NY

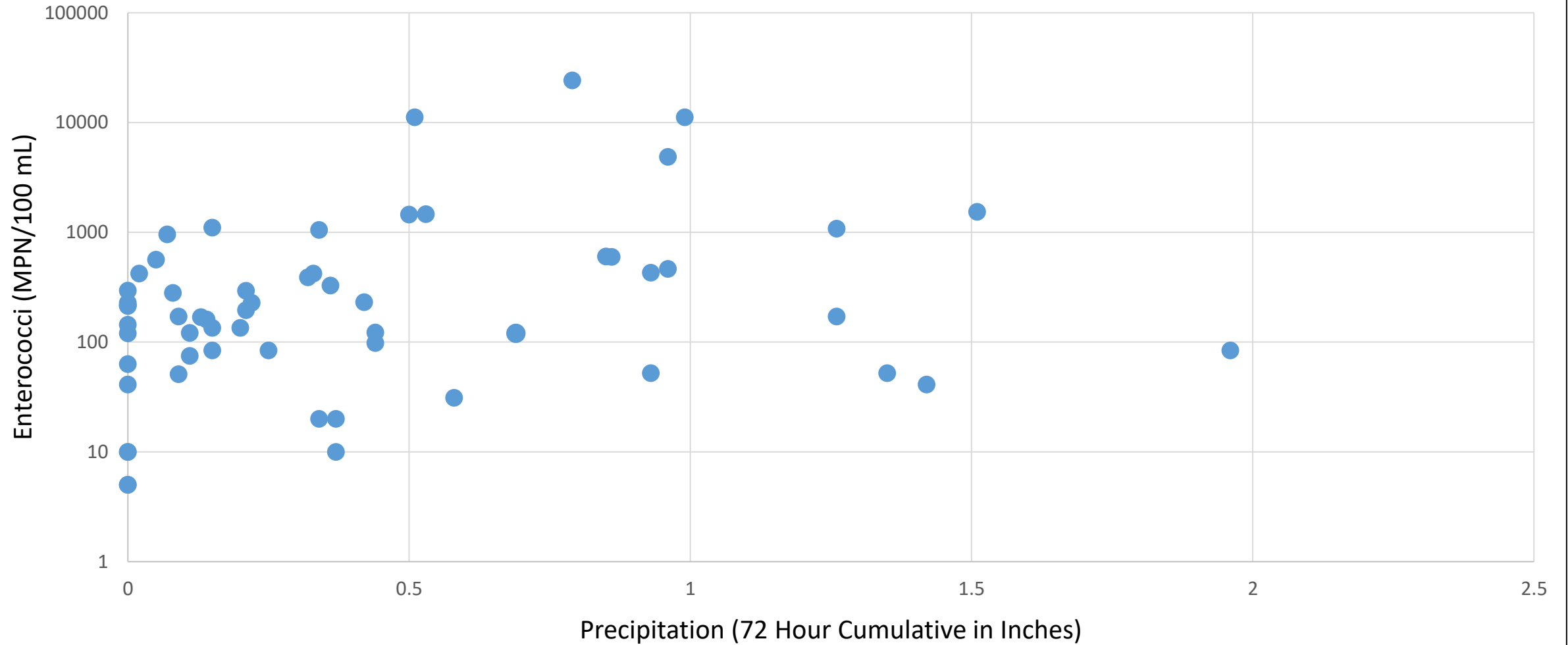
Geomean vs Year



- Rye Playland Park
- Playland Lake at Edith Read
- Blind Brook at Rye Nature Center
- Rye Marshlands Conservancy
- Blind Brook at Disbrow Park

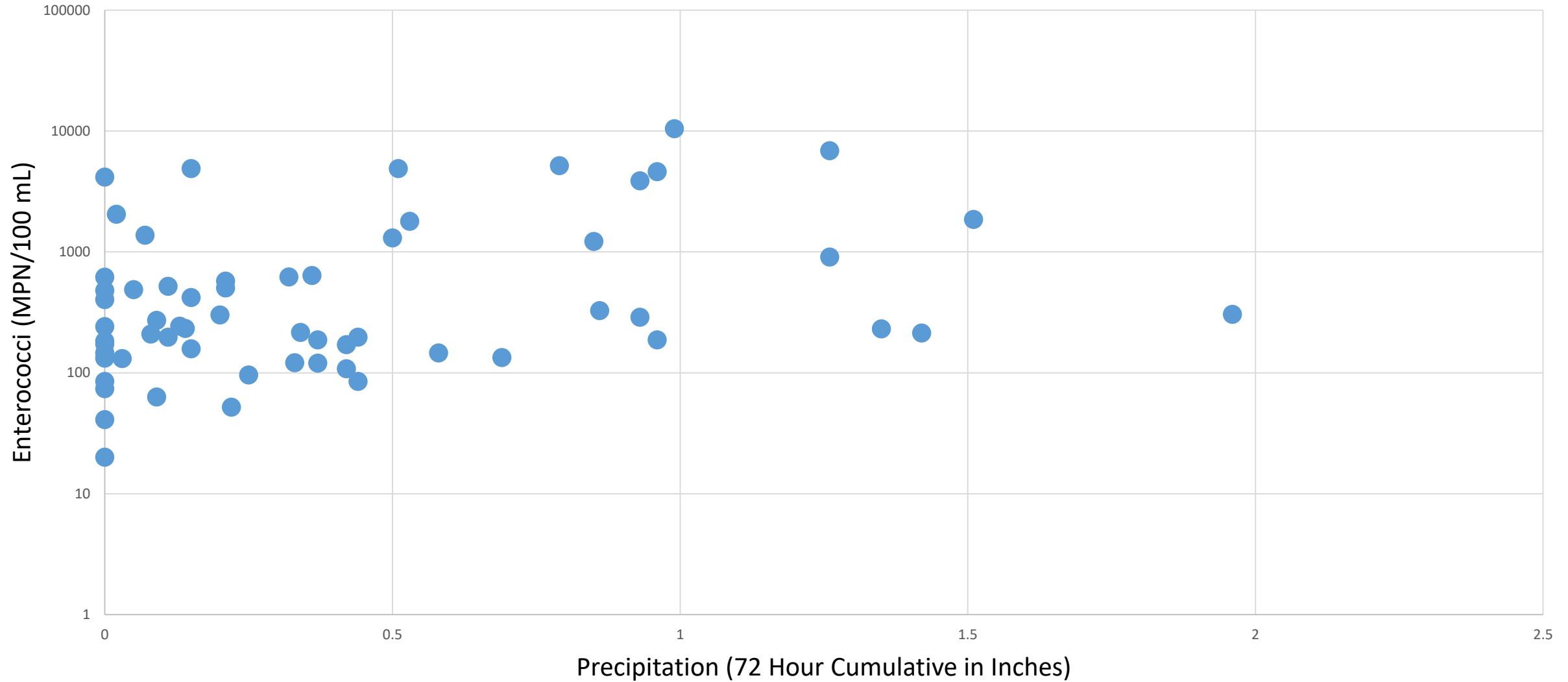
Blind Brook at Disbrow Park

Enterococci vs Precipitation (2015-2020)



Blind Brook at Rye Nature Center

Enterococci vs Precipitation

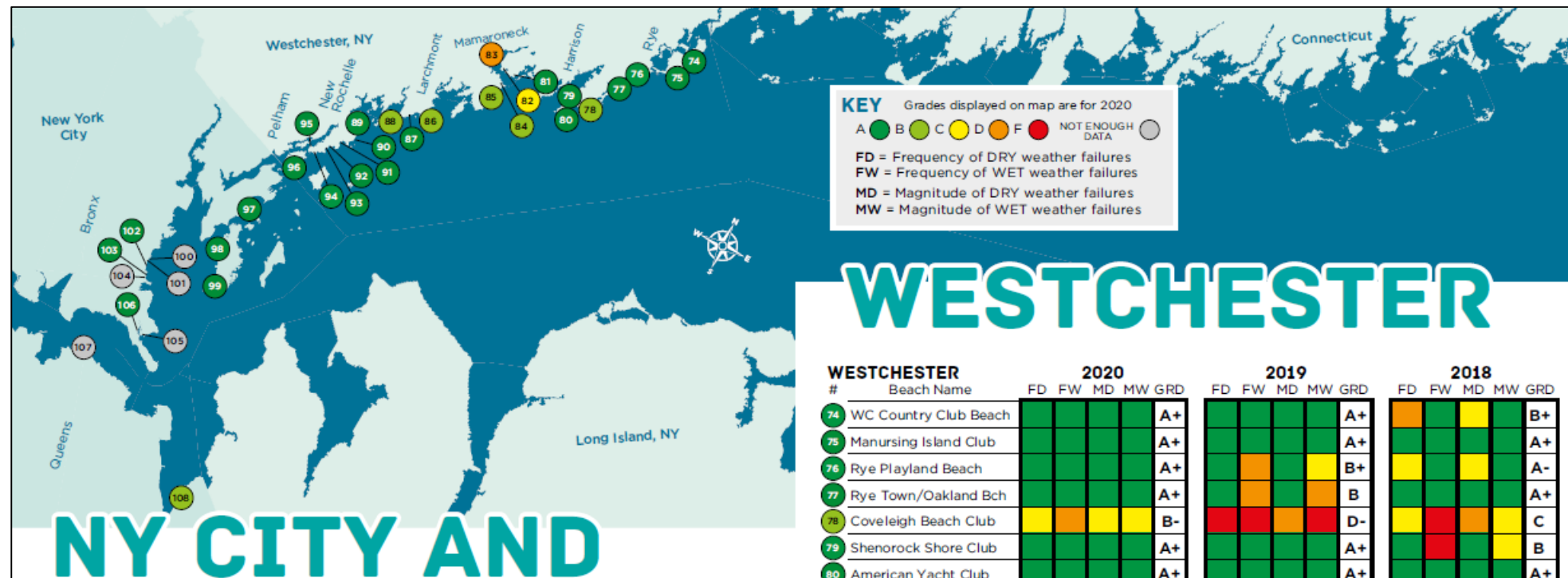




Beach Report

<https://www.savethesound.org/beach-report>





BRONX

#	Beach Name	2020					2019					2018				
		FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD
97	Orchard Beach					A-					A+					A+
98	West Fordham St Assoc.					A+					A+					A
99	Morris Yacht & Beach					A+					B+					B
100	Trinity Danish Y.P. Soc.					NA					D+					A+
101	White Cross Fish Club					NA					C					A
102	American Turners					A+					D-					A+
103	Danish Am. Beach Club					A+					C-					A+
104	Manhem Beach Club					NA					C+					A
105	Locust Point Yacht Club					NA					B+					A+
106	Schuyler Hill Civ. Assoc.					A+					D					A+

QUEENS

#	Beach Name	2020					2019					2018				
		FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD
107	Whitestone Booster					NA					C					A
108	Douglas Mnr Assoc, Bch					B					D-					D+

WESTCHESTER

#	Beach Name	2020					2019					2018				
		FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD	FD	FW	MD	MW	GRD
74	WC Country Club Beach					A+					A+					B+
75	Manursing Island Club					A+					A+					A+
76	Rye Playland Beach					A+					B+					A-
77	Rye Town/Oakland Bch					A+					B					A+
78	Coveleigh Beach Club					B-					D-					C
79	Shenorock Shore Club					A+					A+					B
80	American Yacht Club					A+					A+					A+
81	MMNK Beach & Cabana					A-					C+					C+
82	Shore Acres Club					C+					A+					A+
83	Harbor Island Beach					D+					D					C-
84	Beach Point Club					B					C+					C+
85	Orienta Beach Club					B+					C-					B-
86	Larchmont Manor Park					B+					B+					A+
87	Larchmont Shore Club					A-					A+					A+
88	Echo Bay Yacht Club					B					A+					A-
89	Hudson Park					A					C-					D
90	New Roch. Rowing Club					A+					A+					A+
91	Surf Club					A-					F					B+
92	Davenport Club					A+					D+					A+
93	Greentree Club					A+					C-					A+
94	VIP Club					A+					B-					A-
95	Beckwithe Pointe					A+					A+					A-
96	Glen Island Park					A+					B+					B+



Long Island Sound Report Card

Long Island Sound Report Card 2016

Grading the water quality and ecosystem health of the Urban Sea



Save the Sound®

Long Island Sound Report Card 2018

Grading the water quality and ecosystem health of the Urban Sea



Save the Sound®

LONG ISLAND SOUND REPORT CARD 2020

Execution Rocks Lighthouse, in Long Island Sound between
New Rochelle Harbor and Sands Point, New York



Save the Sound®
Action for our region's environment.

Western Narrows

Received an F (44%), similar to 2017 (45%), with a "variable" 12-year trend. Chlorophyll *a* and water clarity grades are declining while DOC is improving. Efforts have reduced nitrogen load to this region; however, our changing climate, population, and development are continuing challenges.



Eastern Narrows

Received a C (74%), a decrease from 2017 (82%), primarily due to worsening chlorophyll *a*. Fluctuating weather conditions likely caused the 12-year trend shift from "improving" to "variable." Vigilance is needed to ensure the gains here aren't lost to unchecked development and climate change.



Western Basin

Received a B (86%), a slight decrease from 2017 (92%), primarily due to worsening chlorophyll *a*. Similar to E. Narrows, changing weather conditions likely caused the 12-year trend shift from "improving" to "variable." This area is less developed than the Narrows but is still densely populated.



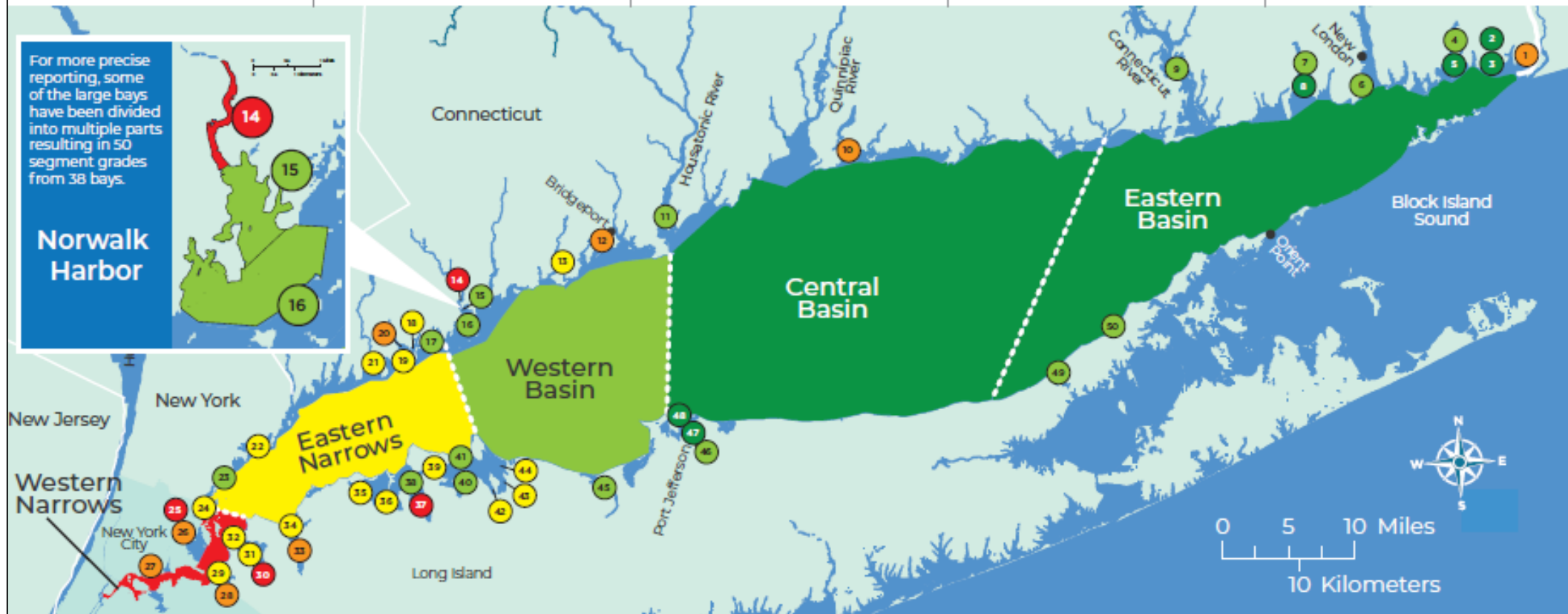
Central Basin

Received an A (95%), similar to 2017 (96%). Water quality has been stable over the past 12 years and is consistently supportive of marine life. It is the largest area of open water contained in the Report Card and is well-flushed with water from the Atlantic Ocean.



Eastern Basin

Received an A+ (99%), similar to 2017 (100%). Water quality has been stable over the past 12 years, never dropping below an A. This region has a much lower coastal population with large tracts of undeveloped land. Being adjacent to the ocean, it has strong tidal exchange.



For more precise reporting, some of the large bays have been divided into multiple parts resulting in 50 segment grades from 38 bays.

Norwalk Harbor

How Are The Scores Calculated?

Save the Sound and its Science Advisors grade water quality indicators using scientifically derived scales developed with a Technical Advisory Committee of scientists and water managers from agencies around the Sound. Some indicators are used for both the Sound and the bays while others are unique to the deeper Sound or the shallower bays, reflecting the differences in these types of systems. For more information on the scoring methods, visit: www.soundhealthexplorer.org/fishable/

KEY

2019 Season Grades

A	(90-100%)
B	(80-90%)
C	(70-80%)
D	(60-70%)
F	(0-60%)

12 Year Trend

↗	Improving
→	Stable
↘	Variable
↙	Declining

Why Are Bays Different?

Our bays differ from the deeper waters of the Sound and from each other. Their shapes, sizes, and depths; the rivers that feed them; and their coastal population and land use practices all impact their water quality. They are shallower areas where light often reaches the bottom, allowing nuisance seaweed to flourish when nitrogen from their streams and rivers is high. Water moves through each of them differently, with some very open to and influenced by the deeper Sound waters and others less so.



Sound Health Explorer



SWIMMABLE



FISHABLE



LIVABLE

EXPLORE

ABOUT

TAKE ACTION

DONATE

Download your copy of the NEW 2020 Long Island Sound Report Card



Fishable

Can I catch a fish?
Discover how healthy
your waterways are.

FIND MY WATERBODY

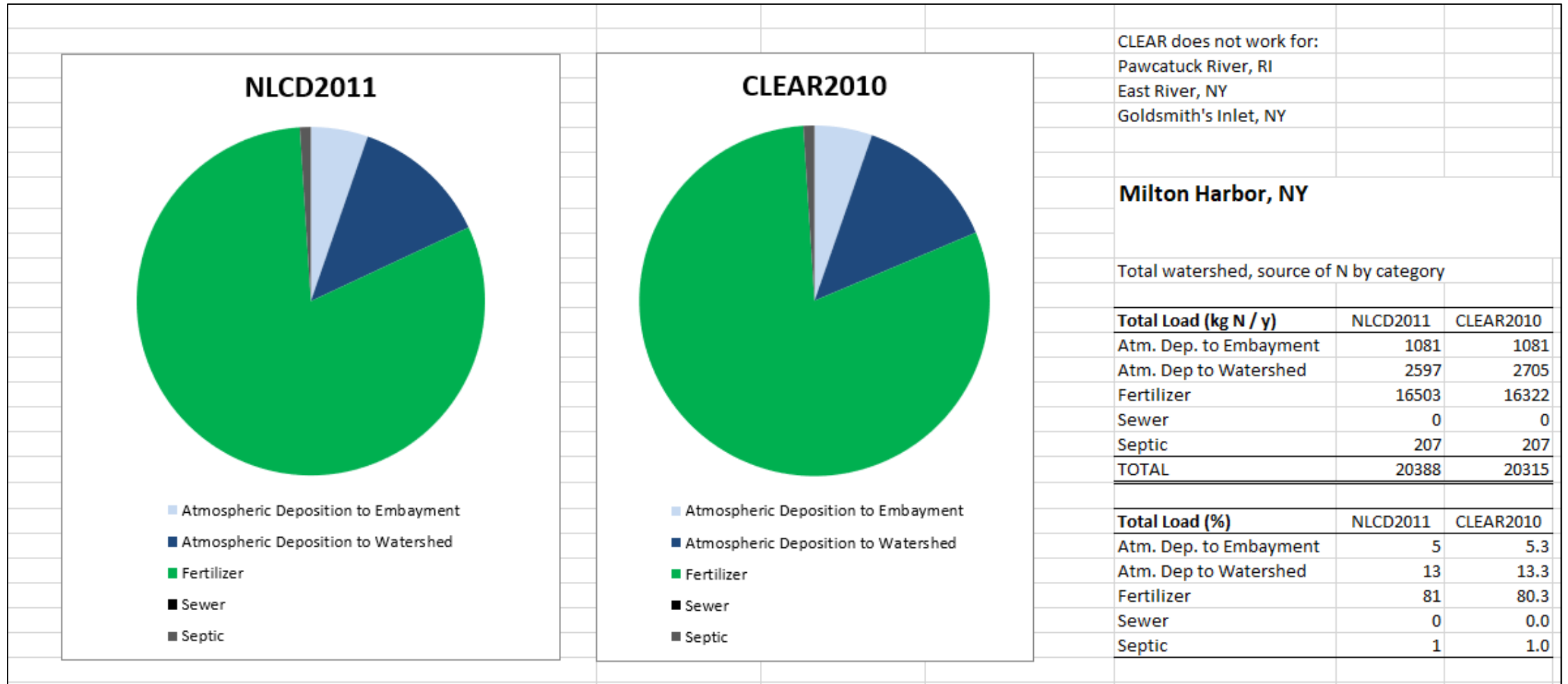
FOR A PERSONALIZED EXPERIENCE

SHARE LOCATION

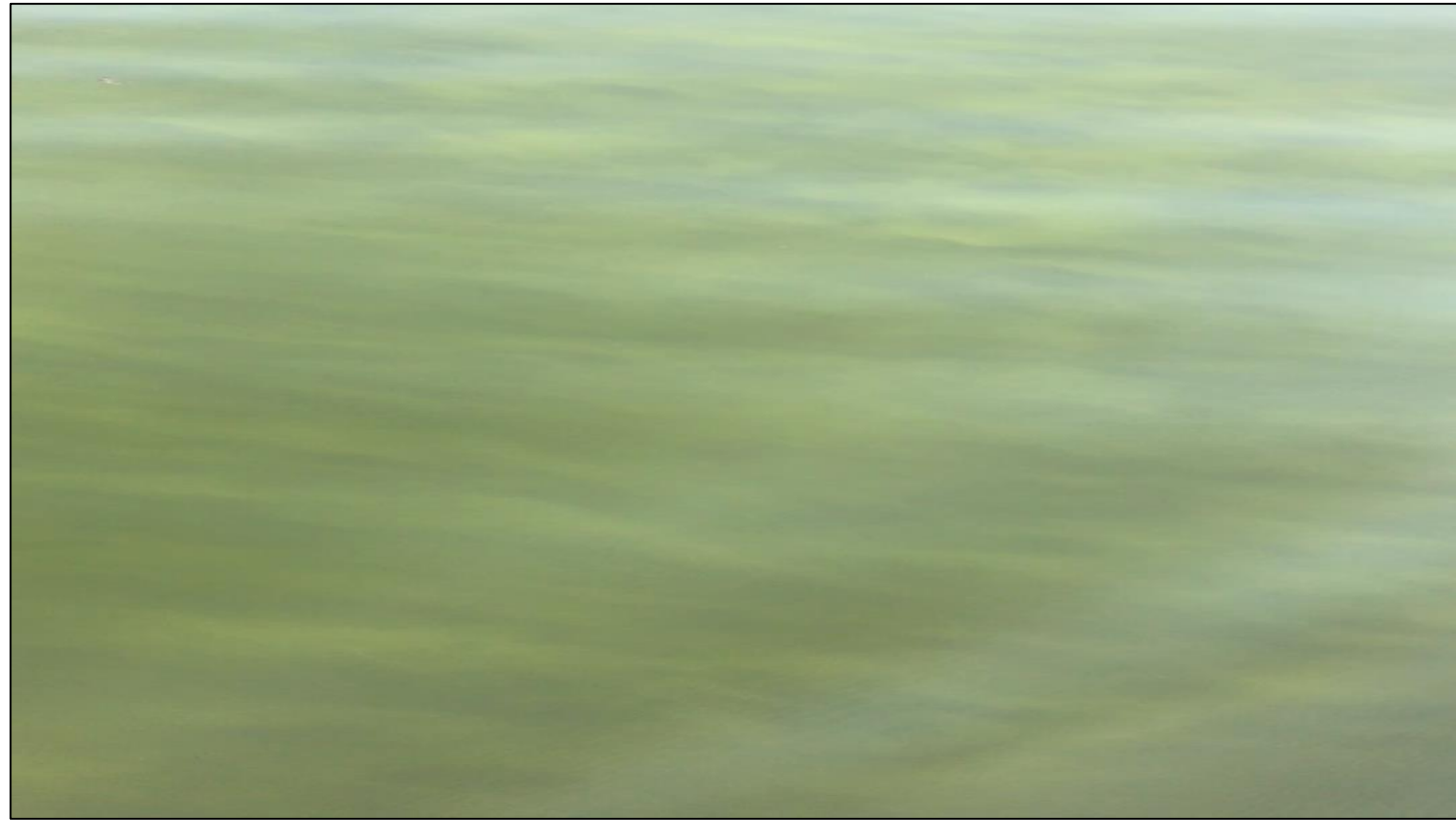
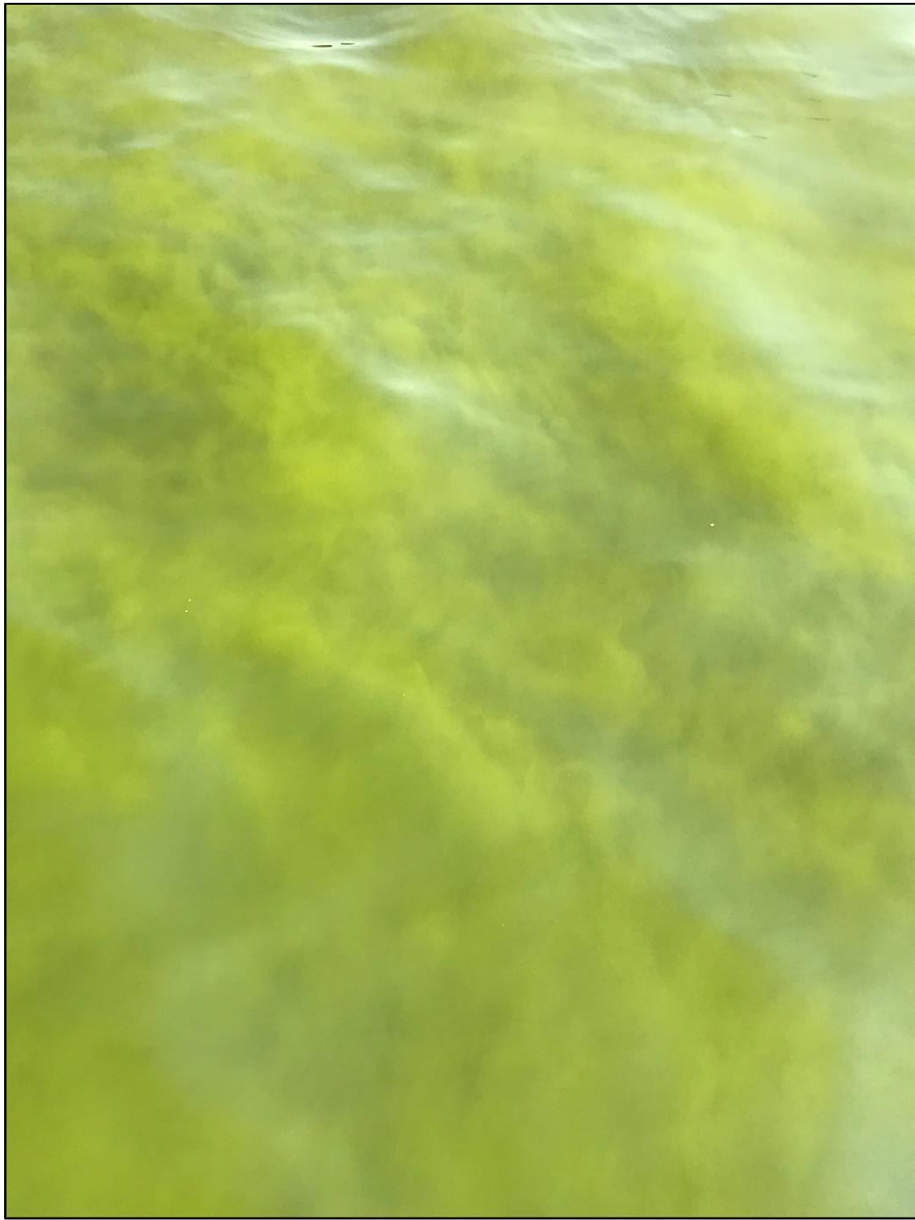
<https://soundhealthexplorer.org/>



Sound Health Explorer and N Loading Model



Vaudrey, J. M., Yarish, C., Kim, J. K., Pickerell, C., Brousseau, L., Eddings, J., & Sautkulis, M. (2016). Comparative analysis and model development for determining the susceptibility to eutrophication of Long Island Sound embayments. *Connecticut Sea Grant Final Project Report*, 38.



Harmful Algae Bloom in Milton Harbor



NYSDEC Sugar Kelp Pilot Project

- ❖ Nutrient bioextraction study but also pollutants (trace metals and pathogens)
- ❖ Measure value of harvested sugar kelp as a growth supplement in agricultural products



<https://longislandsoundstudy.net/nutrient-bioextraction-overview-development/>



<https://longislandwins.com/>



Save the Sound Involvement

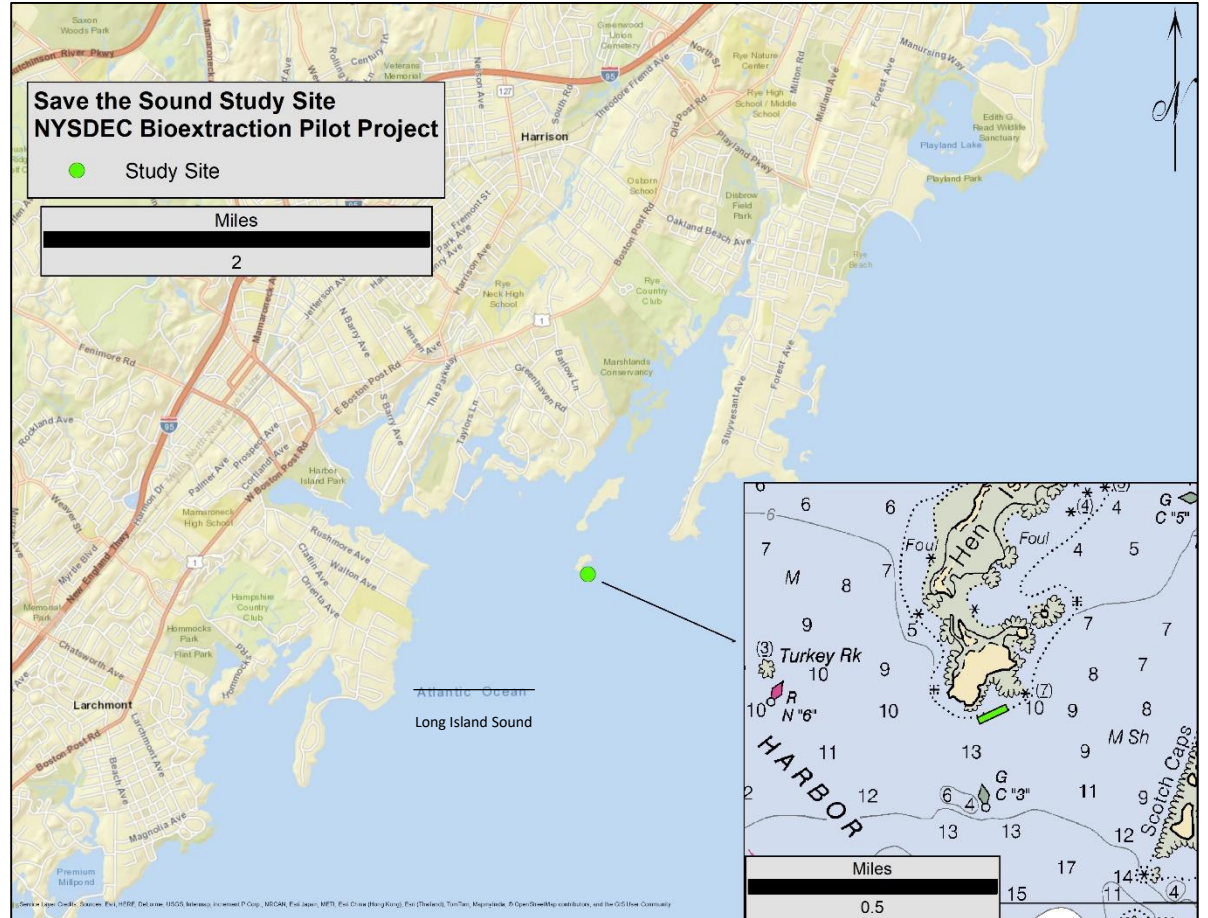
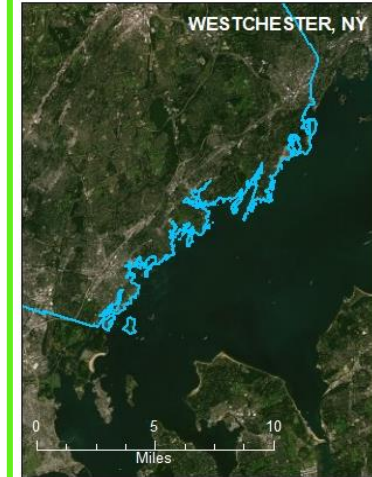
PROPOSED PROJECT LOCATIONS

1. Village of Northport, Town of Huntington, NY
2. Throgs Neck, Bronx County, NY
3. Westchester County, NY

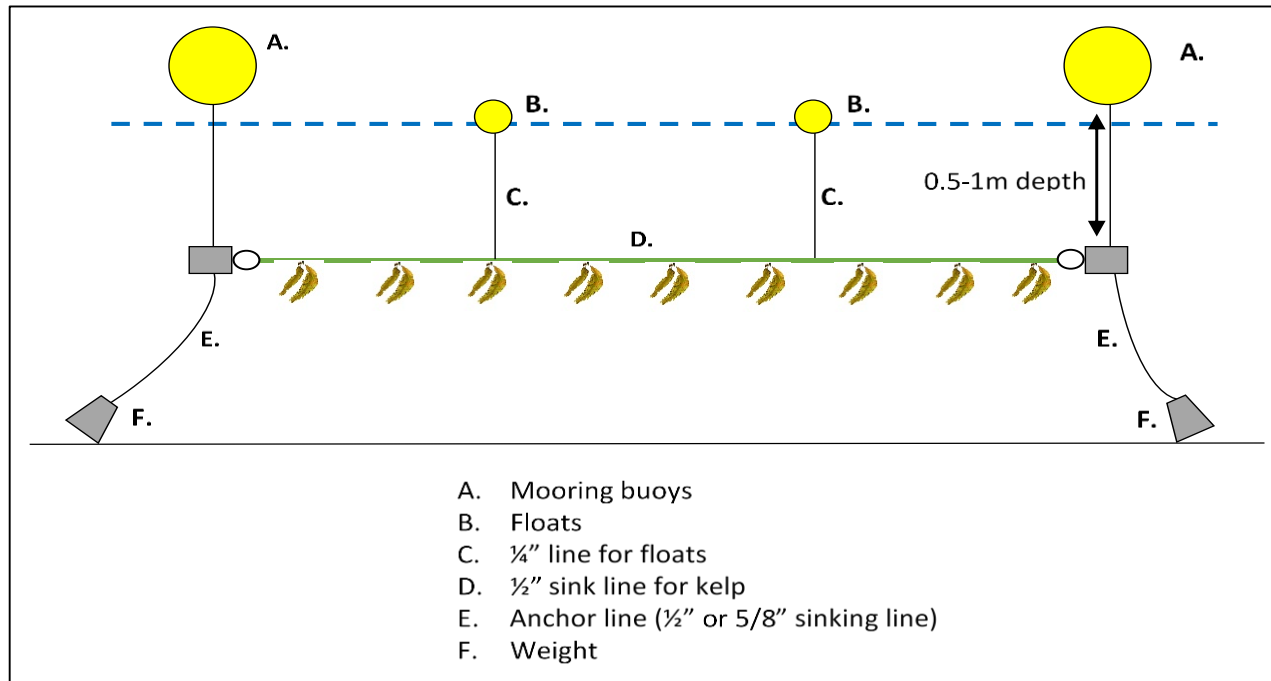
NY Shellfish Closures

STATUS

- Closed
- Holiday
- Seasonal



- ❖ Underwater land access through Kuder Island Colony, Inc. (Hen Island)
- ❖ Local contractor (Harbor Marine, Inc.) - mooring/buoy placement and boat trips
- ❖ Permitting involved ACOE, NYS Parks, City of Rye PD Marine Division, Rye Boat Basin





Actions for Cleaner Water

- ❖ Conserve water
- ❖ Repair private sewer lines & maintain septic systems
- ❖ Pickup pet waste and put in the trash
- ❖ Eliminate or reduce fertilizer usage
- ❖ Reduce runoff with rain gardens and rain barrels (<https://www.reducerunoff.org/>)
- ❖ Report pollution to local municipality and Save the Sound (pollution@savethesound.org)



<https://www.nateshivar.com/6784/rain-barrel-review/>



https://longislandsoundstudy.net/wp-content/uploads/2010/03/liss_runoff.pdf



Actions for Cleaner Water

- ❖ Enforce/implement local ordinances that reduce pollution to the Sound
- ❖ Illicit discharge detection and elimination efforts in bacteria hotspots identified with Save the Sound and other data sources
- ❖ Proactively maintain sanitary sewage infrastructure
- ❖ Large-scale municipal green infrastructure projects to infiltrate stormwater



<https://www.cityofferedale.org/public-works-department/sanitary-sewer-smoke-testing/>



<https://longislandsoundstudy.net/our-vision-and-plan/clean-waters-and-healthy-watersheds/long-island-sound-watershed-projects/>



Water Quality Q&A