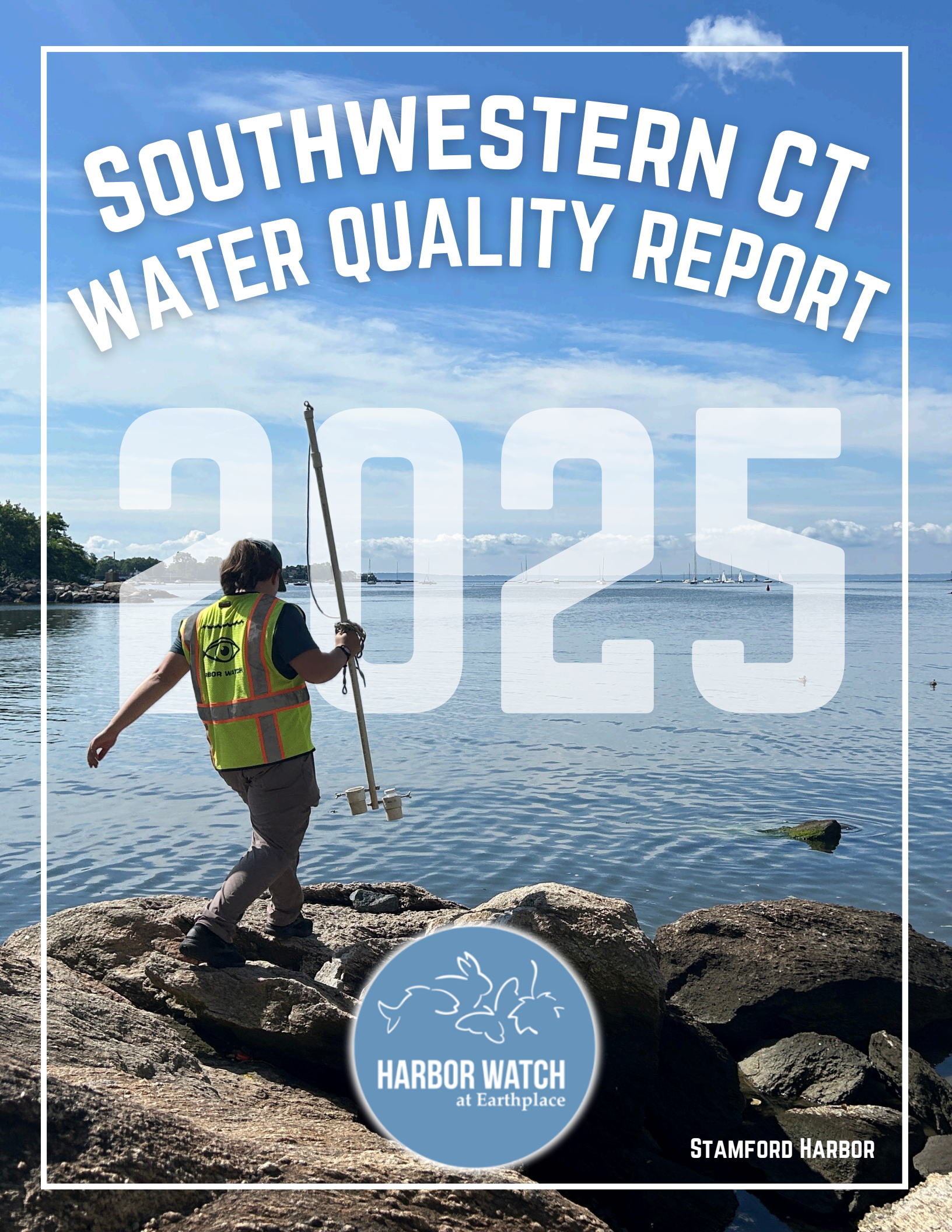
SOUTHWESTERN CT WATER QUALITY REPORT

2025



HARBOR WATCH
at Earthplace

STAMFORD HARBOR

Contents

About Harbor Watch

The mission of Harbor Watch is to improve water quality and ecosystem health in Connecticut.

Each day we strive to reach this goal through research in the lab and field, collaboration with our municipal partners, and education of students and the public. Harbor Watch addresses pollution threats to Long Island Sound and educates the next generation of scientists through hands-on research and experiential learning. As part of the larger organization of Earthplace, the work performed by Harbor Watch also supports the mission of Earthplace to blend science, conservation, and education into pathways for learning about nature and the environment with access for all.

Since its inception, Harbor Watch monitored hundreds of sites for a variety of physical and biological parameters and has trained over 1,000 high school students, college interns, and adult volunteers in the work of protecting and improving the biological integrity of Long Island Sound.

Visit www.harborwatch.org for more information!

This report includes data on:
Ash Creek Watershed (Ash Creek, Rooster River, Londons Brook, Horse Tavern Brook), Bruce Brook, Fivemile River, Milford Harbor (Milford Harbor, Gulf Pond), New Creek, Noroton River, Norwalk River Watershed (Norwalk Harbor, Norwalk River, Ridgefield Brook), Pequonnock River Watershed (Pequonnock River, Island Brook), Rippowam River Watershed (Stamford Harbor, Rippowam River), and Sasco Brook Watershed (Sasco Brook, Great Brook).

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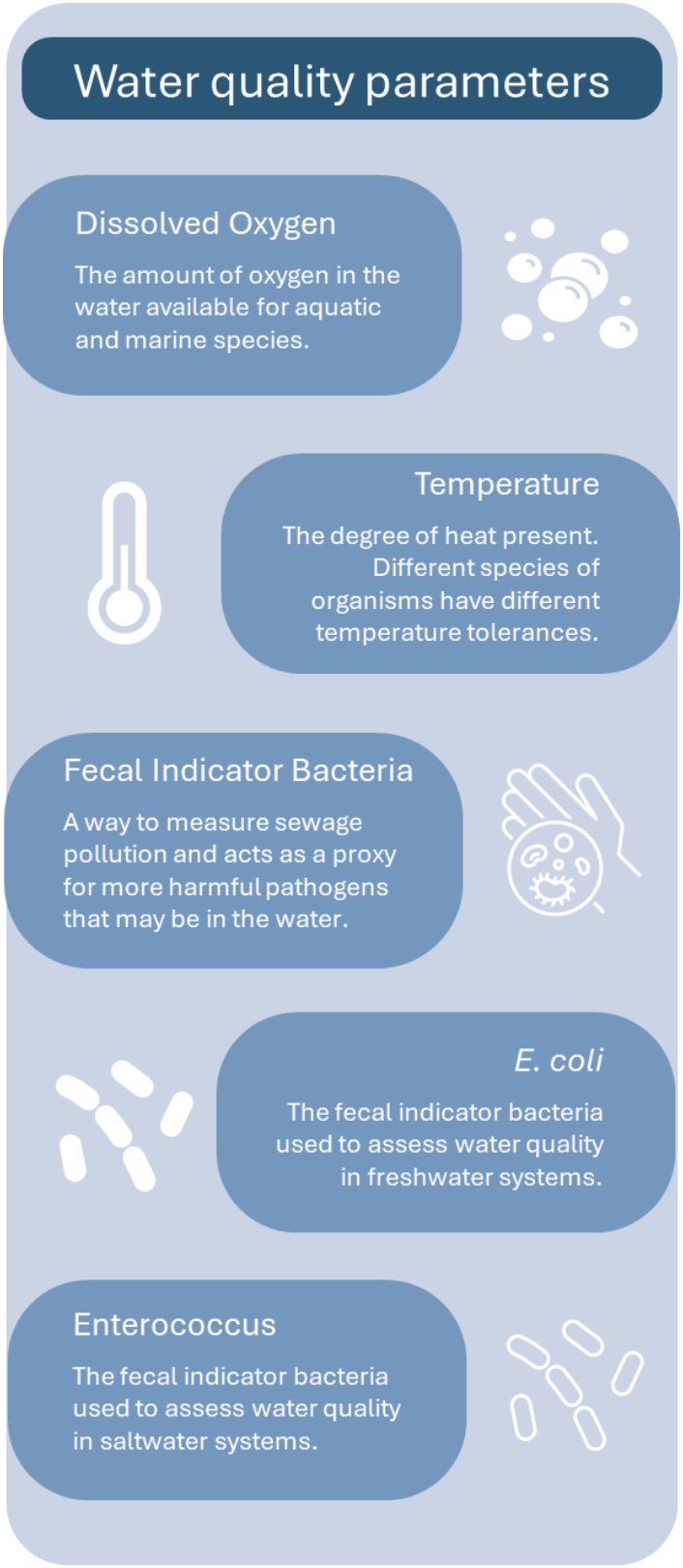
Introduction

Harbor Watch is a water quality research and education program based out of Earthplace in Westport, CT. Our mission is to improve water quality and ecosystem health in Connecticut.

Harbor Watch began conducting instream monitoring of local rivers and embayments in 1990. To bolster the quality of data being collected, Harbor Watch created standard operating procedures, EPA and State approved quality assurance project plans, and eventually built a state-certified laboratory at Earthplace. Over the years, the range of monitoring locations grew from watersheds local to Earthplace such as Sasco Brook, Saugatuck River, and Norwalk River to watersheds across the southwest corner of Connecticut spanning from Greenwich to Newtown to Milford. In 2022, Harbor Watch began partnering with the Interstate Environmental Commission and CT DEEP to establish a coordinated Pathogen Monitoring Network aimed at developing a pathway for state and local partners to identify data gaps and prioritize areas where new data should be collected around Long Island Sound and connecting that to monitoring groups who can do the boots-on-the-ground work. The network functions under an EPA approved quality assurance project plan and provides monitoring groups with field equipment and laboratory support to collect high quality data.

In this report we present data collected from May through September 2025 in 19 waterways (four of which were supported by the Pathogen Monitoring Network). The parameters monitored include dissolved oxygen, temperature, conductivity (not analyzed), and fecal indicator bacteria.



Methods Summary

Each river was visited approximately twice per month from May through September for a goal of ten sampling days per river. Sites were selected based on access and representativeness of the river, with effort made to space sites evenly throughout the length of the river being studied. Monitoring was carried out under a Quality Assurance Project Plan approved by CT DEEP in March 2025 (QA Tracking #25001) and the Pathogen Monitoring Network Quality Assurance Project Plan (QA Tracking #23091) addendum approved in May 2025.

Monitoring teams left Earthplace in Westport, CT in the morning to begin sampling and would return within 2-4 hours. Each team was comprised of fully trained Harbor Watch staff or student interns, sometimes accompanied by volunteers. At each site, a water sample was collected and kept on ice.

Water temperature, dissolved oxygen, and conductivity were measured at each site using a YSI Pro2030 meter.

Upon returning to the Harbor Watch laboratory, the water samples were analyzed for total coliform and *E. coli* and/or enterococci using enzyme substrate methods set forth in Standard Methods (SM9223B). Indicator bacteria concentrations were evaluated using the criteria published in the CT DEEP Surface Water Quality Standards on 10/10/13 (Table 1). The monitoring conducted here is for general understanding of waterway health, therefore the "all other recreational uses" criteria will apply for analyses in this report. For additional information on methodology, please refer to the approved QAPP. A summary of deviations from the QAPP can be found on page 55 of this report.

Table 1. CT DEEP criteria for *E. coli* and enterococci levels as applied to recreational use, effective 10/10/13. Highlighted cells represent criteria used by Harbor Watch in this report.

Designated Use	Indicator	Criteria
Designated Swimming	*E. coli*	Geomean less than 126/100 mL Single Sample Maximum 235/100 mL
Non-designated Swimming	*E. coli*	Geomean less than 126/100 mL Single Sample Maximum 410/100 mL
All Other Recreational Uses	*E. coli*	Geomean less than 126/100 mL Single Sample Maximum 576/100 mL
Designated Swimming	Enterococci	Geomean less than 35/100 mL Single Sample Maximum 104/100 mL
All Other Recreational Uses	Enterococci	Geomean less than 35/100 mL Single Sample Maximum 500/100 mL

Results and Discussion

From May through September 2025, **19 waterways** (categorized into 10 watersheds) were monitored by Harbor Watch across **12 towns** in Southwestern Connecticut (Table 2). One hundred and eight unique sampling locations were evaluated a minimum of eight times each (unless otherwise stated in each section). Many of these rivers did not meet the state criteria for acceptable bacteria concentrations and are likely acting as conduits for sewage pollution to Long Island Sound.

The 2025 season experienced a shift in weather patterns that impacted local water quality. In May, there were more frequent and larger precipitation events compared to 2024 (Figure 1). This resulted in more runoff entering our waterways and higher than typical bacteria concentrations at the start of the monitoring season. This was followed by drier conditions from June through September, mixed with extreme heat; as a result, we observed low dissolved oxygen levels and waterways drying up. The few times it did rain, short, high intensity storms dumped water on very dry ground, preventing it from penetrating the soil, directly washing all the pollutants into our waterways unfiltered (Pease, 2020).

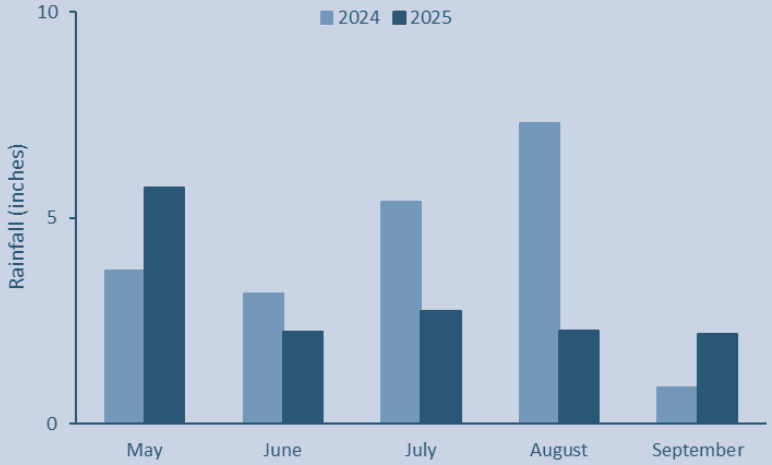


Figure 1. Total rainfall from May through September in 2024 (light blue) and 2025 (dark blue) (Norwalk Health Department)

Milford Harbor and Norwalk Harbor tied for fewest exceedances of the single sample maximum

Indicator bacteria: In years prior, our big-picture analysis focused on the indicator bacteria geometric mean of each sampling location, the preferred criteria by CT DEEP. Unfortunately, this year presented us with an increased number of sites with sampling constraints (e.g., dried up waterways, flow too low or stagnant to sample, or construction). Nine sampling locations (see QAPP Deviation Report on page 55) had less than the minimum eight samples needed to accurately analyze the data using a geometric mean. However, we were able to use the secondary indicator bacteria criterion, the single sample maximum, to understand the relative water quality within each watershed and compare results across towns because this method evaluates the individual samples collected. Milford Harbor and the Norwalk River watershed had the fewest percentage of samples that exceeded the CT DEEP single sample maximum criterion for bacteria. Bruce Brook had the highest percentage of samples that exceeded the CT DEEP single sample maximum criterion for bacteria (Table 3).

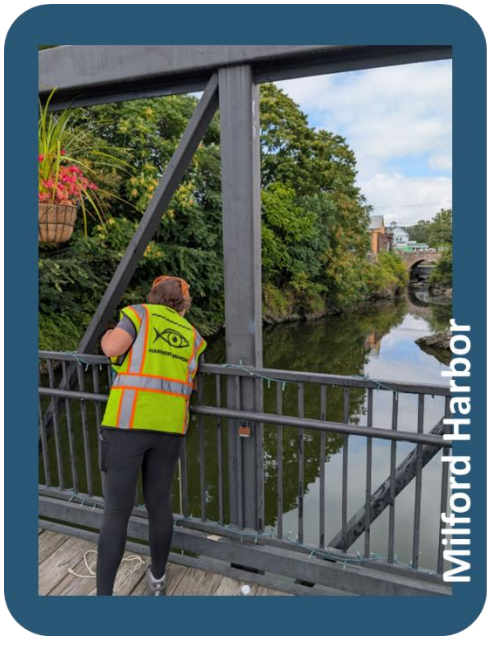
Table 2. Percentage of samples collected in each municipality that exceeded the CT DEEP single sample maximum for indicator bacteria. *Sites that are located at the border of two towns have been included in the count for each town.

Town	Number of samples collected	% Failing SSM Criteria	Waterways
Bridgeport	130	79%	Ash Creek, Bruce Brook, Pequonnock River
Darien	68	26%	Fivemile River, Noroton River
Fairfield	158	43%	Ash Creek, Sasco Brook
Milford	60	17%	Milford Harbor
New Canaan	125	21%	Fivemile River, Noroton River, Rippowam River
Norwalk	153	19%	Fivemile River, Norwalk River
Ridgefield	50	10%	Norwalk River
Stamford	161	40%	Noroton River, Rippowam River
Stratford	82	84%	Bruce Brook
Trumbull	28	32%	Ash Creek, Pequonnock River
Westport	126	37%	New Creek, Sasco Brook
Wilton	30	13%	Norwalk River

Table 3. Percentage of samples collected in each watershed that exceeded the CT DEEP single sample maximum for indicator bacteria.

Watershed	Number of Samples Collected	% Failing SSM Criterion	Towns
Ash Creek Watershed	112	56%	Bridgeport, Fairfield, Trumbull
Bruce Brook	82	84%	Bridgeport, Stratford
Fivemile River	78	19%	New Canaan, Norwalk
Milford Harbor	60	17%	Milford
New Creek	46	50%	Westport
Noroton River	79	24%	Darien, New Canaan, Stamford
Norwalk River Watershed	206	17%	Norwalk, Ridgefield, Wilton
Pequonnock River	76	68%	Bridgeport, Trumbull
Rippowam River	147	39%	New Canaan, Stamford
Sasco Brook Watershed	108	33%	Fairfield, Westport

In the 19 waterways studied, 88% of sites with eight or more sampling events exceeded (i.e., had concentrations indicative of fecal contamination) the CT DEEP geomean criterion (<126 MPN/100 mL for freshwater sites or <35 MPN/100 mL for estuarine sites) (Figure 2), and 92% of sites exceeded the secondary single sample maximum criterion (576 MPN/100 mL for freshwater sites or 500 MPN/100 mL) for estuarine sites at least once during the sampling season (Figure 3). Thirty-six percent of sampling locations exceeded the CT DEEP single sample maximum 1-25% of the time, indicating that only one or two sampling events exceeded the maximum during the monitoring season (assuming that 8-10 samples were taken per site). This is likely correlated to wet weather events when fecal matter enters our waterways untreated. Sources may include but are not limited to animal and pet waste runoff, failing septic systems, and combined sewer systems having to use their overflow discharge point. Of the 994 samples that were analyzed for indicator bacteria this monitoring season, only 38% of these samples exceeded the CT DEEP single sample maximum criteria. These percentages are similar to what was observed in 2024.



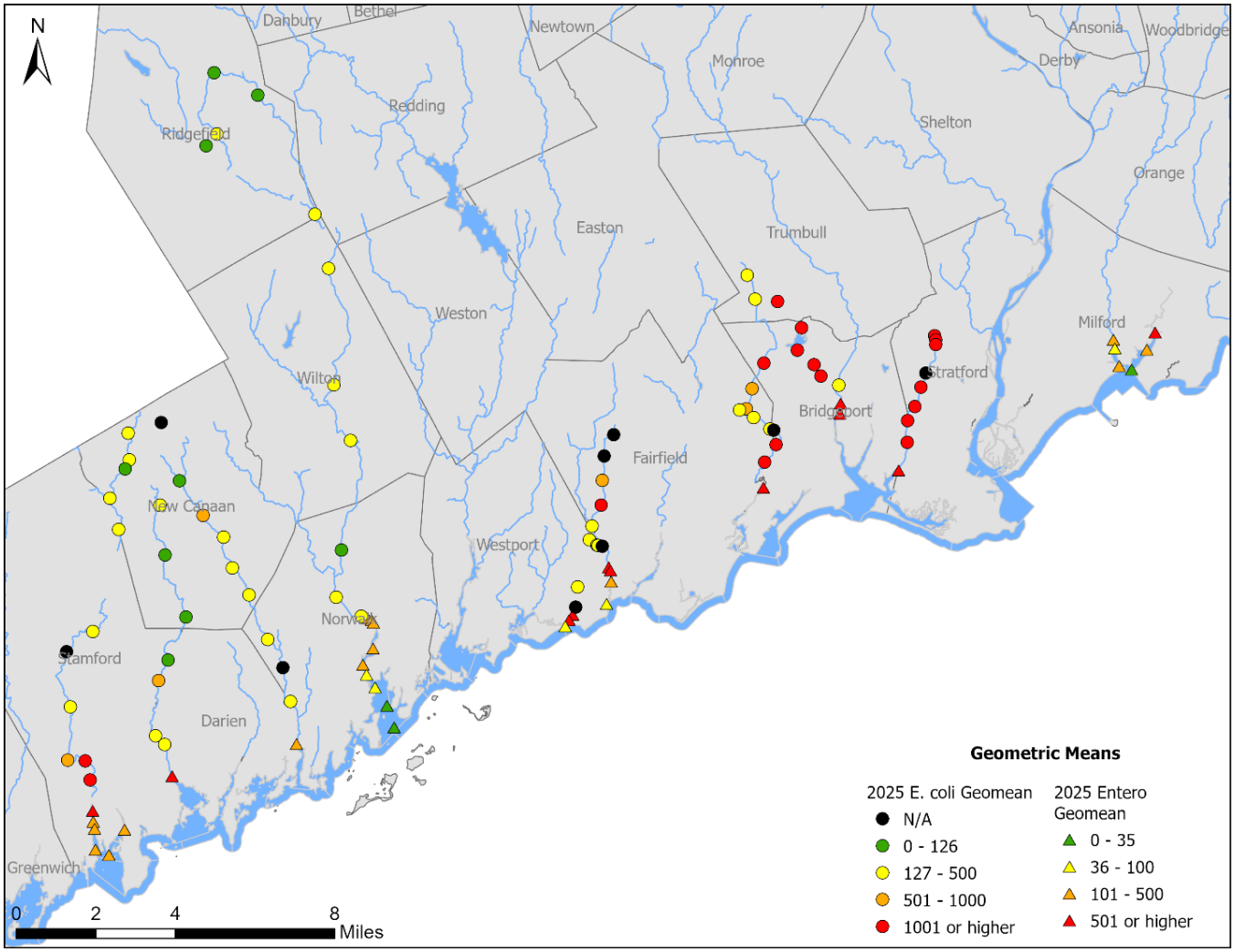


Figure 2. Map of 2025 sampling locations showing *E. coli* or enterococci geomean concentrations for each site. The bacteria concentrations for each site were compared to the state criteria for recreational waters (Table 1). Sites in green had a geomean that met CT DEEP criteria (less than 126 MPN/100 mL for *E. coli* or less than 35 MPN/100 mL for enterococci). The sites in black did not have enough data to generate a geomean.

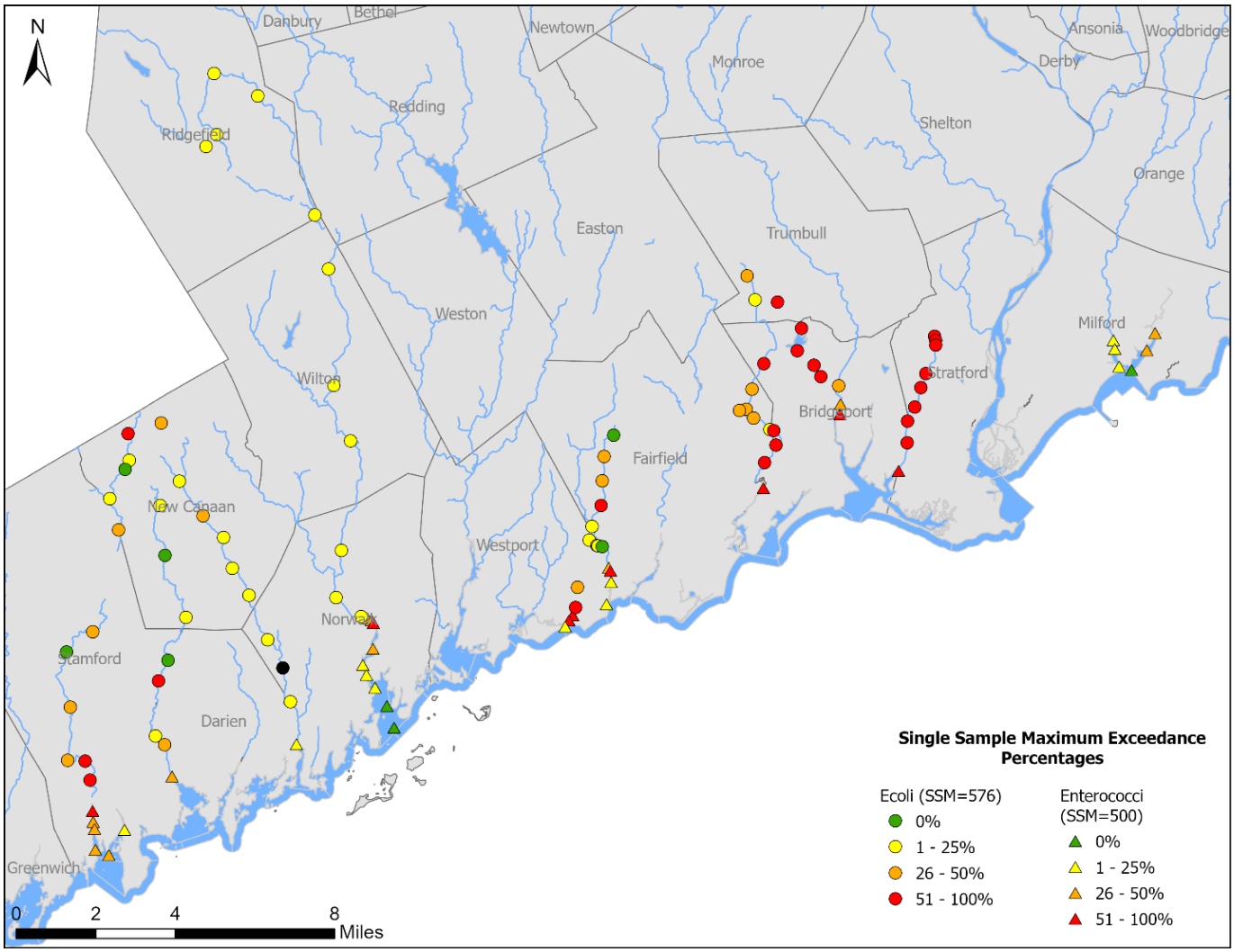


Figure 3. Map of 2025 sampling locations showing the percentage of *E. coli* and enterococci samples failing the CT DEEP single sample maximum criteria for recreational waters at each site. Sites in green had none of their samples exceeding 576 MPN/100 mL for *E. coli* and 500 MPN/100 mL for enterococci. The sites in black did not have any samples collected due to construction during the monitoring season.

Dissolved Oxygen: The CT DEEP criteria for dissolved oxygen is set at a minimum of 5 mg/L anytime for freshwater and 3 mg/L acutely for saltwater (State of Connecticut Department of Energy and Environmental Protection [CT DEEP], 2015a). Of all observed dissolved oxygen readings, 17% did not meet the CT DEEP minimum criteria in 2025. This is an increase over the 10% of all samples in 2024. The Pequonnock River had the highest frequency of low dissolved oxygen readings with 43% of observed readings below 3 mg/L (Figure 4). Prolonged periods of low dissolved oxygen can be harmful to marine and aquatic organisms, potentially leading to stress and fish kills (Sinclair, 2023). Low dissolved oxygen readings are often the result of several interacting factors. These factors include low flow (which was observed at many sampling locations due to the nature of the site), periods of low rainfall, decomposition of organic matter, and temperature (cold water can hold more dissolved oxygen than warm water (Environmental Protection Agency [EPA], 2015); therefore it is common to see a decrease in dissolved oxygen concentrations as the monitoring season progresses into the heat of the summer, where water temperatures increase).

17% of dissolved oxygen readings did not meet CT DEEP recommended minimums

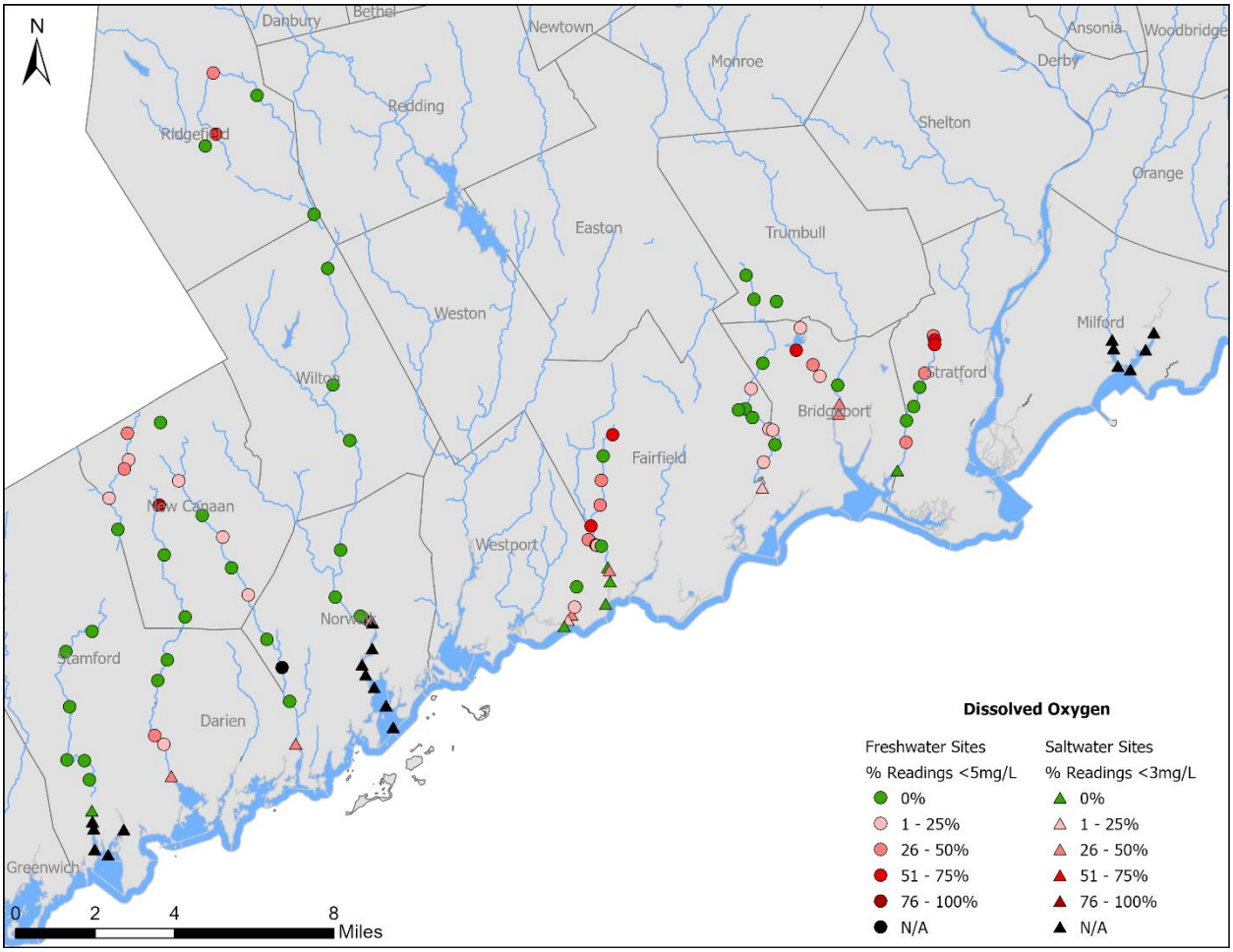
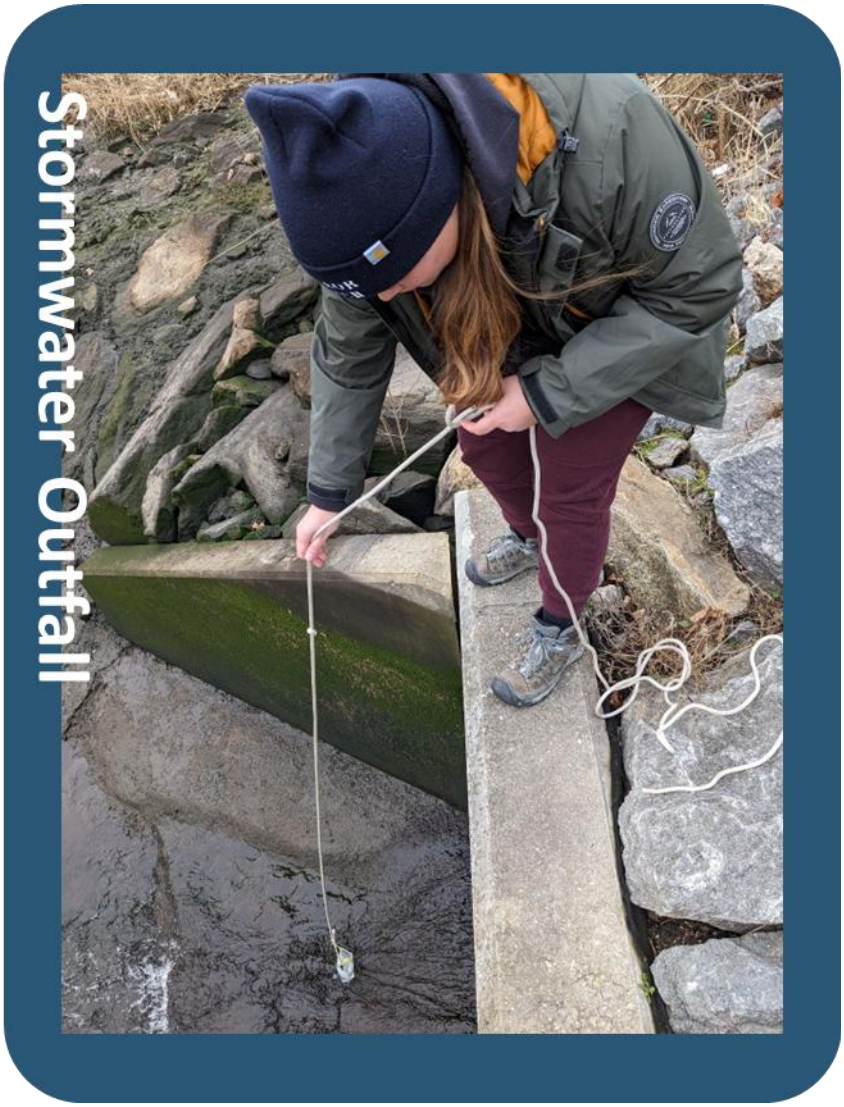


Figure 4. Map of 2025 river sampling locations showing percentage of individual dissolved oxygen readings less than the CT DEEP minimum criteria of 5 mg/L anytime for freshwater and 3 mg/L acutely for saltwater sites. The sites in black did not have any dissolved oxygen data collected during the monitoring season.

Track-down: Harbor Watch aims to better understand the ecological health of our watersheds by monitoring dissolved oxygen, conductivity, water temperature, and indicator bacteria concentrations (*E. coli* in freshwater and enterococci in brackish or saltwater), and to make these data available for use by interested stakeholders. A secondary objective is to use the data collected to assess where sewage pollution sources may be located so that we can conduct further investigation. Once sources of sewage pollution are identified, Harbor Watch works with our municipal partners in Conservation, Public Works, and Water Pollution Control Authorities to ensure that the issue is fixed. Track-down surveys were conducted on projects in Bridgeport, New Canaan, Stamford, and Westport in 2025. Track-down surveys are ongoing and will continue year-round as field conditions allow. Our process of repetitive bacteria testing has a history of success in identifying point sources of pollution, such as leaking sanitary sewer lines, broken sewer laterals, and pipes illegally hooked into the storm water system. As a way to boost our investigations, when funding allows, we are also adding pharmaceutical and microbial source tracking (also commonly referred to as DNA testing) testing to help identify potential sources such as human, horse, cow, or avian. In 2025, we conducted nine pollution track-down projects and our municipal partners are working alongside us to isolate and remove any sources that are uncovered as testing continues. The frequent incidence of failing bacteria concentrations observed over this monitoring season (Figure 2, Table 1) indicates that there is still much work to be done to improve the overall water quality of the Long Island Sound watershed. We look forward to tackling these issues head on with our partners!

Track-down projects in four towns in Fairfield County

13 sites tested for DNA markers



In the following sections, we present a data summary of each of the 10 watersheds monitored by Harbor Watch during 2025.

A. Ash Creek Watershed

(Ash Creek, Rooster River, Horse Tavern Brook, and Londons Brook)

The Ash Creek watershed encompasses portions of Fairfield, Bridgeport, Trumbull, and Easton, CT. The watershed is approximately 9,800 acres or 15.3 square miles (CT DEEP, 2013). Land use within the watershed is a mix of medium density residential lots, and commercial properties (Fuss and O'Neill, 2013). There are multiple tributaries that discharge to Ash Creek including Rooster River, Horse Tavern Brook, Londons Brook, and Ox Brook. Harbor Watch started monitoring the Ash Creek watershed in 2016 due to its status on the impaired waters list. Data has been collected annually since then with the exception of 2019.

Table A1. Site locations for the Ash Creek watershed.

Site Name	Site location notes
Horse Tavern 5	Revere Lane
Horse Tavern 4	Chestnut Hill Road
Horse Tavern 3	Vincellette Street
Horse Tavern 2	Wilson Street
Horse Tavern 1	Stratfield Road
Londons 1	Montauk Street
Rooster 4.7	Cornell Road
Rooster 4.6	Brooklawn Avenue
Rooster 4.5	Capitol Avenue
Rooster 3.5	Brooklawn Avenue
Rooster 2.5	North Avenue (Route 1)
Ash 1	Commerce Drive/State St Ext

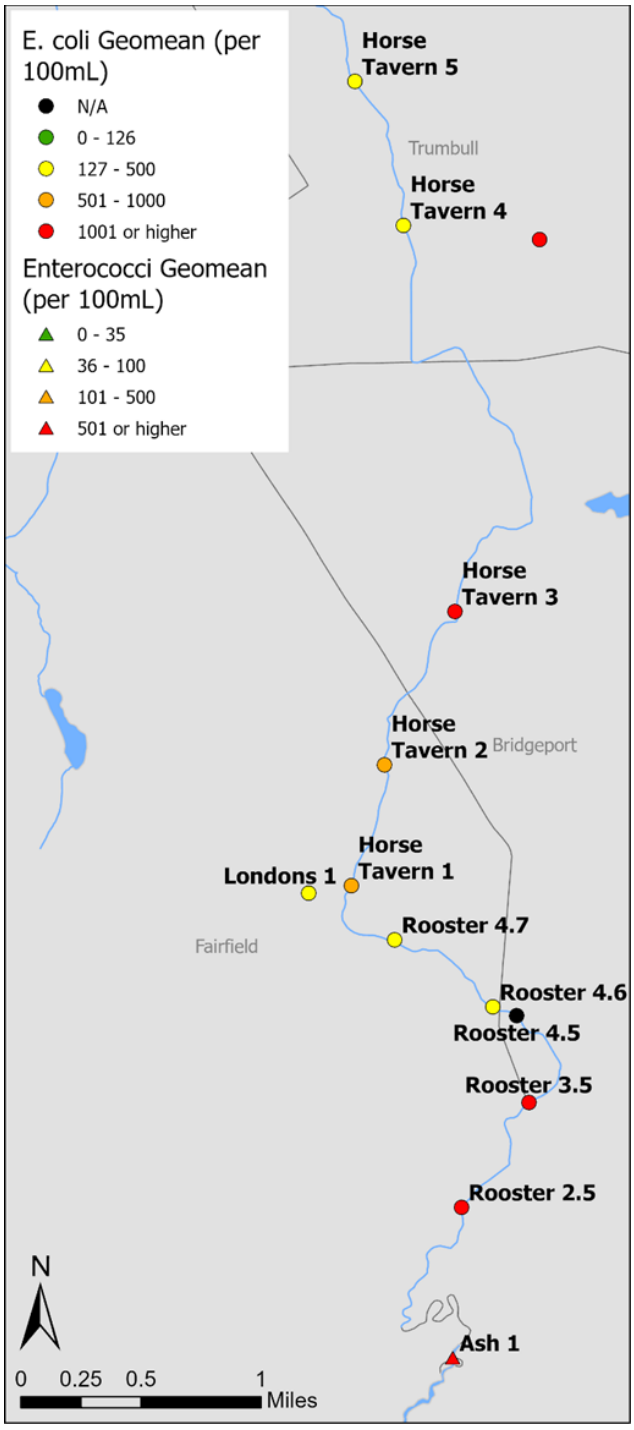


Figure A1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Ash Creek watershed in 2025. Unlabeled site is from the Pequonnock River (See sub-section H).

Indicator bacteria: In 2025, data were collected on 10 days (Table A3). All sites except Rooster 4.5 were collected the minimum of eight times. Rooster 4.5 dried up in the middle of July and remained that way through the rest of the monitoring season. All of the sites studied exceeded the CT DEEP geomean criteria for indicator bacteria (Figure A1, Table A2). Additionally, 56% of all samples processed in the Ash Creek watershed exceeded the CT DEEP single sample maximum criteria (Table A2). Bacteria concentrations in the watershed have historically exceeded CT DEEP criteria, but mean concentrations in 2025 were observed to be lower than in years prior, possibly correlated to the lower precipitation totals (Figure A2). Harbor Watch continues to partner with the City of Bridgeport and Town of Fairfield on pollution track-down work to locate sources of elevated concentrations. Even though strides have been made recently in identifying sources of sewage pollution in the watershed, the elevated concentrations provide compelling evidence that additional sources persist.

Table A2. Ash Creek watershed *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Horse Tavern 5	*E. coli*	292	30%
Horse Tavern 4	*E. coli*	187	11%
Horse Tavern 3	*E. coli*	1,766	89%
Horse Tavern 2	*E. coli*	617	30%
Horse Tavern 1	*E. coli*	814	50%
Londons 1	*E. coli*	398	40%
Rooster 4.7	*E. coli*	375	50%
Rooster 4.6	*E. coli*	332	20%
Rooster 4.5	*E. coli*	N/A	100%
Rooster 3.5	*E. coli*	4,223	100%
Rooster 2.5	*E. coli*	3,282	100%
Ash 1	Enterococci	1,117	80%

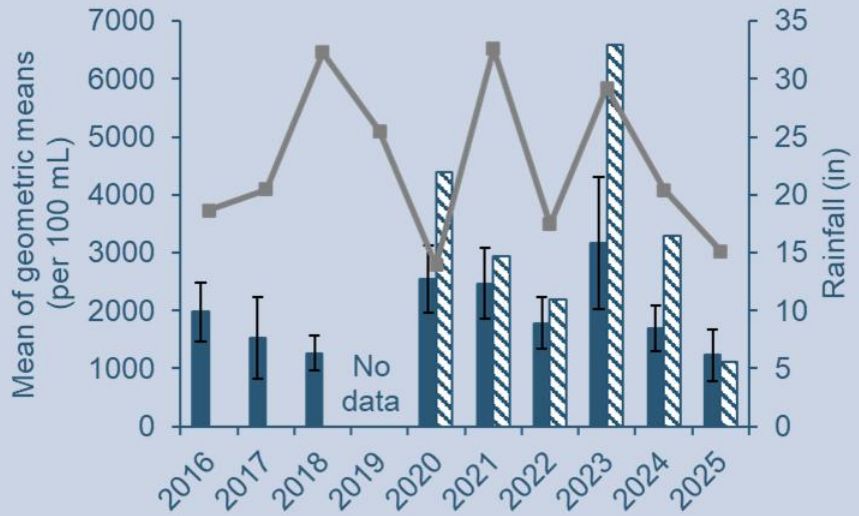
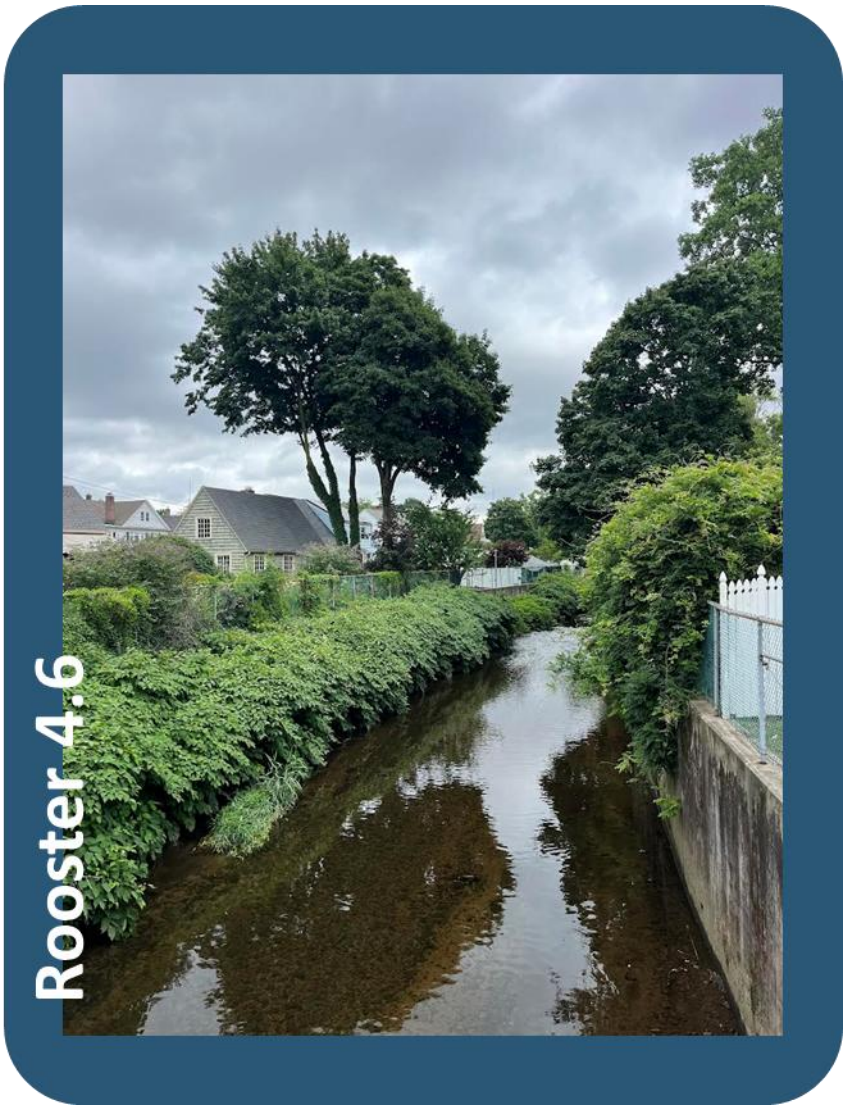


Figure A2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2016-2025 in the Ash Creek watershed and total rainfall from May through September each year (grey squares and line).

Table A3. Ash Creek watershed *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/19/2025	6/4/2025	6/16/2025	7/8/2025	7/17/2025	8/5/2025	8/20/2025	9/3/2025	9/11/2025	9/23/2025
Horse Tavern 5	*E. coli*	50	85	147	260	1,120	435	261	1,046	1,986	104
Horse Tavern 4	*E. coli*	138	109	205	109	980	62	No Data	179	147	517
Horse Tavern 3	*E. coli*	1,986	1,298	> 4,839	No Data	> 9,678	1,376	1,956	542	775	1,226
Horse Tavern 2	*E. coli*	365	435	2,420	523	3,466	774	384	420	225	411
Horse Tavern 1	*E. coli*	284	> 4,839	1,102	1,045	9,678	1,058	430	192	345	276
Londons 1	*E. coli*	236	727	579	387	1,203	160	727	291	548	115
Rooster 4.7	*E. coli*	365	980	727	687	1,553	435	922	29	261	66
Rooster 4.6	*E. coli*	361	579	1,553	258	523	319	420	71	228	172
Rooster 4.5	*E. coli*	3,106	1,633	2,069	> 9678	No Data					
Rooster 3.5	*E. coli*	794	> 4,839	> 9,678	17,329	3,030	3,328	3,564	5,172	2,909	5,172
Rooster 2.5	*E. coli*	1,298	688	> 4,839	> 9,678	5,172	4,764	3,700	9,208	1,658	2,489
Ash 1	Enterococci	1,580	1,789	1,130	481	2,481	556	402	594	2,400	2,489
Rain Accum. (48 hours prior)		0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00



Dissolved oxygen and water temperature: Dissolved oxygen readings in the watershed varied by site (Figure A3). While the majority of readings met the CT DEEP minimum criteria, seven individual dissolved oxygen readings were observed below 5 mg/L at freshwater sites Horse Tavern 2, Rooster 4.6, Rooster 4.5, and Rooster 2.5, and one individual reading was observed below 3 mg/L at saltwater site Ash 1. The low readings were observed during the middle of the summer when average water temperature was highest (Figure A4).

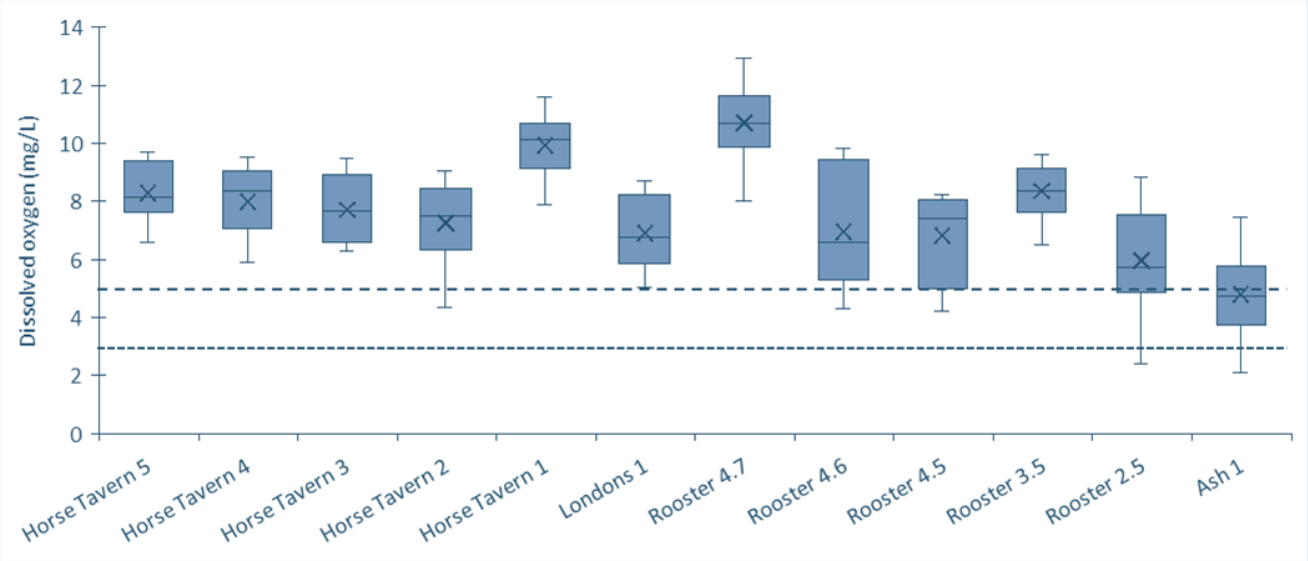


Figure A3. Box plot of dissolved oxygen concentrations at each sampling site in the Ash Creek watershed. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The only saltwater sampling site in this watershed is Ash 1.

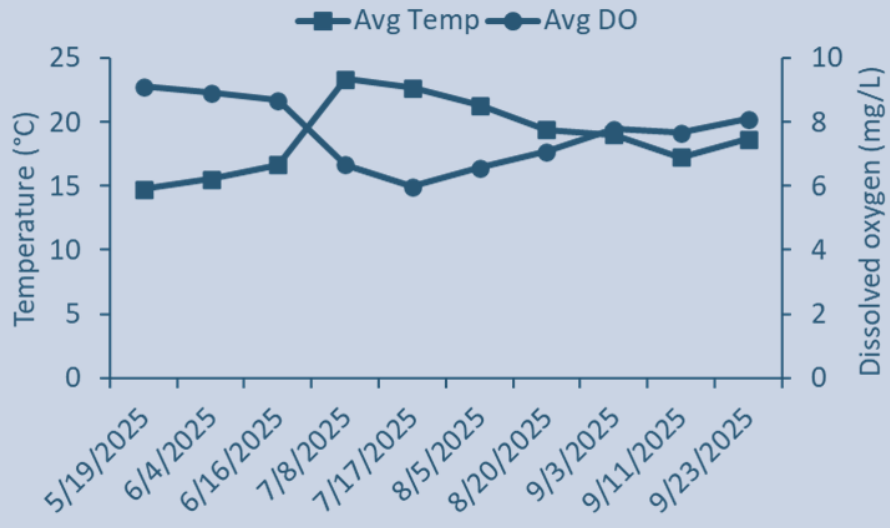


Figure A4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Ash Creek watershed.

B. Bruce Brook

The Bruce Brook watershed includes the Town of Stratford and the City of Bridgeport. It spans approximately 2,199 acres or 3.4 square miles (CT DEEP, 2012a) and discharges into Bridgeport Harbor. The land use within the watershed is divided into 94% urban area, 5% forests, 1% water, and less than 1% agriculture (CT DEEP, 2012a). The brook itself is channelized within man-made structures through a large portion of its length. Bruce Brook acts as a boundary between the two municipalities from the Route 1 corridor south to the coastline. Harbor Watch began monitoring Bruce Brook in 2017 and has continued annually, with the exception of 2020. The City of Stratford, with input from watershed stakeholders, recently led the charge on creating a watershed based plan (supported by CT DEEP 319 funds). This watershed based plan will assist in highlighting issues and prioritizing improvements within the watershed.

Table B1. Site locations for Bruce Brook.

Site Name	Site location notes
Bruce 8	Bunnell Avenue
Bruce 7	Connors Lane
Bruce 6	Old Spring Road
Bruce 5	Albright Avenue
Bruce 4	2340 Broadbridge Avenue
Bruce 3	380 Canaan Road
Bruce 2	102 Bowe Avenue
Bruce 1	Connecticut Avenue
Bruce 0.5	Hollister Avenue

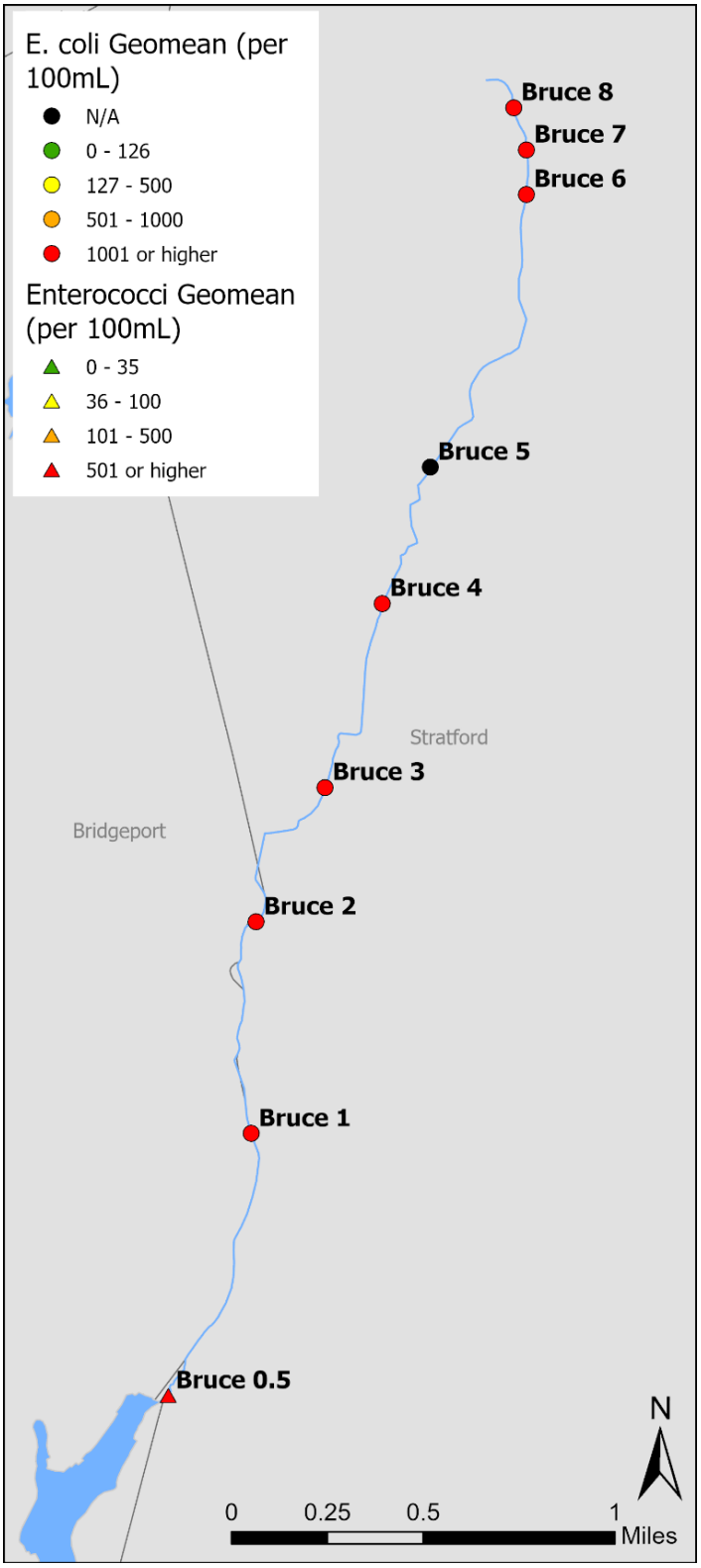


Figure B1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in Bruce Brook in 2025.

Indicator bacteria: In 2025, data were collected on ten days (Table A3). All sites except Bruce 5 were collected the minimum of eight times. Bruce 5 had extremely shallow flow resulting in the inability to collect samples in August and remained that way through the rest of the monitoring season. All of the Bruce Brook sites studied exceeded the CT DEEP geomean criteria for indicator bacteria (Figure B1, Table B2). Additionally, 84% of all samples processed in Bruce Brook exceeded the CT DEEP single sample maximum criterion (Table B2). Bacteria means in 2025 have increased over 2024 results, likely driven by elevated concentrations recorded at Bruce 2 and Bruce 1. Despite improvements made within the watershed through the years, thanks to the municipalities removing five sewage pollution sources to the brook, Bruce Brook continues to have poor water quality and is in need of additional track-down projects to isolate sources (Figure B2). Harbor Watch is actively working with the City of Bridgeport on removing pollution sources upstream of Bruce 1.

Table B2. Bruce Brook *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Bruce 8	*E. coli*	1,188	67%
Bruce 7	*E. coli*	1,250	89%
Bruce 6	*E. coli*	1,363	70%
Bruce 5	*E. coli*	N/A	60%
Bruce 4	*E. coli*	3,278	100%
Bruce 3	*E. coli*	2,851	100%
Bruce 2	*E. coli*	11,117	100%
Bruce 1	*E. coli*	11,279	90%
Bruce 0.5	Enterococci	1,133	70%

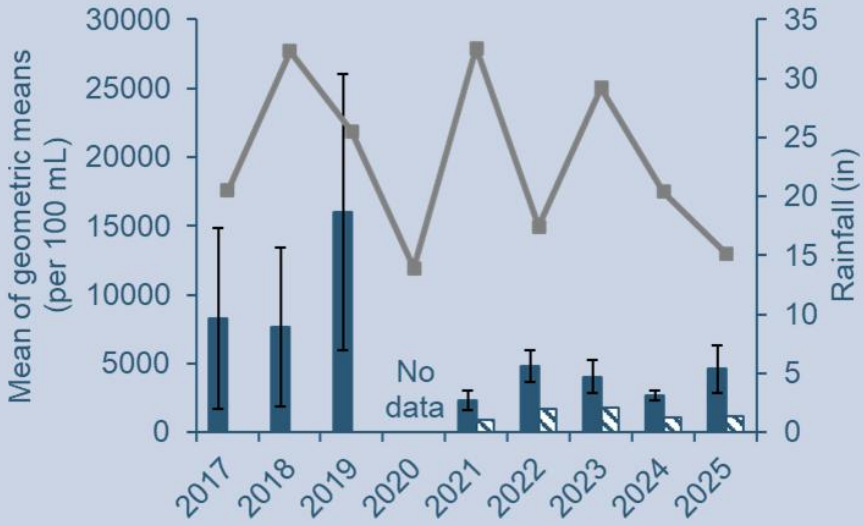
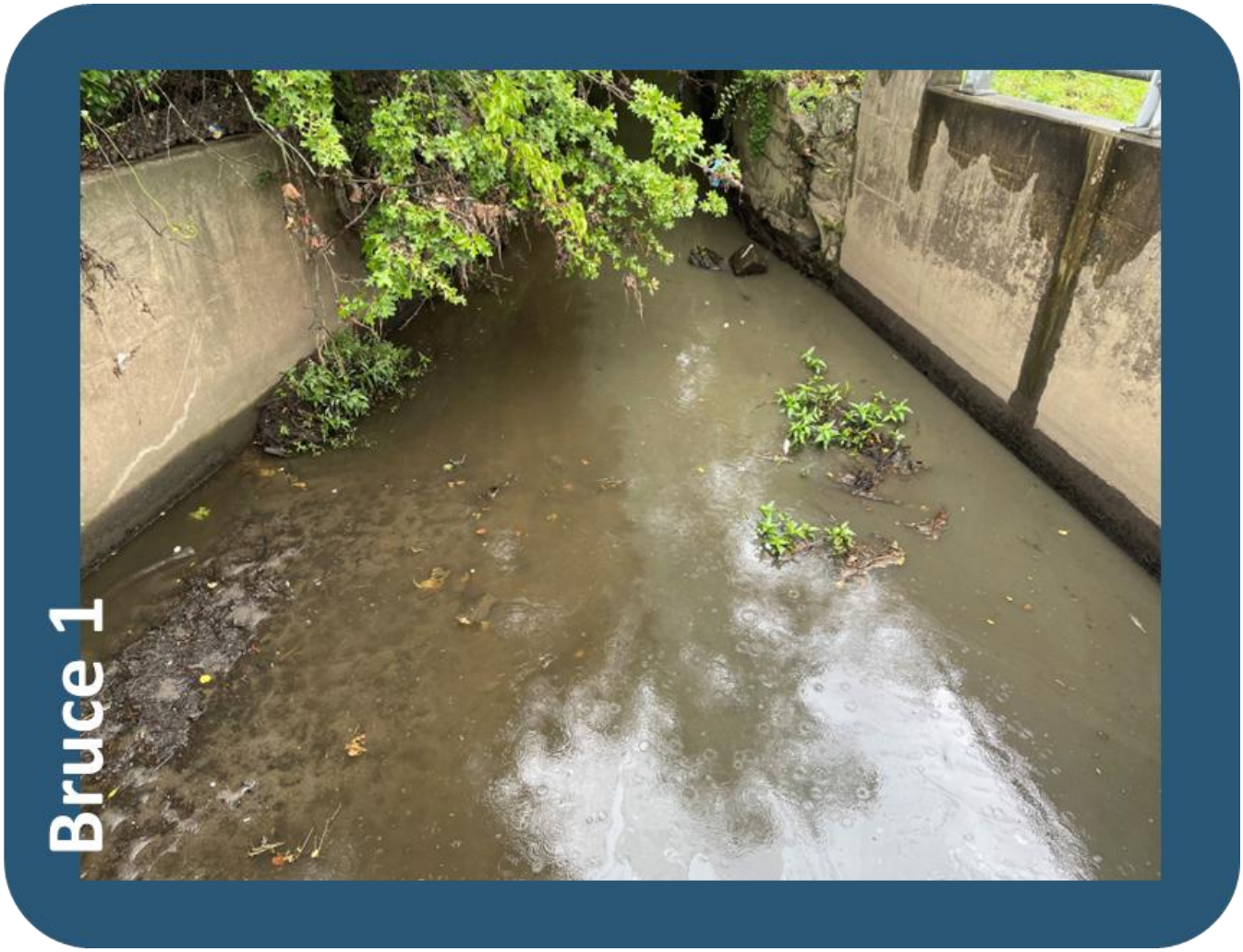


Figure B2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2017-2025 in Bruce Brook and total rainfall from May through September each year (grey squares and line).

Table B3. Bruce Brook *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/19/2025	6/5/2025	6/11/2025	6/26/2025	7/14/2025	8/4/2025	8/13/2025	8/26/2025	9/17/2025	9/22/2025
Bruce 8	*E. coli*	1,034	472	3,466	15,531	1,366	295	No Data	1,454	1,454	211
Bruce 7	*E. coli*	870	870	1,844	>9,678	1,211	1,741	No Data	219	775	1,540
Bruce 6	*E. coli*	2,299	442	4,185	17,329	1,024	754	1,100	1,462	458	527
Bruce 5	*E. coli*	96	209	2,092	>9,678	1,281	No Data				
Bruce 4	*E. coli*	621	4,185	No Data	>9,678	8,664	1,296	17,329	749	1,230	>9678
Bruce 3	*E. coli*	2,069	2,318	1,725	9,139	6,152	1,616	1,860	2,755	2,382	3,873
Bruce 2	*E. coli*	6,212	3,255	15,402	16,594	41,058	2,909	4,884	8,164	>24,196	>48,392
Bruce 1	*E. coli*	9,222	1,666	5,510	>48,392	2,281	520	>24,196	>24,196	>48,392	241,957
Bruce 0.5	Enterococci	1,130	3,654	4,611	>24,196	1,670	959	432	158	107	554
Rain Accum. (48 hours prior)		0.00	0.00	0.66	0.38	0.00	0.00	0.00	0.00	0.00	0.00



Dissolved oxygen and water temperature: Dissolved oxygen readings in the watershed varied widely (Figure B3). While the majority of readings met the CT DEEP minimum criteria, 21 individual dissolved oxygen readings were observed below 5 mg/L at freshwater sites Bruce 8, Bruce 7, Bruce 6, Bruce 5, and Bruce 1. These low readings were observed beginning in late June when water temperatures were highest (Figure B4). Flow in August at Bruce 5, Bruce 4, and Bruce 2 was so low or dried up completely, resulting in the inability to collect dissolved oxygen and water temperature data. It is likely that low dissolved oxygen readings would have been recorded at these sites if the meter could have been used based on observations in the rest of the watershed.

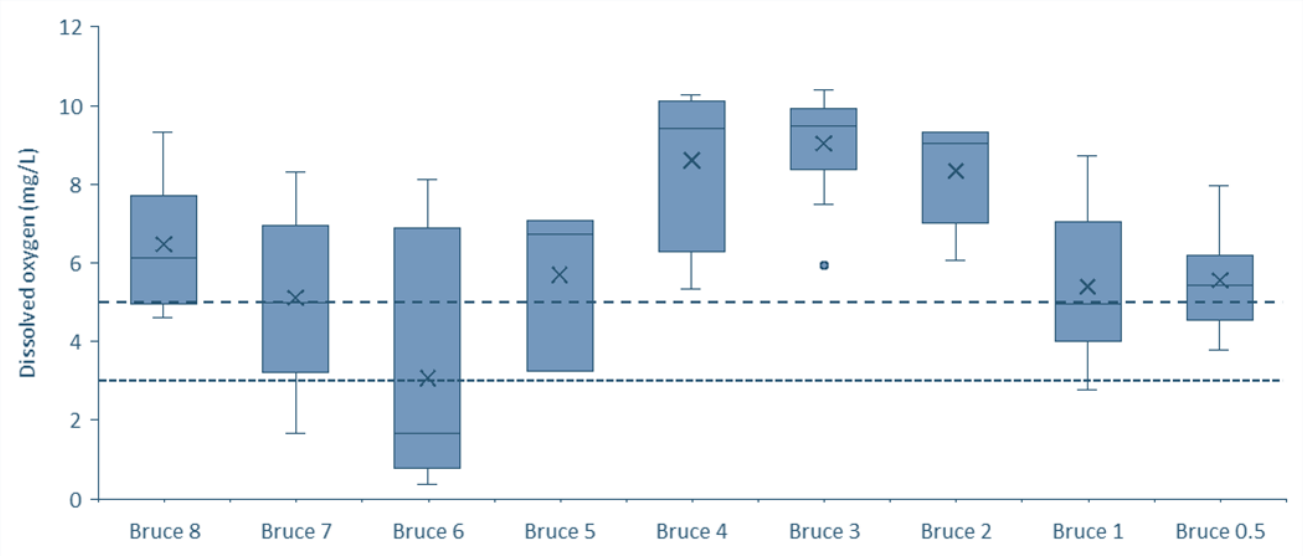


Figure B3. Box plot of dissolved oxygen concentrations at each sampling site in Bruce Brook. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The only saltwater sampling site in this watershed is Bruce 0.5.

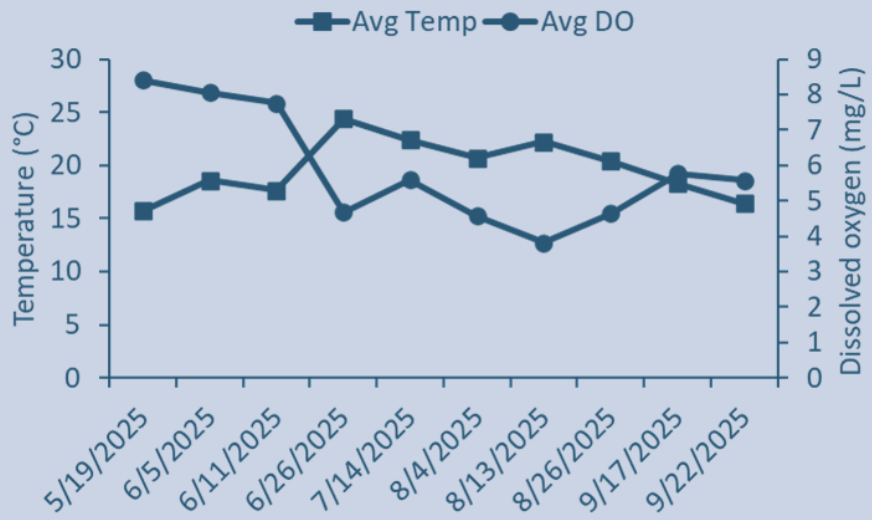


Figure B4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in Bruce Brook.

C. Fivemile River

The Fivemile River watershed includes approximately 7,995 acres of land and extends from Pound Ridge, NY through New Canaan, Norwalk, and Darien, CT before ending at Fivemile River Harbor. Land use in the watershed consists of 81% residential areas, with the upper watershed more suburban and the lower watershed more densely populated, 13% open space, and 6% commercial and institutional areas (The South Western Regional Planning Agency, 2012a). Harbor Watch has monitored the sites within the watershed periodically since 2009.

Table C1. Site locations for Fivemile River.

Site Name	Site location notes
Fivemile 10	Michigan Road
Fivemile 9	Country Club Road
Fivemile 8	Smith Ridge Road
Fivemile 7	East Avenue
Fivemile 6	Old Norwalk Road
Fivemile 5	Nursery Road
Fivemile 4	Fillow Street
Fivemile 3	W. Cedar Street
Fivemile 2	Flax Hill Road
Fivemile 1	Cudlipp Street

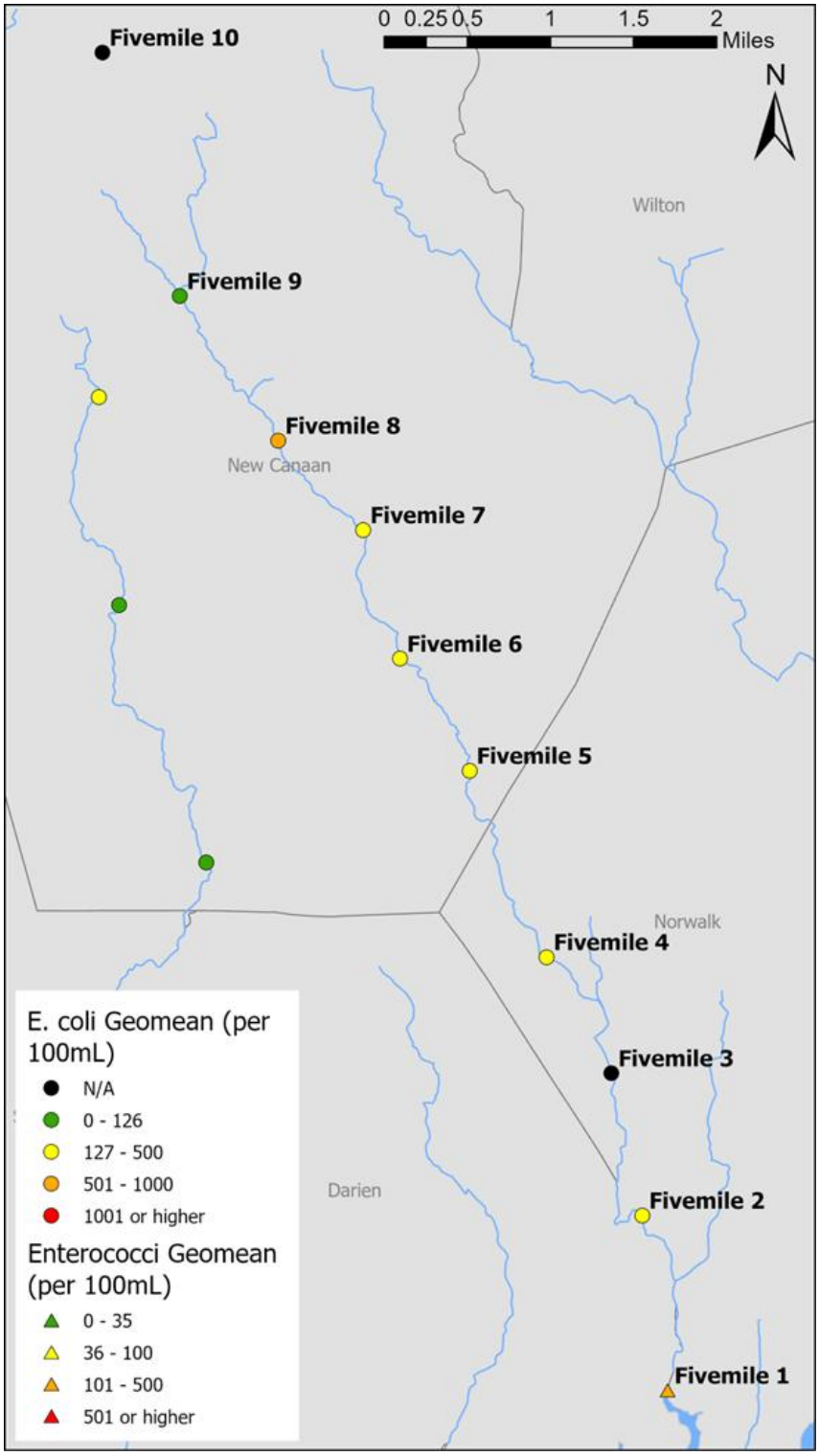


Figure C1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Fivemile River in 2025. Unlabeled sites are Noroton River (see sub-section F).

Indicator bacteria: In 2025, data were collected on nine days (Table C3). During the three sampling days in August, Fivemile 10 was found to be dry each time, resulting in fewer than eight samples being collected during the monitoring season. Additionally, Fivemile 3 was under construction, and no sampling was conducted at this site in 2025. This year, seven of the eight sampling sites exceeded the CT DEEP geomean criteria for indicator bacteria (Figure C1, Table C2). If all samples had been collected at Fivemile 10, this site was also on track to exceed the freshwater geometric mean criteria. Despite this, only 19% of all individual samples processed exceeded the CT DEEP single sample maximum criteria (Table C2). Bacteria concentrations observed in 2025 were similar to concentrations observed in years prior (Figure C2).

Table C2. Fivemile River *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Fivemile 10	*E. coli*	N/A	50%
Fivemile 9	*E. coli*	84	11%
Fivemile 8	*E. coli*	661	44%
Fivemile 7	*E. coli*	174	22%
Fivemile 6	*E. coli*	224	11%
Fivemile 5	*E. coli*	342	11%
Fivemile 4	*E. coli*	133	11%
Fivemile 3	*E. coli*	N/A	N/A
Fivemile 2	*E. coli*	323	11%
Fivemile 1	Enterococci	199	11%

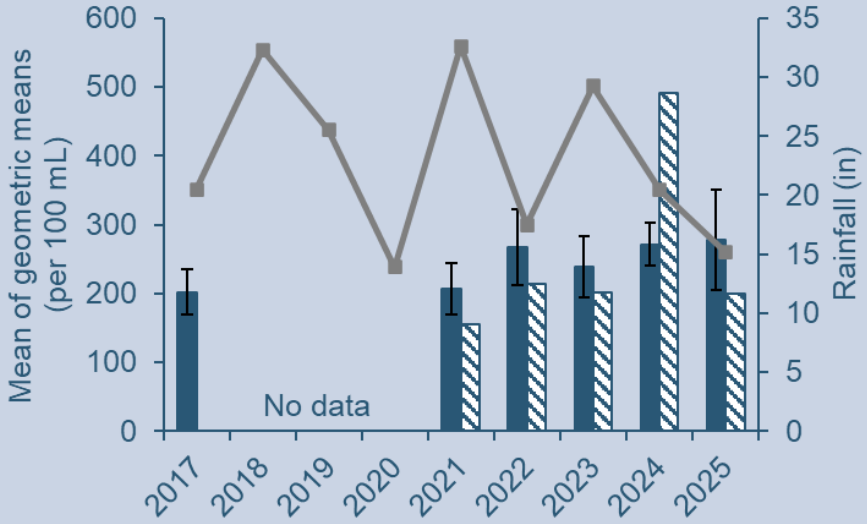


Figure C2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2017-2025 in the Fivemile River and total rainfall from May through September each year (grey squares and line).

Table C3. Fivemile River *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/22/2025	6/3/2025	6/12/2025	7/7/2025	7/16/2025	8/6/2025	8/11/2025	8/27/2025	9/18/2025
Fivemile 10	*E. coli*	>2,420	107	133	3973	2747	No Data	No Data	No Data	461
Fivemile 9	*E. coli*	921	41	59	75	345	77	33	31	45
Fivemile 8	*E. coli*	1414	91	96	2420	387	525	>2,420	476	3466
Fivemile 7	*E. coli*	>2,420	275	235	287	924	25	49	35	83
Fivemile 6	*E. coli*	1300	210	279	263	216	65	131	133	291
Fivemile 5	*E. coli*	>2,420	214	475	215	287	268	188	290	291
Fivemile 4	*E. coli*	>2,420	158	472	73	176	52	15	140	54
Fivemile 3	*E. coli*	Bridge construction								
Fivemile 2	*E. coli*	>2,420	271	373	467	345	304	257	82	151
Fivemile 1	Enterococci	2909	109	323	253	496	86	52	63	135
Rain Accum. (48 hours prior)		0.75	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.13

Track-down Update

Harbor Watch, in partnership with the Town of New Canaan, has been investigating elevated bacteria concentrations in a stormwater system that discharges upstream of Fivemile 7 since 2021. In 2025 the Town made infrastructure upgrades on the storm and sanitary sewers. This included lining the pipes to seal up any joints or cracks that might allow groundwater to infiltrate in, or pipe contents to exfiltrate. While a noticeable reduction in bacteria concentrations was observed during instream sampling at Fivemile 7, this improvement was not immediate, occurring several months after the upgrades were completed, and oddly enough, follow-up testing in the previously tested stormwater system showed no improvement based on these measures. This suggests that the lining may have remediated a separate upstream source, one significant enough to reduce concentrations at this site. To address the stormwater system that still has elevated bacteria concentrations, the Town and Harbor Watch are working to implement microbial source tracking (or DNA testing) to provide more context to potential sources of the elevated bacteria concentrations. Continued instream testing in 2026 will help determine if the drop-off observed at Fivemile 7 beginning in August represents a permanent reduction.

Dissolved oxygen and water temperature: Dissolved oxygen readings in the watershed varied by site (Figure C3). While the majority of readings met the CT DEEP minimum criteria, three individual dissolved oxygen readings were observed below 5 mg/L at freshwater sites Fivemile 9, Fivemile 7, and Fivemile 5, while three individual dissolved oxygen readings were observed below 3 mg/L at saltwater site Fivemile 1. Low readings were observed in late July through August when water temperatures were highest (Figure C4).

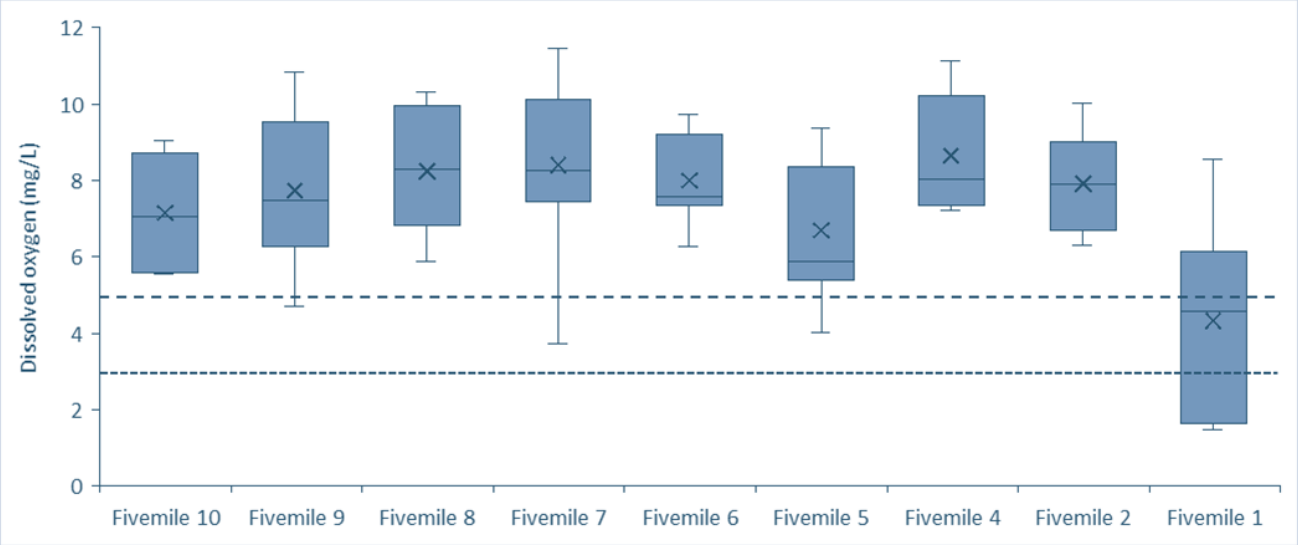


Figure C3. Box plot of dissolved oxygen concentrations at each sampling site in the Fivemile River. The dashed bule line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The only saltwater sampling site in this watershed is Fivemile 1.

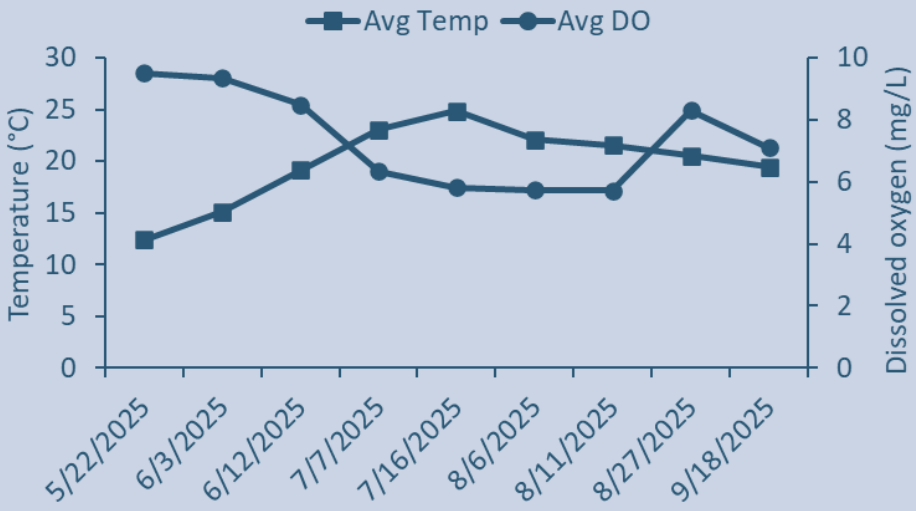


Figure C4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Fivemile River.

D. Milford Harbor Watershed

(Milford Harbor and Gulf Pond)

Milford Harbor is located in the heart of the Milford, CT coastline and is the mouth of the 15 mile-long Wepawaug River (Milford, Connecticut, n.d.). Land use around the harbor is dominated by marine-linked businesses such as marinas and boat yards, yet pockets of undeveloped coastline exist and support small salt marshes. Gulf Pond is a tidal pond that discharges into the harbor on the eastern bank at the mouth. The pond is also fed with freshwater from the north, including Indian River. Land use around the pond is primarily residential with private docks, but also fully supports a large natural salt marsh with 22.01 acres of the marsh protected by the Milford Land Conservation Trust (Parcels Owned and Managed by MLCT – 2022, n.d.). This is the first year that Harbor Watch is monitoring Milford Harbor and Gulf Pond thanks to funding from the Pathogen Monitoring Network. These waterways were chosen for inclusion because of increasing interest from CT DEEP due to their impact on offshore waters, which are prime shellfishing grounds.

Table D1. Site locations for the Milford Harbor watershed.

Site Name	Site location notes
Milford 4	Hotchkiss Bridge
Milford 3	End of High Street
Milford 1	Bureau of Aquaculture Dock
Gulf 3	New Haven Avenue
Gulf 2	Buckingham Avenue
Gulf 1	Gulf Street

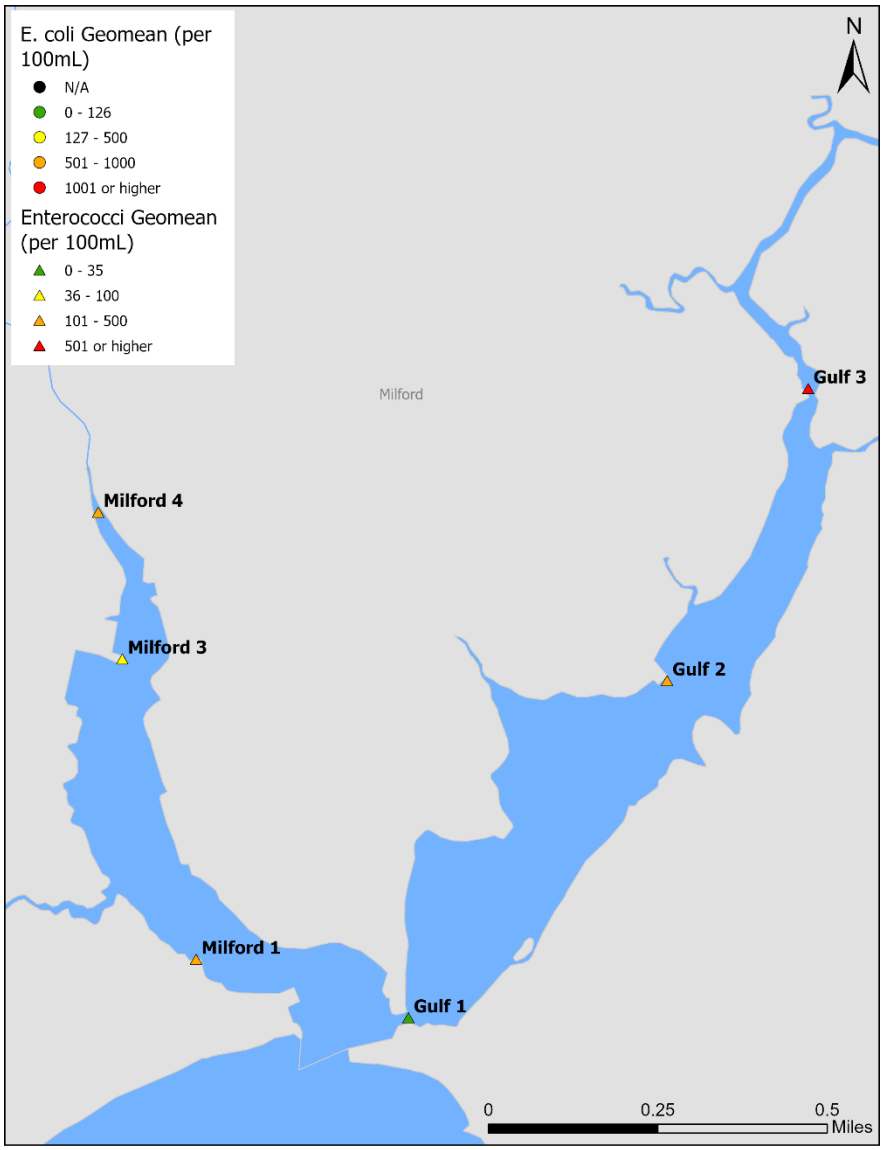


Figure D1. Map of enterococci geomean concentrations at each site in the Milford Harbor watershed in 2025.

Indicator bacteria: In 2025, data were collected on ten days. Five of the six sampling sites exceeded the CT DEEP geomean criterion for indicator bacteria in saltwater (Figure D1, Table D2). Despite this, only 17% of all individual samples processed exceeded the CT DEEP single sample maximum criterion (Table D3). Some of the highest concentrations were observed during the last two sampling events in September when a large amount of precipitation fell prior to and during sampling.

Table D2. Milford Harbor Watershed enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criterion.

Site	Indicator Bacteria	Geomean	Exceed SSM
Milford 4	Enterococci	191	10%
Milford 3	Enterococci	90	10%
Milford 1	Enterococci	157	10%
Gulf 3	Enterococci	619	40%
Gulf 2	Enterococci	121	30%
Gulf 1	Enterococci	34	0%

Table D3. Milford Harbor watershed enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/5/2025	5/21/2025	6/16/2025	6/25/2025	7/14/2025	7/28/2025	8/20/2025	8/25/2025	9/8/2025	9/25/2025
Milford 4	Enterococci	228	161	399	216	132	201	84	<10	74	12,033
Milford 3	Enterococci	201	185	41	20	75	41	122	10	74	4,106
Milford 1	Enterococci	253	41	373	110	1,607	301	52	10	199	414
Gulf 3	Enterococci	443	249	195	51	1,354	11,199	121	158	1,076	24,196
Gulf 2	Enterococci	183	31	121	10	839	388	<10	20	1,071	1,354
Gulf 1	Enterococci	86	31	20	10	187	20	<10	84	52	20
Rain Accum. (48 hours prior)		0.95	0.00	0.01	0.00	0.00	0.02	0.00	0.00	1.23	0.30

E. New Creek

New Creek is a small waterway in Westport that discharges to Long Island Sound at Burying Hill Beach. The land use within the small watershed is predominantly residential, with the lower portion of the creek passing through a salt marsh. Additionally, a tidally influenced side channel connects the creek to the Sherwood Island Millpond. In the past, Harbor Watch periodically monitored New Creek as part of student projects in the fall and winter months, but starting in 2023 data were collected during the summer monitoring season. Harbor Watch added this sampling at the request of the Westport Shellfish Commission to better understand the water quality in the creek and possibly identify pollution sources.

Table E1. Site locations for New Creek.

Site Name	Site location notes
New 3	Clapboard Hill Road
New 2	Post Office Lane
New 1.5	Maple Lane
New 1	Beachside Avenue
New 0.5	Burying Hill Road

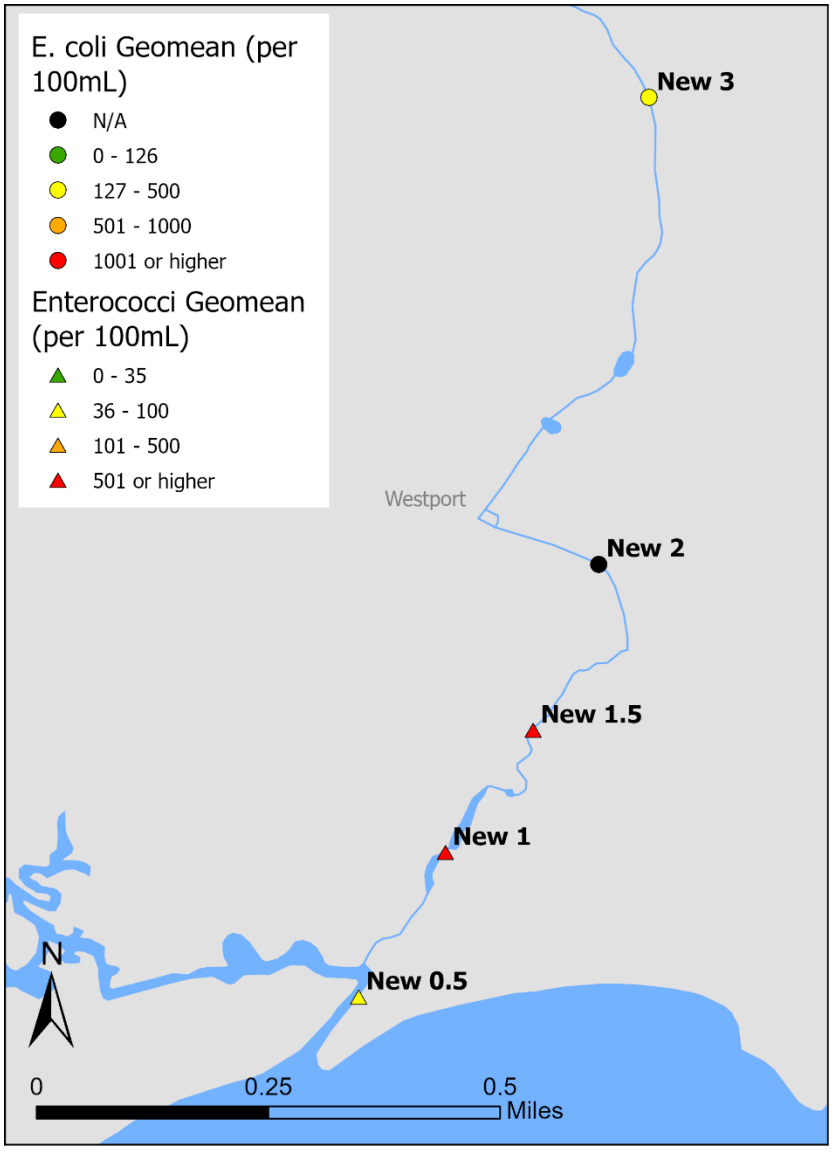


Figure E1 (right). Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in New Creek in 2025.

Indicator bacteria: In 2025, data were collected on ten days. All sites except New 2 were collected the minimum of eight times. New 2 had three sampling events where the water was stagnant, flow was too low, or had dried up completely. All sites exceeded the CT DEEP geomean criteria (Figure E1, Table E2). Additionally, 50% of all samples processed exceeded the CT DEEP single sample maximum criteria (Table E3).

Table E2. New Creek *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
New 3	*E. coli*	405	40%
New 2	*E. coli*	N/A	57%
New 1.5	Enterococci	2,086	90%
New 1	Enterococci	732	56%
New 0.5	Enterococci	48	10%

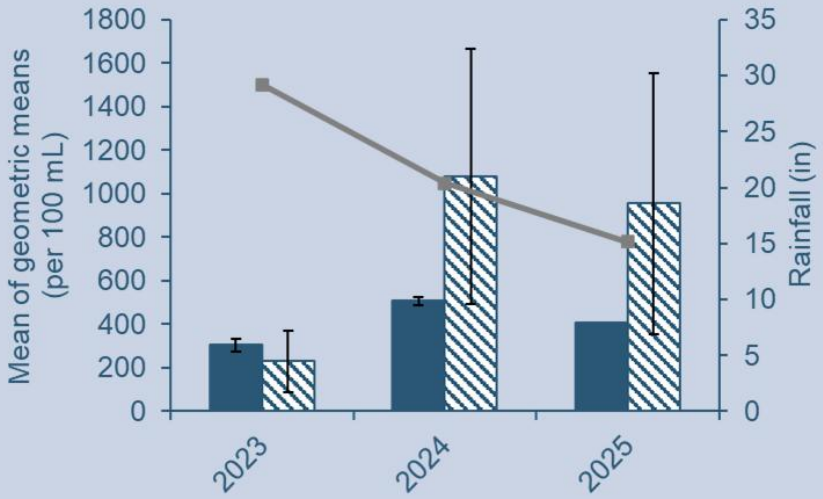


Figure E2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2023-2025 in New Creek and total rainfall from May through September each year (grey squares and line).

Table E3. New Creek *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/12/2025	6/5/2025	6/9/2025	6/23/2025	7/24/2025	8/7/2025	8/11/2025	9/4/2025	9/15/2025	9/29/2025
New 3	*E. coli*	108	272	472	1,986	2,318	1,379	180	39	80	>2,420
New 2	*E. coli*	201	461	1,226	980	No Data	No Data	323	2,827	688	No Data
New 1.5	Enterococci	624	677	857	5,794	6,488	2,282	4,106	134	6,488	14,136
New 1	Enterococci	98	272	7,701	317	8,164	No Data	2,603	<10	1,421	3,076
New 0.5	Enterococci	20	10	109	20	723	31	121	10	41	148
Rain Accum. (48 hours prior)		0.00	0.00	0.69	0.14	0.00	0.00	0.00	0.00	0.00	0.00

Track-down Update

Since bacteria concentrations at New 1.5 continued to be elevated well above single sample maximum criterion, Harbor Watch conducted a track-down project. This project was a recreation of a project from 2024, with the intention of seeing if bacteria concentrations trends remained the same. To execute this project, field teams sampled four sites during multiple times in a tide cycle in July and September 2025. This additional testing disproved the original hypothesis that the creek is being impacted by septic systems in the vicinity of the creek along the marsh when the marsh is flooded at high tide. Instead, the results from the analysis of all 3 track-down events suggest that the pollution source is linked to peak residential water use, where a failing septic system may be overwhelmed by daily activities like showering and toilet flushing (Figure E3). Harbor Watch is continuing to work with Westport Conservation and the Shellfish Commission on next steps to identify the source.

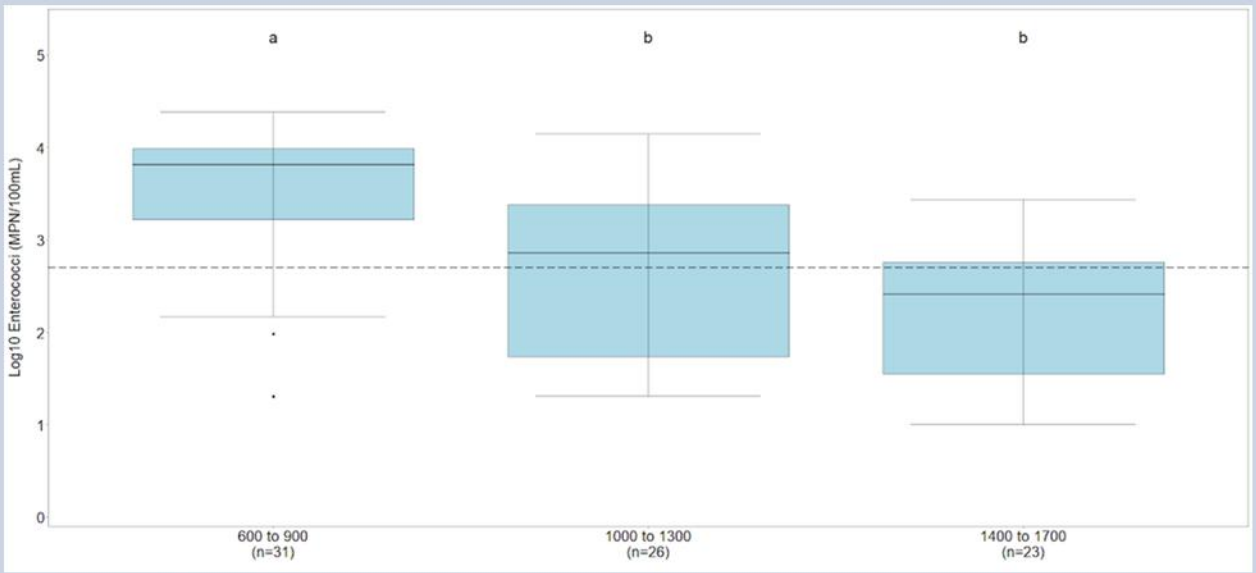


Figure E3. Boxplot of all enterococci values from all three sampling events by time of day (x-axis). Samples collected from 6:00 to 9:00am were significantly different than samples collected from 10:00am to 1:00pm and 2:00 to 5:00pm.

Dissolved oxygen and water temperature: Dissolved oxygen readings varied at each site throughout the watershed (Figure E4). While the majority of individual dissolved oxygen readings met the CT DEEP minimum criteria, one individual reading was observed below 5 mg/L at site New 2, and five individual readings were observed below 3 mg/L at sites New 1.5 and New 1. High water temperatures were likely a contributing factor to the observed low dissolved oxygen readings during this time (Figure E5).

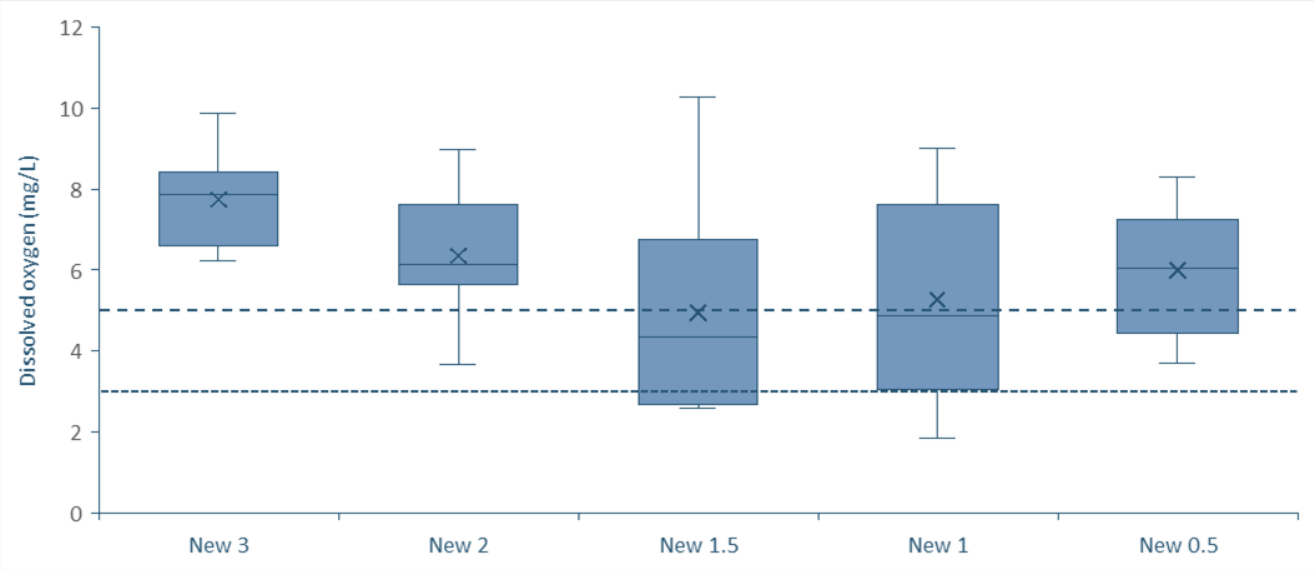


Figure E4. Box plot of dissolved oxygen concentrations at each sampling site in New Creek. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The saltwater sampling sites in this watershed are New 1.5, New 1, and New 0.5.

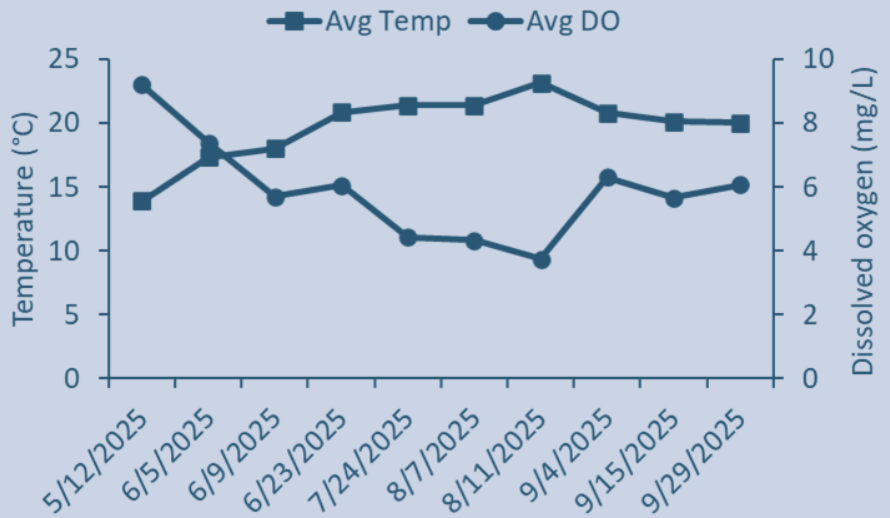


Figure E5. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in New Creek.

F. Noroton River

The Noroton River watershed encompasses portions of Stamford, Darien, and New Canaan, CT. The watershed is approximately 7,000 acres or 11 square miles (CT DEEP, 2022). The river begins in New Canaan and flows south, forming the border of Stamford and Darien, until it discharges into Holly Pond. The land use along the river is a mixture of residential and light commercial. Harbor Watch has monitored the Noroton River annually since 2016.

Table F1. Site locations for Noroton River.

Site Name	Site location notes
Noroton 8	West Road and Greenley Road intersection
Noroton 7	209 Frogtown Road
Noroton 5	47 Jelliff Mill Road
Noroton 4	137 Woodway Road
Noroton 3	Camp Avenue
Noroton 2	668 Connecticut 106
Noroton 1.75	West Avenue
Noroton 1	1308 E. Main Street

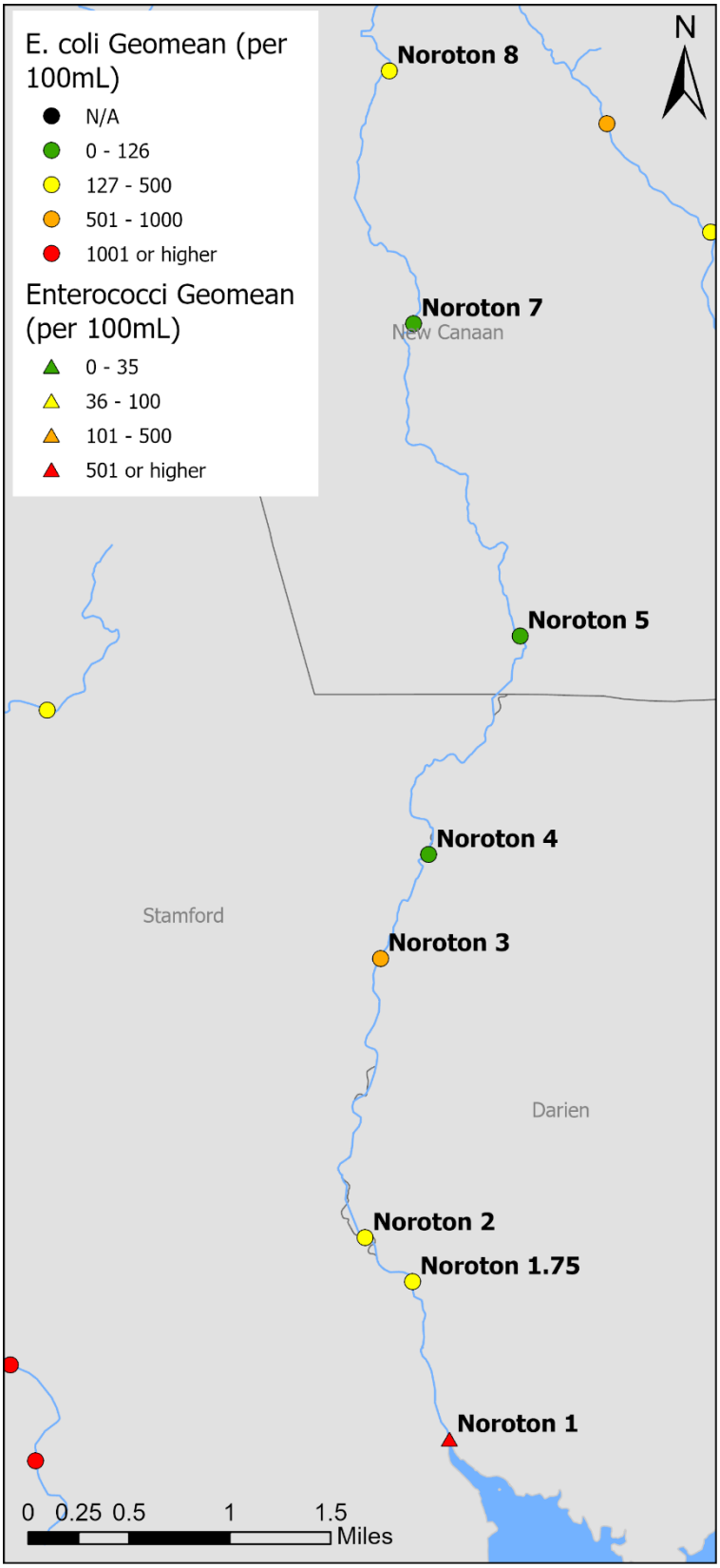


Figure F1 (right). Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Noroton River in 2025. Unlabeled sites are Fivemile River and Rippowam River (see sub-section C and I respectively).

Indicator bacteria: In 2025, data were collected on ten days. Bacteria concentrations at five of the eight sites in Noroton River exceeded the CT DEEP geomean criteria (Figure F1, Table F2). Additionally, 24% of all samples processed exceeded the CT DEEP single sample maximum criteria (Table F3). Annual mean *E. coli* concentrations dropped slightly compared to the increasing trend observed since 2020 (Figure F2).

Table F2. Noroton *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Noroton 8	*E. coli*	238	22%
Noroton 7	*E. coli*	65	0%
Noroton 5	*E. coli*	39	10%
Noroton 4	*E. coli*	101	0%
Noroton 3	*E. coli*	691	70%
Noroton 2	*E. coli*	132	10%
Noroton 1.75	*E. coli*	464	30%
Noroton 1	Enterococci	517	50%

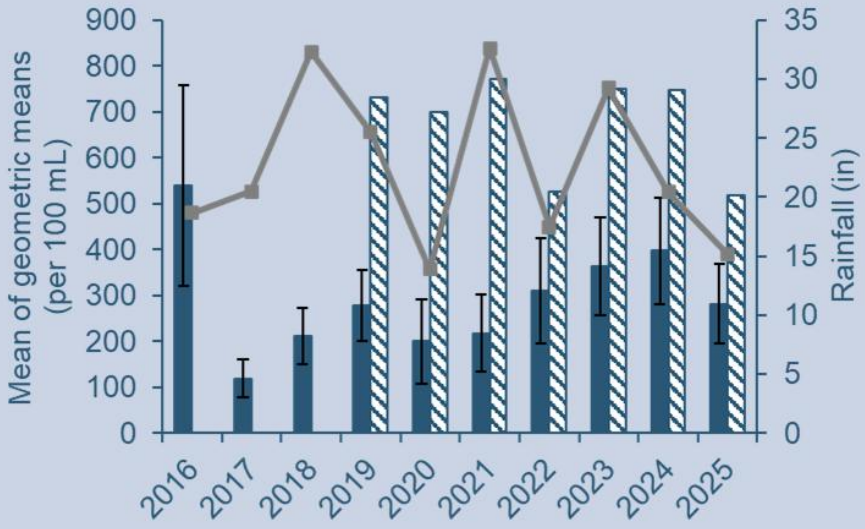


Figure F2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2016-2025 in Noroton River and total rainfall from May through September each year (grey squares and line).

Table F3. Noroton River *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/13/2025	6/3/2025	6/17/2025	7/9/2025	7/24/2025	8/4/2025	8/19/2025	8/28/2025	9/9/2025	9/22/2025
Noroton 8	*E. coli*	192	488	770	1,120	248	No Data	210	71	249	33
Noroton 7	*E. coli*	52	43	57	517	41	150	45	40	66	26
Noroton 5	*E. coli*	48	81	50	1,203	5	108	5	3	22	193
Noroton 4	*E. coli*	50	72	18	517	238	19	172	411	108	96
Noroton 3	*E. coli*	127	193	1,986	1,961	582	1,159	1,298	1,034	293	977
Noroton 2	*E. coli*	172	113	99	> 2,420	91	21	70	249	276	38
Noroton 1.75	*E. coli*	185	166	231	> 2,420	1,011	496	498	321	613	548
Noroton 1	Enterococci	185	120	213	> 24,196	537	717	738	109	1,691	228
Rain Accum. (48 hours prior)		0.00	0.00	0.07	0.47	0.00	0.00	0.00	0.00	0.04	0.00

Dissolved oxygen and water temperature: Dissolved oxygen readings varied at each site throughout the watershed (Figure F3). While the majority of individual dissolved oxygen readings met the CT DEEP minimum criteria, 12 readings were observed below 5 mg/L at Noroton 8, Noroton 2, and Noroton 1.75, and five readings were observed below 3 mg/L at saltwater site Noroton 1. Low flow was the primary reason for low dissolved oxygen concentrations at Noroton 8. Higher water temperatures and limited precipitation may be contributing to lower concentrations at the other sites (Figure F4).

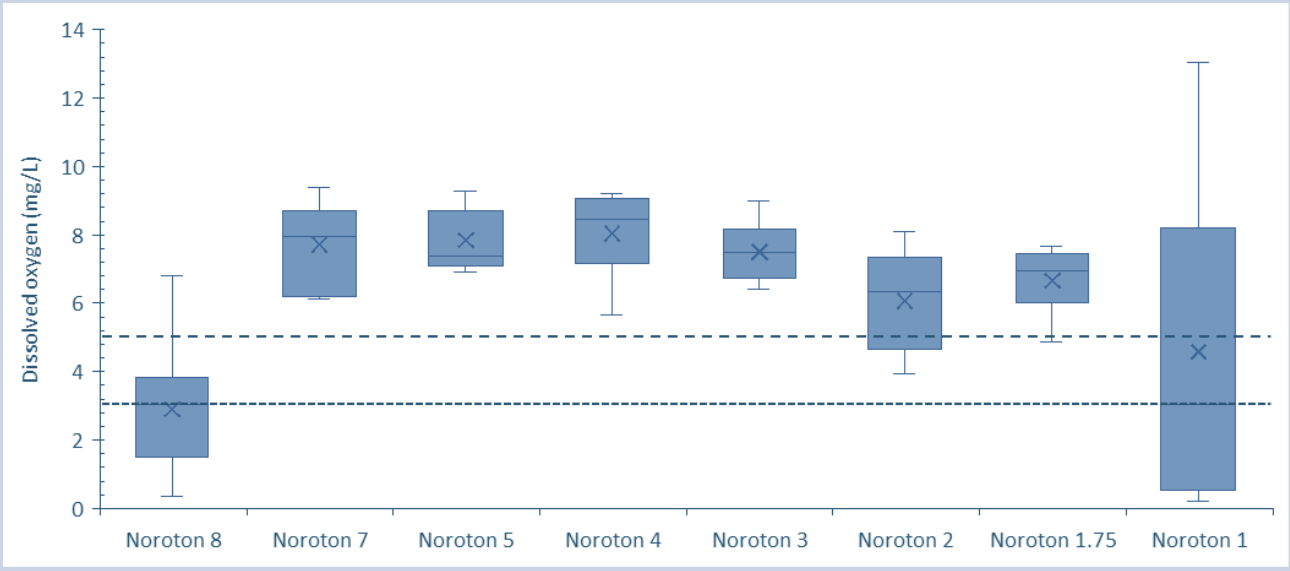


Figure F3. Box plot of dissolved oxygen concentrations at each sampling site in the Noroton River. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The only saltwater sampling site in this watershed is Noroton 1.

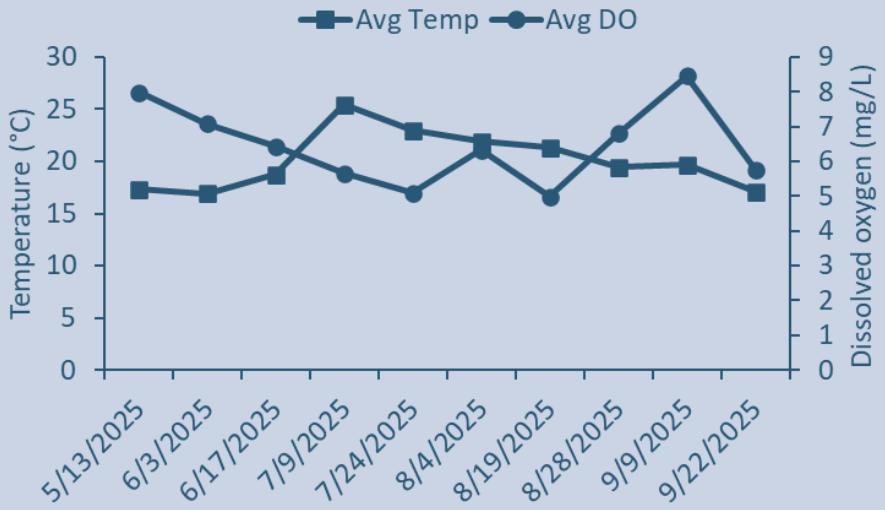


Figure F4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Noroton River.

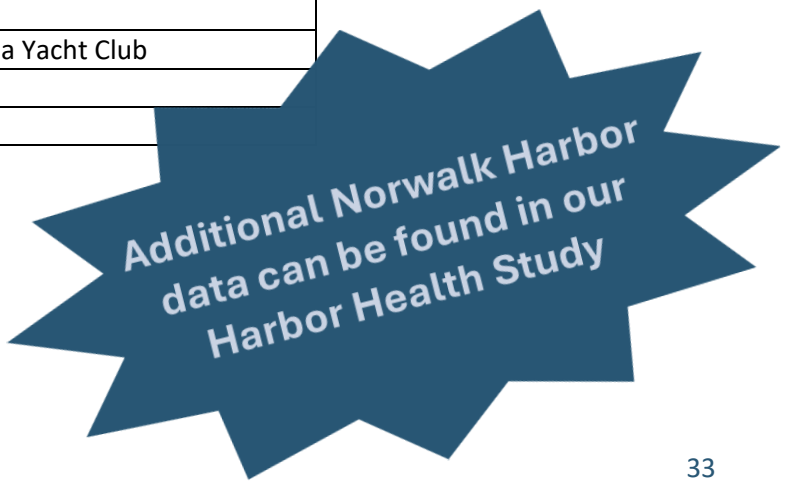
G. Norwalk River Watershed

(Norwalk Harbor, Norwalk River, Ridgefield Brook)

The Norwalk River watershed includes New Canaan, Norwalk, Redding, Ridgefield, Weston, and Wilton, CT, as well as Lewisboro, NY. The watershed is roughly 40,000 acres (64.1 square miles), which is developed by commercial/light industry uses and residential neighborhoods (Norwalk River Watershed Initiative [NRWI], 1998). The main stem of the Norwalk River is approximately 20 miles in length, beginning in the Great Swamp in Ridgefield, ultimately discharging in Norwalk Harbor, which is an approximately 3-mile-long tidal estuary (NRWI, 1998). Harbor Watch has monitored the Norwalk River for over 25 years. This year marks the third monitoring season in which Harbor Watch collected indicator bacteria data in Norwalk Harbor as part of the Pathogen Monitoring Network. The harbor and surrounding areas are regularly used for recreational and commercial shellfishing as well as other recreational activities. The river sites and harbor sites were monitored on different days due to scheduling and weather conditions. Because harbor samples had to be collected via boat, samples were never collected during rainfall events for safety reasons, which may have biased the data slightly.

Table G1. Site locations for the Norwalk River watershed.

Site Name	Site location notes
Norwalk 23	22 South Street
Norwalk 21	68 Farmingville Road
Norwalk 19	Limestone Road
Norwalk 15	Stonehenge Road
Norwalk 13	787 Branchville Road
Norwalk 9.5	Old Mill Road
Norwalk 9	School Road
Norwalk 6	187 Danbury Road
Norwalk 4	10 Glover Avenue
Norwalk 2	New Canaan Avenue
Norwalk 1	40 Cross Street
Norwalk 0.5	Burnell Boulevard
Norwalk 0.25	Wall Street
Norwalk Harbor 1	Off marina at Wall Street
Norwalk Harbor 2	At the I-95 Bridge
Norwalk Harbor 3	At the TMA dock across from WTP effluent discharge
Norwalk Harbor 4	Transient dock at Vets Park
Norwalk Harbor 5	Moorings across from Ischoda Yacht Club
Norwalk Harbor 6	Buoy 19
Norwalk Harbor 7	Buoy 15



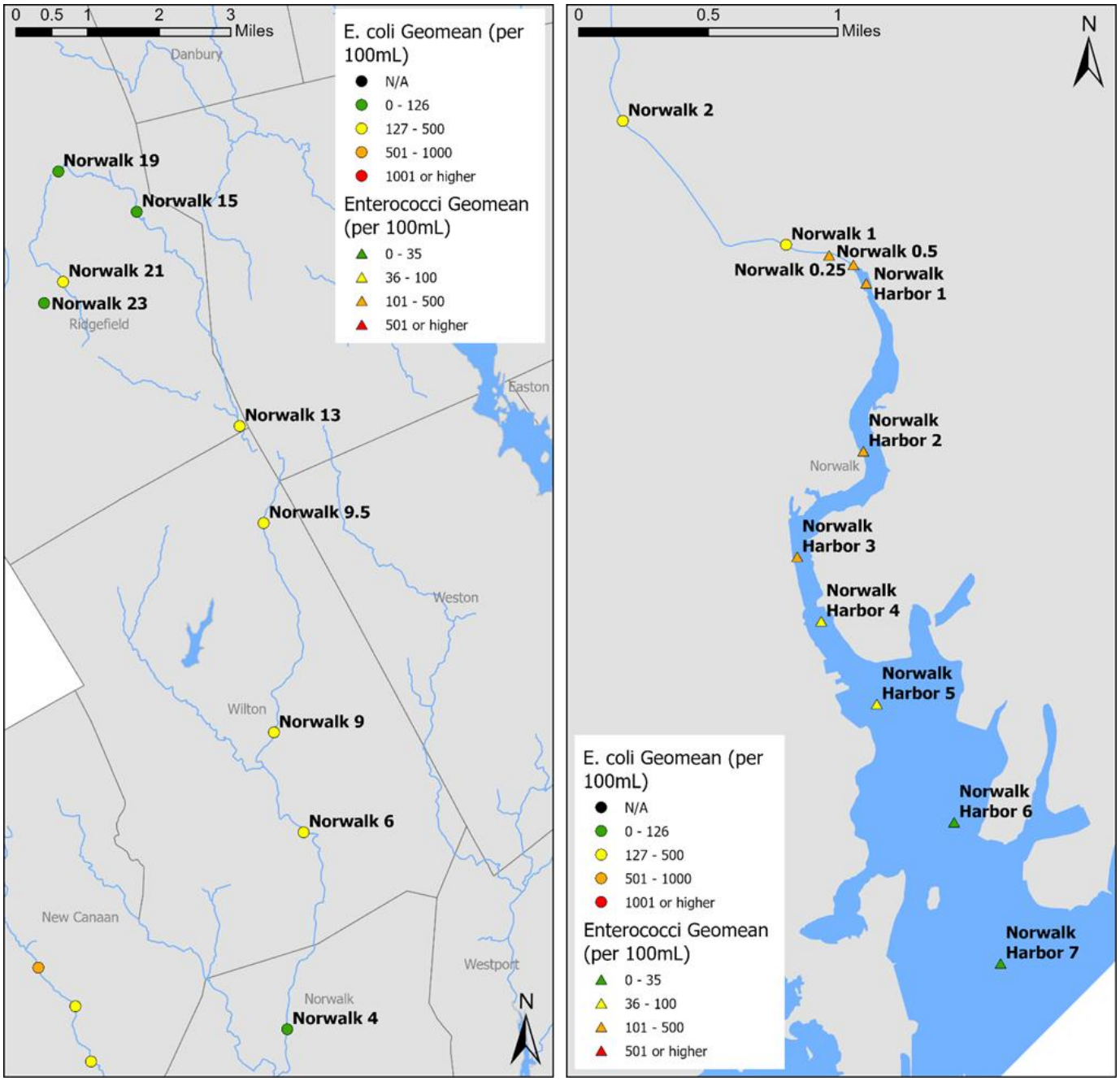


Figure G1. Maps of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Norwalk River watershed in 2025. Unlabeled sites are Fivemile River (see sub-section C).

Indicator bacteria: In 2025, data were collected in the Norwalk River watershed on 17 days. In the watershed, 14 of the 20 sites exceeded the CT DEEP geomean criteria for indicator bacteria (Figure G1). Additionally, 17% of all samples processed exceeded the CT DEEP single sample maximum criteria (Table G2). Bacteria concentrations in the watershed are slightly lower than those observed last year (Figure G2). This may be due to decreased precipitation in 2025, resulting in less runoff and stormwater discharge.

Table G2. Norwalk River watershed *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Norwalk 23	*E. coli*	46	10%
Norwalk 21	*E. coli*	316	10%
Norwalk 19	*E. coli*	30	10%
Norwalk 15	*E. coli*	68	10%
Norwalk 13	*E. coli*	132	10%
Norwalk 9.5	*E. coli*	232	20%
Norwalk 9	*E. coli*	183	10%
Norwalk 6	*E. coli*	165	10%
Norwalk 4	*E. coli*	98	10%
Norwalk 2	*E. coli*	183	10%
Norwalk 1	*E. coli*	289	11%

Site	Indicator Bacteria	Geomean	Exceed SSM
Norwalk 0.5	Enterococci	395	30%
Norwalk 0.25	Enterococci	417	50%
Norwalk Harbor 1	Enterococci	467	55%
Norwalk Harbor 2	Enterococci	278	27%
Norwalk Harbor 3	Enterococci	171	18%
Norwalk Harbor 4	Enterococci	74	18%
Norwalk Harbor 5	Enterococci	46	18%
Norwalk Harbor 6	Enterococci	20	0%
Norwalk Harbor 7	Enterococci	21	0%

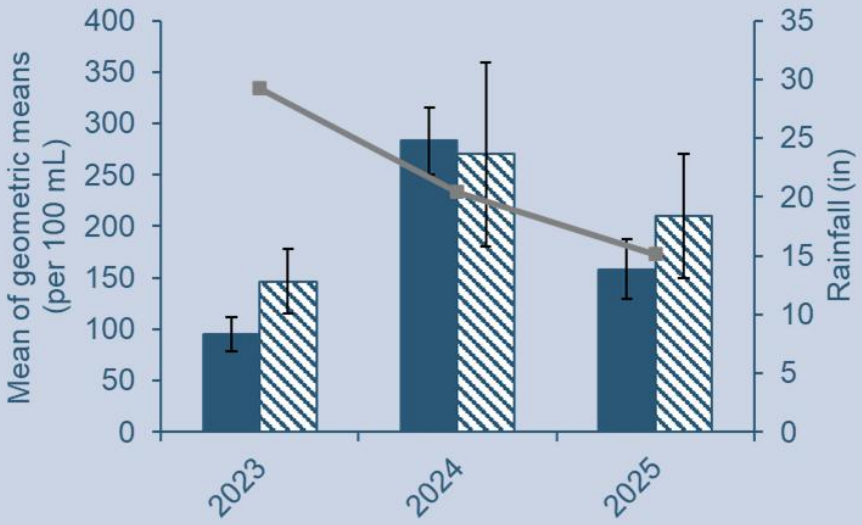


Figure G2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2023-2025 in the Norwalk River watershed and total rainfall from May through September each year (grey squares and line).

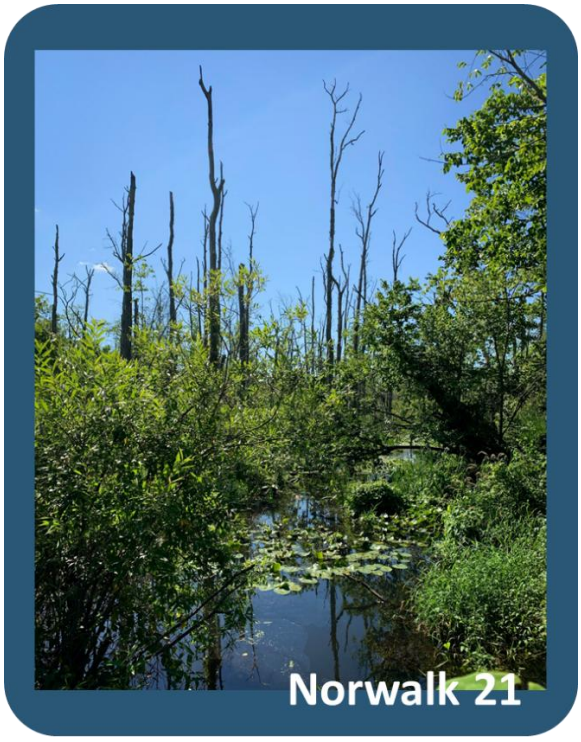
Table G3. Norwalk River watershed *E. coli* and enterococci concentrations (MPN/100mL), geomeans, and percentage of samples exceeding the CT DEEP single sample maximum. Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

(A)

Site	Indicator Bacteria	5/20/2025	5/28/2025	6/10/2025	6/24/2025	7/23/2025	7/31/2025	8/12/2025	9/2/2025	9/10/2025	9/30/2025
Norwalk 23	*E. coli*	45	32	1,011	18	192	12	10	25	179	17
Norwalk 21	*E. coli*	261	365	>4,839	384	209	345	35	166	435	308
Norwalk 19	*E. coli*	48	39	1,120	32	14	31	9	3	83	9
Norwalk 15	*E. coli*	44	43	>2,420	48	91	27	76	27	65	30
Norwalk 13	*E. coli*	308	162	794	297	155	113	10	46	122	140
Norwalk 9.5	*E. coli*	870	159	1,226	391	135	102	409	40	108	276
Norwalk 9	*E. coli*	93	60	1,011	178	488	127	326	108	121	155
Norwalk 6	*E. coli*	99	344	3,973	236	345	107	43	49	81	77
Norwalk 4	*E. coli*	124	80	>2,420	238	45	93	45	35	68	31
Norwalk 2	*E. coli*	118	88	>2,420	313	93	86	141	122	326	120
Norwalk 1	*E. coli*	219	No Data	>4,839	523	126	498	197	88	248	93
Norwalk 0.5	Enterococci	199	183	7,701	801	528	481	341	332	144	85
Norwalk 0.25	Enterococci	243	84	2,909	1,301	552	719	1,726	146	173	120
Rain Accum. (48 hours prior)		0.00	0.00	0.49	0.00	0.00	0.05	0.00	0.00	0.00	0.00

(B)

Site	Indicator Bacteria	5/21/2025	5/28/2025	6/10/2025	6/24/2025	7/8/2025	7/24/2025	8/5/2025	8/19/2025	9/3/2025	9/16/2025	9/30/2025
Norwalk Harbor 1	Enterococci	689	281	3,873	1,842	860	243	780	933	120	63	146
Norwalk Harbor 2	Enterococci	259	336	2,613	1,246	341	121	211	798	63	98	63
Norwalk Harbor 3	Enterococci	336	233	1,860	495	175	10	201	727	74	30	86
Norwalk Harbor 4	Enterococci	350	120	1,153	520	10	62	31	52	31	10	52
Norwalk Harbor 5	Enterococci	41	211	691	520	73	10	41	10	10	<10	20
Norwalk Harbor 6	Enterococci	<10	10	336	31	119	<10	<10	<10	<10	<10	20
Norwalk Harbor 7	Enterococci	52	10	84	63	121	<10	<10	<10	<10	<10	<10
Rain Accum. (48 hours prior)		0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Dissolved oxygen and water temperature: Dissolved oxygen readings within the river were relatively consistent, with the exception of site Norwalk 21, which is located at the outlet of the Great Swamp and has very slow water movement (Figure G3). While the majority of individual dissolved oxygen readings met the CT DEEP minimum criteria, 10 readings were observed below 5 mg/L at freshwater sites Norwalk 21 and Norwalk 19, and three readings were observed below 3 mg/L at saltwater site Norwalk 0.25 throughout the season. The highest mean water temperatures were observed from late-June through August, which correlated with the low dissolved oxygen values (Figure G4). The field meter could not reach the river at site Norwalk 0.5 due to the height of the bridge; therefore, no physical or chemical data were collected for the site. Physical and chemical data were collected in Norwalk Harbor during profile surveys as part of the Unified Water Study and are reported in the Harbor Watch *Harbor Health Study 2025*.

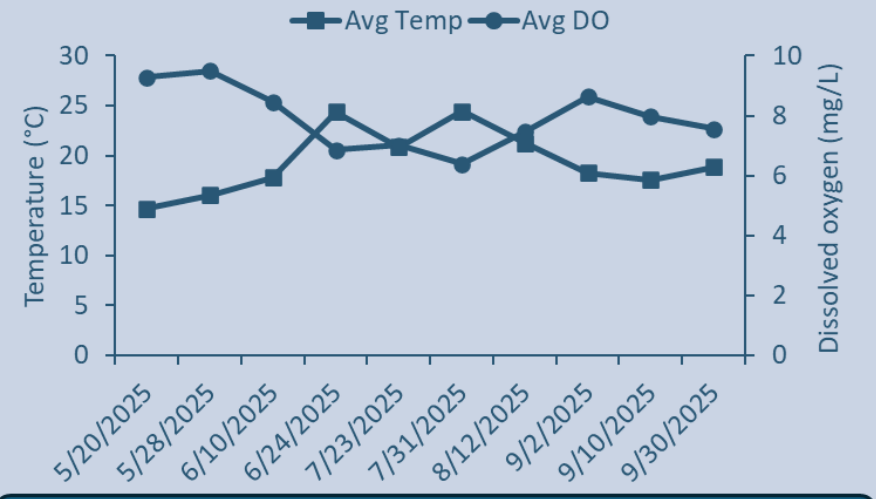


Figure G4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Norwalk River.

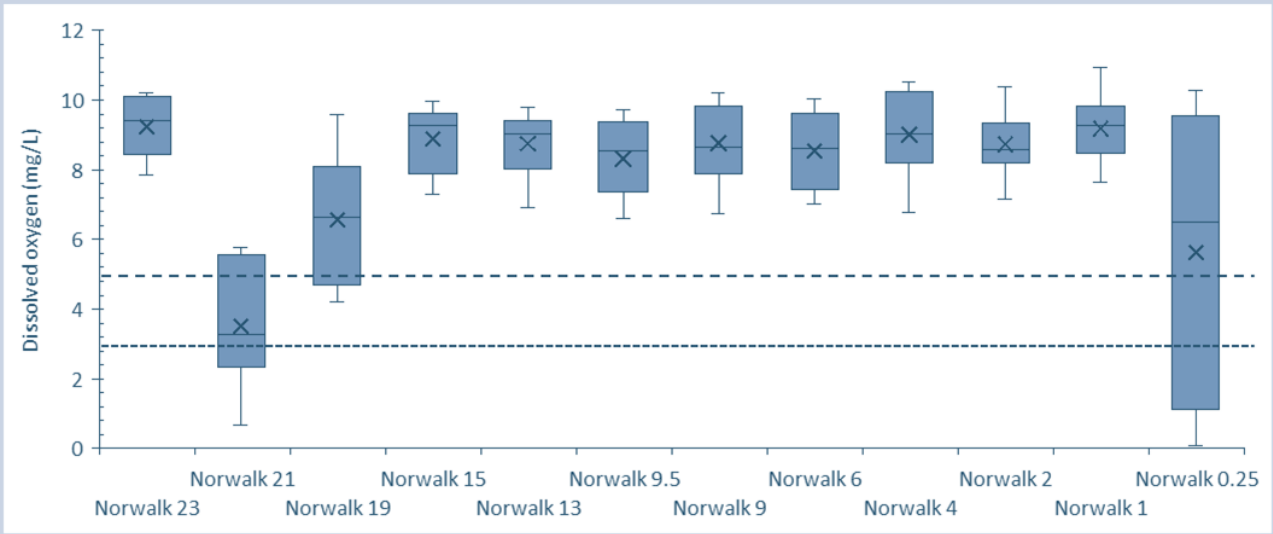


Figure G3. Box plot of dissolved oxygen concentrations at each sampling site in the Norwalk River. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The saltwater sampling sites in this waterway are Norwalk 0.5 and Norwalk 0.25, but no physical and chemical data were collected at Norwalk 0.5.

H. Pequonnock River Watershed

(Pequonnock River and Island Brook)

The Pequonnock River watershed is located primarily in Monroe, Trumbull, and Bridgeport, with small portions in Shelton and Newtown, CT. The watershed is roughly 29 square miles. Land use within the watershed transitions from lightly developed in Monroe to residential in Trumbull and northern Bridgeport, then into commercial and old industrial uses near the mouth at Bridgeport Harbor (Pequonnock River Initiative, 2011). Harbor Watch first monitored the River in 2009 and, since then, has monitored different portions of the Pequonnock River each year. Island Brook is a tributary to the Pequonnock River that starts in Trumbull and flows south through Bridgeport before discharging to the Pequonnock River between Harbor Watch sites Pequonnock 0.75 and Pequonnock 0.5. Since 2022, Harbor Watch has monitored the lower Pequonnock River sites and Island Brook.

Table H1. Site locations for the Pequonnock River watershed.

Site Name	Site location notes
Pequonnock 1	Glenwood Park
Pequonnock 0.75	Island Brook Road
Pequonnock 0.5	River Street
Island 5	Williams Road
Island 4	Lakeside Drive
Island 3	Griffin Avenue
Island 2	Chopsey Hill Road
Island 1	Chopsey Hill Road/Pond Street

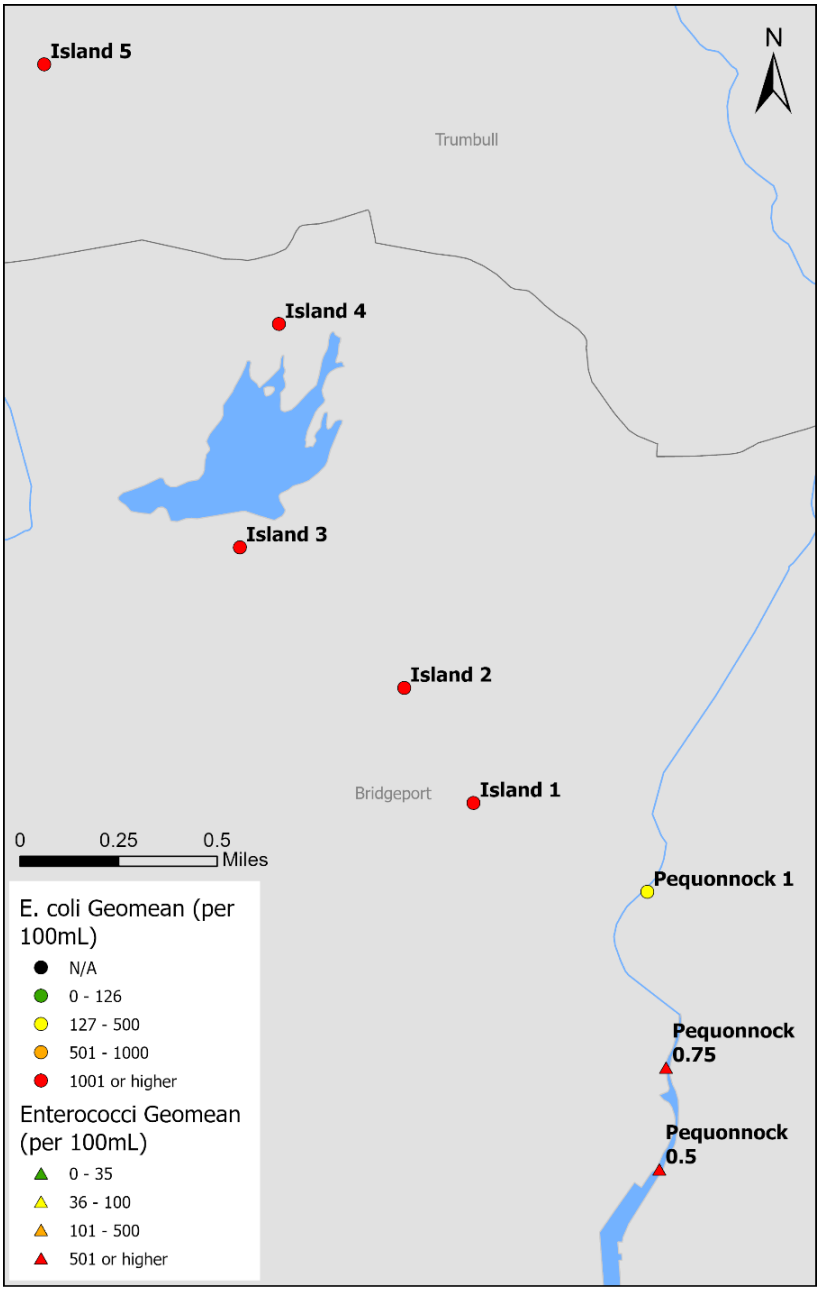


Figure H1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Pequonnock River watershed in 2025.

Indicator bacteria: In 2025, data were collected on ten days. All sites exceeded the CT DEEP geomean criteria for indicator bacteria (Figure H1, Table H2). Additionally, 50% of all samples processed exceeded the CT DEEP single sample maximum criteria (Table H3). Bacteria concentrations in the lower Pequonnock River watershed remain elevated, consistent with findings since 2022 (Figure H2). Results indicate that multiple sources likely exist within the watershed. Harbor Watch is actively working with the City of Bridgeport on pollution track-down projects and has identified hot spot areas.

Table H2. Pequonnock River watershed *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Island 5	*E. coli*	1,055	56%
Island 4	*E. coli*	9,340	100%
Island 3	*E. coli*	1,045	70%
Island 2	*E. coli*	2,686	80%
Island 1	*E. coli*	4,230	100%
Pequonnock 1	*E. coli*	421	50%
Pequonnock 0.75	Enterococci	827	40%
Pequonnock 0.5	Enterococci	994	60%

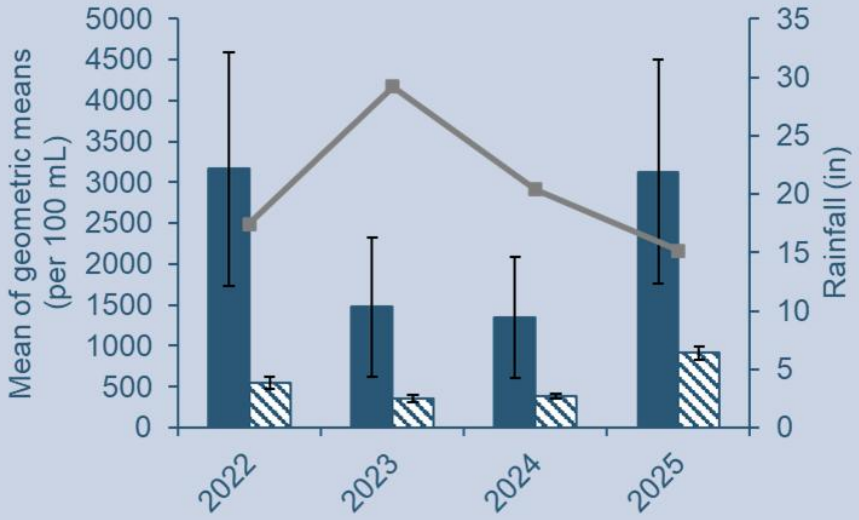
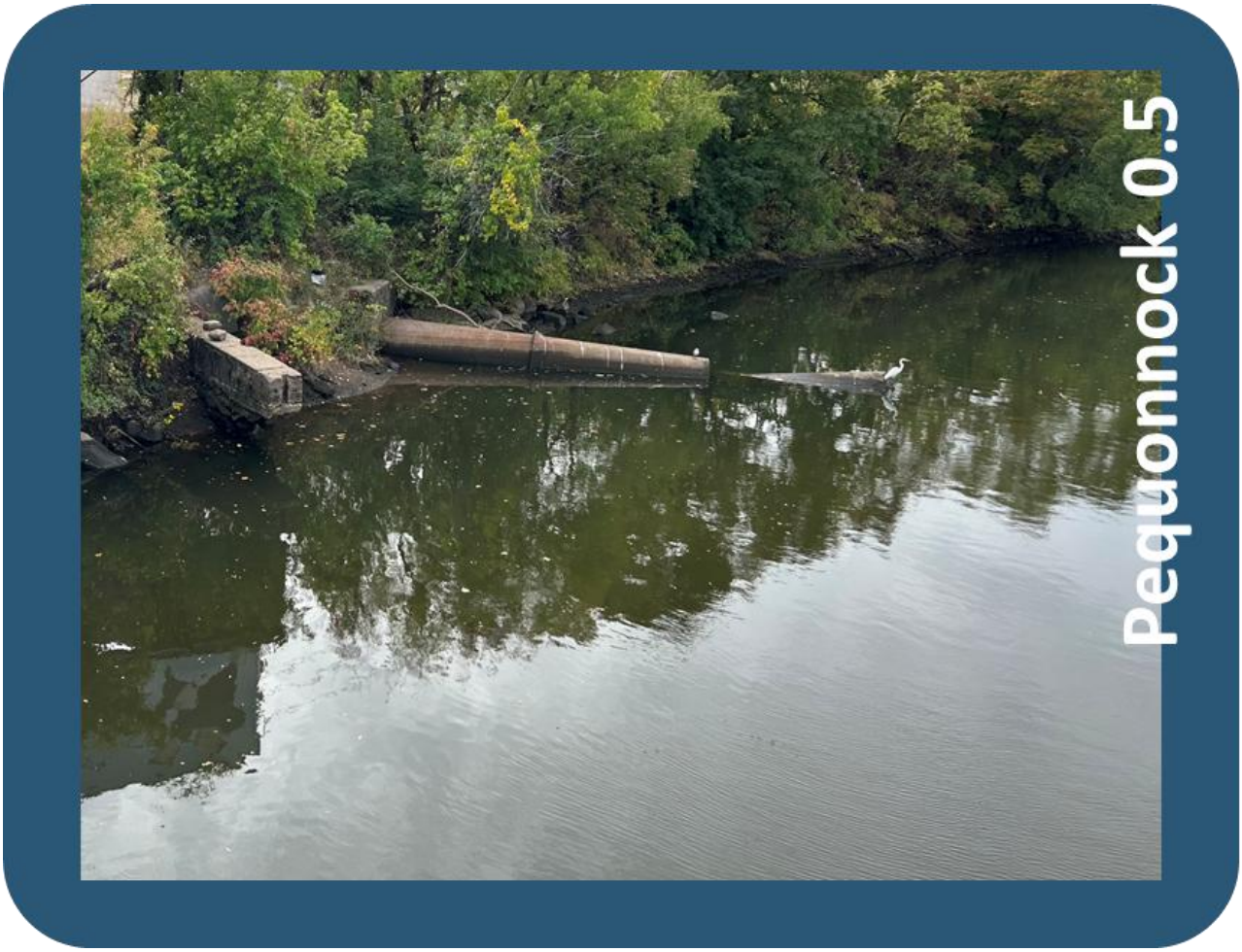


Figure H2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2022-2025 in the Pequonnock River watershed and total rainfall from May through September each year (grey squares and line).

Table H3. Pequonnock River watershed *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/20/2025	5/29/2025	6/9/2025	6/30/2025	7/15/2025	7/28/2025	8/18/2025	8/27/2025	9/17/2025	9/25/2025
Island 5	*E. coli*	93	>4,839	621	542	10,344	857	No Data	568	201	10,462
Island 4	*E. coli*	1,230	6,867	1,652	7,217	3,784	12,976	No Data	>48,392	No Data	>241,960
Island 3	*E. coli*	150	232	209	3,106	1,549	1,587	6,932	2,069	1,164	1,670
Island 2	*E. coli*	225	731	2,069	2,453	12,976	4,813	14,136	298	3,683	>24,196
Island 1	*E. coli*	1,642	19,863	9,769	2,289	2,481	4,106	No Data	987	1,223	>48,392
Pequonnock 1	*E. coli*	365	210	727	35	62	579	980	205	1,300	>9,678
Pequonnock 0.75	Enterococci	109	443	2,603	384	886	275	8,664	233	259	24,196
Pequonnock 0.5	Enterococci	122	833	2,247	305	985	650	>24,196	158	278	19,863
Rain Accum. (48 hours prior)		0.00	0.48	0.69	0.00	1.22	0.02	0.00	0.00	0.00	0.30



Dissolved oxygen and water temperature: Dissolved oxygen readings varied at each site throughout the watershed (Figure H3). While the majority of individual dissolved oxygen readings met the CT DEEP criteria minimums, seven readings were observed below 5 mg/L at sites Island 4, Island 3, Island 2, and Island 1, and seven readings were observed below 3 mg/L at sites Pequonnock 0.75 and Pequonnock 0.5. Higher water temperatures and lower flow during the drought-like conditions are likely contributing factors to the low dissolved oxygen readings observed (Figure H4).

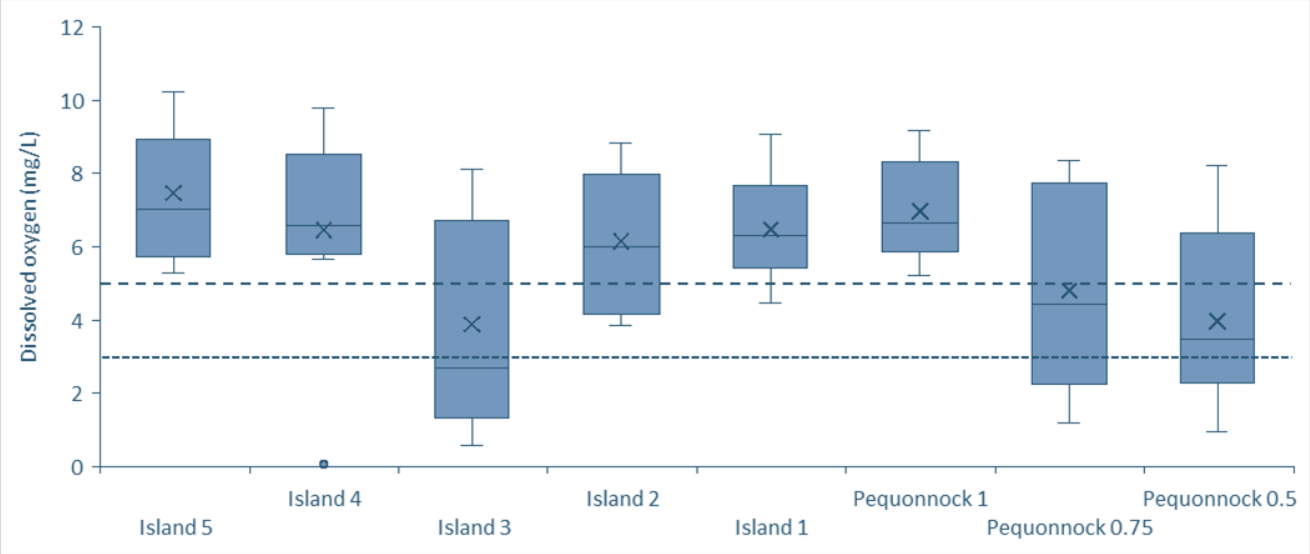


Figure H3. Box plot of dissolved oxygen concentrations at each sampling site in the Pequonnock River Watershed. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The saltwater sampling sites in this watershed are sites Pequonnock 0.75 and Pequonnock 0.5.

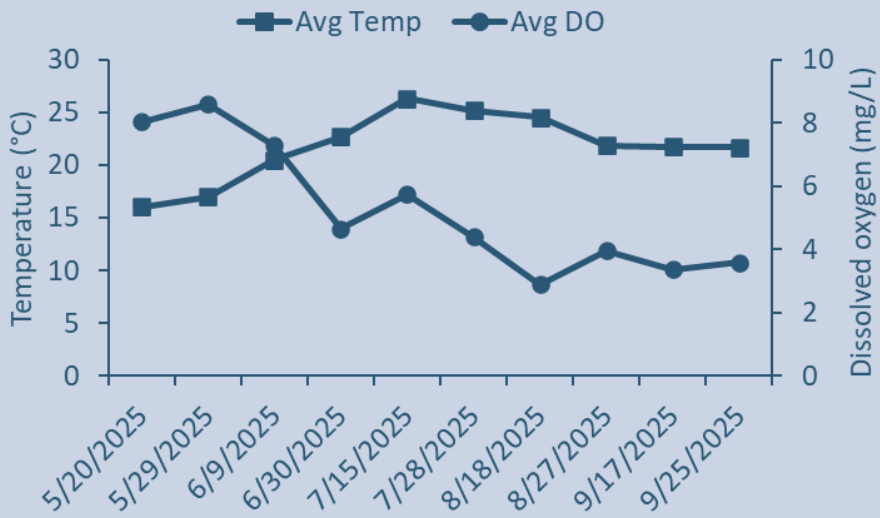


Figure H4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Pequonnock River watershed.

I. Rippowam River Watershed

(Rippowam River and Stamford Harbor)

The Rippowam River watershed covers 37.5 square miles from the New York State border, through parts of New Canaan, Ridgefield, and Stamford, CT, where it discharges into Stamford Harbor. The southern portion of the basin is commercial, industrial, and urban and the northern portion is largely suburban, and forested (CT DEEP, 2011). This river is also known locally as the Mill River. Harbor Watch has monitored portions of the Rippowam River annually since 2017; after 2 years of only monitoring the lower portion, we returned to monitoring the entire system in 2025. In 2024, Harbor Watch began monitoring indicator bacteria data in Stamford Harbor at the prioritization of CT DEEP who had insufficient data to conduct assessments. This work was continued into 2025. Data for the harbor was collected as part of the Pathogen Monitoring Network.

Table I1. Site locations for the Rippowam River watershed.

Site Name	Site location notes
Rippowam 12	Oenoke Ridge
Rippowam 11.5	West Road
Rippowam 11	Dans Hwy
Rippowam 10	Ponus Ridge Road
Rippowam 9	Cascade Road
Rippowam 8	Wire Mill Rd & High Ridge Rd intersection
Rippowam 7	Cedar Heights Road
Rippowam 5	Long Ridge Road
Rippowam 4	Cold Spring Road
Rippowam 3	Bridge Street
Rippowam 2	W North Street
Rippowam 0.5	Richmond Hill Avenue
Stamford Harbor West 3	Pulaski Street
Stamford Harbor West 2	Atlantic Street Dock
Stamford Harbor West 1	Soundwaters Dock
Stamford Harbor East 2	Czescik Marina
Stamford Harbor East 1	Kosciuszko Park

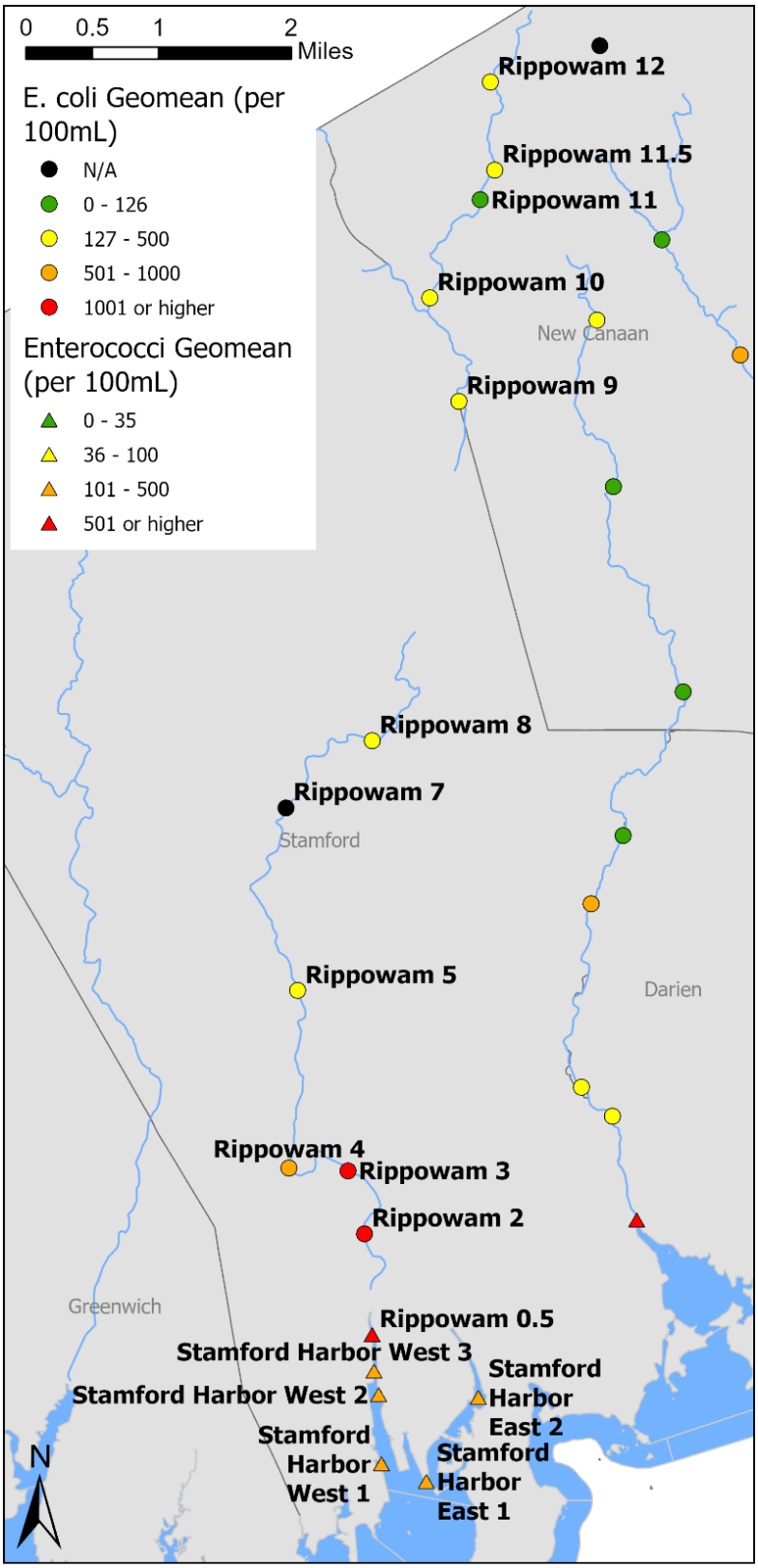


Figure I1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Rippowam River watershed in 2025. Unlabeled sites are Fivemile River (see sub-section C) and Noroton River (see sub-section F).

Indicator bacteria: In 2025, data were collected on nine days. Due to construction, fewer than the minimum eight samples to calculate a geometric mean were collected at Rippowam 7. Fifteen sites in the Rippowam River watershed exceeded the CT DEEP geomean criterion for indicator bacteria in 2025 (Figure I1, Table I2). Additionally, 39% of all samples processed in the Rippowam River watershed exceeded the CT DEEP single sample maximum criteria (Table I3). Bacteria concentrations at the freshwater sites were relatively similar in 2024 and 2025, but a more dramatic increase was observed in the saltwater sites in 2025, driven by very elevated concentrations at the beginning of the monitoring season (Figure I2, Table I3). Monitoring should continue in 2026, and Harbor Watch will work with the City of Stamford to investigate if elevated concentrations persist.

Table I2. Rippowam River watershed *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Rippowam 12	*E. coli*	475	56%
Rippowam 11.5	*E. coli*	250	22%
Rippowam 11	*E. coli*	68	0%
Rippowam 10	*E. coli*	211	11%
Rippowam 9	*E. coli*	240	33%
Rippowam 8	*E. coli*	248	38%
Rippowam 7	*E. coli*	N/A	0%
Rippowam 5	*E. coli*	361	33%
Rippowam 4	*E. coli*	713	44%
Rippowam 3	*E. coli*	1,307	67%
Rippowam 2	*E. coli*	1,296	67%

Site	Indicator Bacteria	Geomean	Exceed SSM
Rippowam 0.5	Enterococci	2,025	78%
Stamford Harbor West 3	Enterococci	324	40%
Stamford Harbor West 2	Enterococci	357	40%
Stamford Harbor West 1	Enterococci	338	40%
Stamford Harbor East 2	Enterococci	114	22%
Stamford Harbor East 1	Enterococci	177	33%

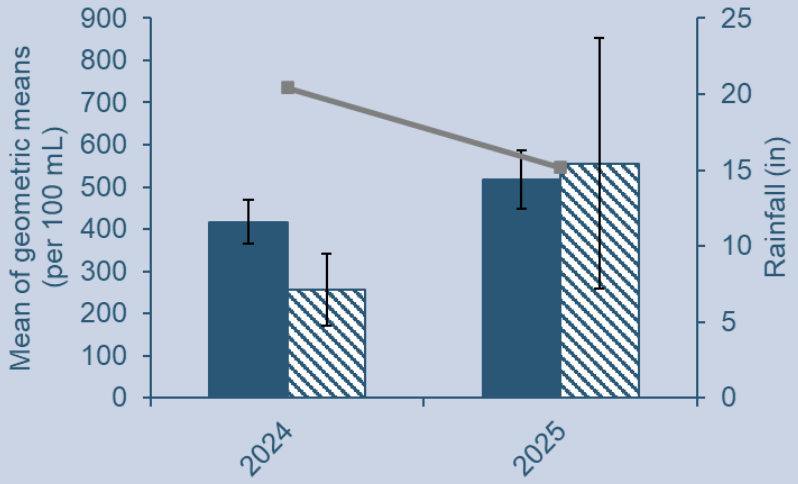


Figure I2. Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2024-2025 in the Rippowam River Watershed and total rainfall from May through September each year (grey squares and line).

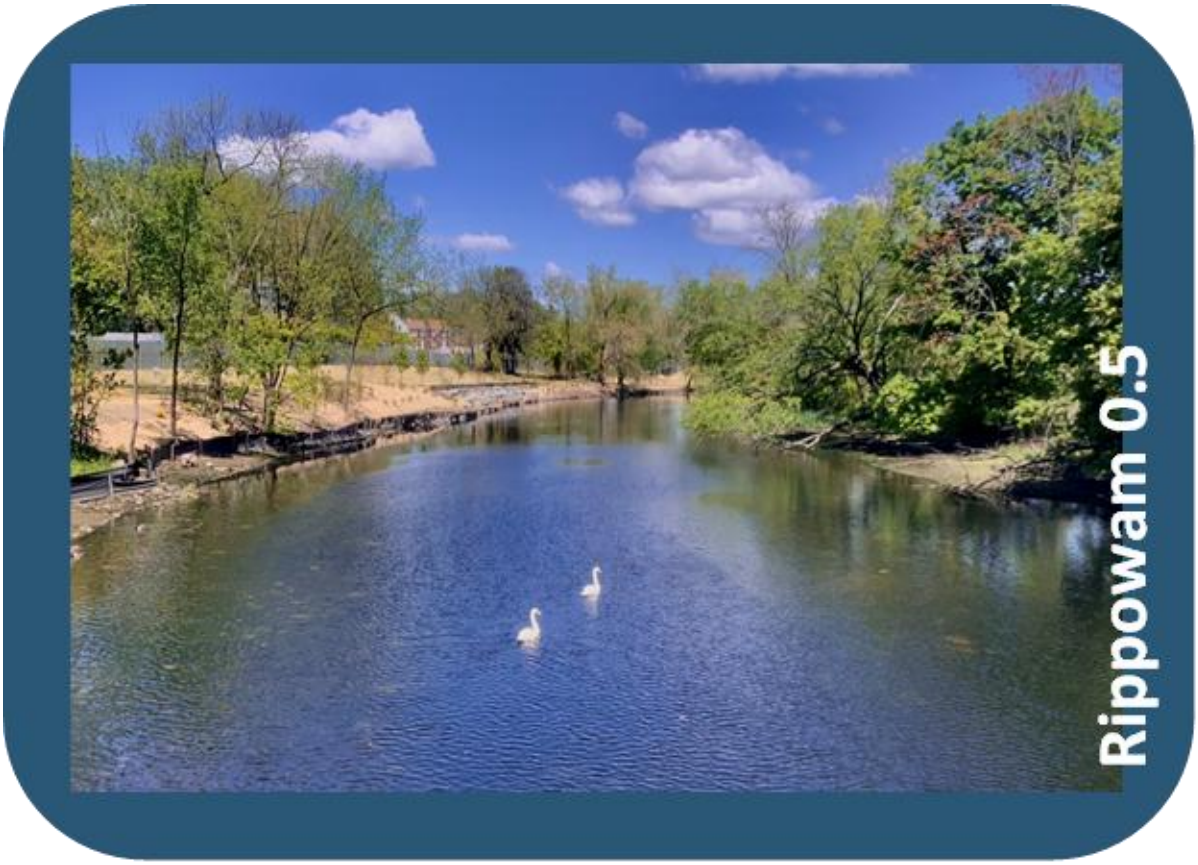
Table I3. Rippowam River watershed *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

(A)

Site	Indicator Bacteria	5/22/2025	6/2/2025	6/12/2025	6/25/2025	7/15/2025	7/29/2025	8/19/2025	8/28/2025	9/25/2025
Rippowam 12	*E. coli*	1,986	181	108	757	1,095	872	104	150	2,827
Rippowam 11.5	*E. coli*	866	166	77	249	1,733	238	435	31	242
Rippowam 11	*E. coli*	18	119	58	214	308	14	22	53	222
Rippowam 10	*E. coli*	138	89	126	123	2,420	137	142	210	449
Rippowam 9	*E. coli*	649	162	120	326	2,420	72	59	64	977
Rippowam 8	*E. coli*	980	135	107	Bridge construction	>2,420	21	70	58	>4,839
Rippowam 7	*E. coli*	Bridge construction		133	Bridge construction					
Rippowam 5	*E. coli*	613	139	172	201	>2,420	210	150	162	2,827
Rippowam 4	*E. coli*	>2,420	311	1,298	472	4,839	181	120	249	3,973
Rippowam 3	*E. coli*	3,973	420	558	1,095	4,839	1,226	690	472	5,654
Rippowam 2	*E. coli*	4,839	374	504	922	4,839	1,095	570	651	6,212
Rippowam 0.5	Enterococci	19,863	323	833	717	8,297	512	3,255	448	>24,196
Rain Accum. (48 hours prior)		0.75	0.01	0.58	0.00	1.22	0.00	0.00	0.00	0.30

(B)

Site	Indicator Bacteria	5/6/2025	6/4/2025	6/10/2025	7/9/2025	7/23/2025	8/7/2025	8/13/2025	9/4/2025	9/15/2025	9/23/2025
Stamford Harbor West 3	Enterococci	3,448	457	7,270	> 24,196	160	20	20	20	842	41
Stamford Harbor West 2	Enterococci	4,611	426	2,481	24,196	109	135	987	<10	195	<10
Stamford Harbor West 1	Enterococci	5,172	110	2,851	> 24,196	109	546	272	41	74	<10
Stamford Harbor East 2	Enterococci	No Data	120	5,475	> 24,196	<10	41	98	10	52	10
Stamford Harbor East 1	Enterococci	5,172	No Data	512	24,196	108	193	10	63	20	<10
Rain Accum. (48 hours prior)		1.52	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Dissolved oxygen and water temperature: Dissolved oxygen readings were more variable at sites in the upper portion of the Rippowam River than the lower portion (Figure I3). Nine individual dissolved oxygen readings fell below the CT DEEP minimum criterion of 5 mg/L at freshwater sites Rippowam 12, Rippowam 11.5, Rippowam 11, and Rippowam 10 starting at the end of July through the rest of the monitoring season. Mean water temperatures and dissolved oxygen were correlated as expected, with water temperatures highest in June and July (Figure I4).

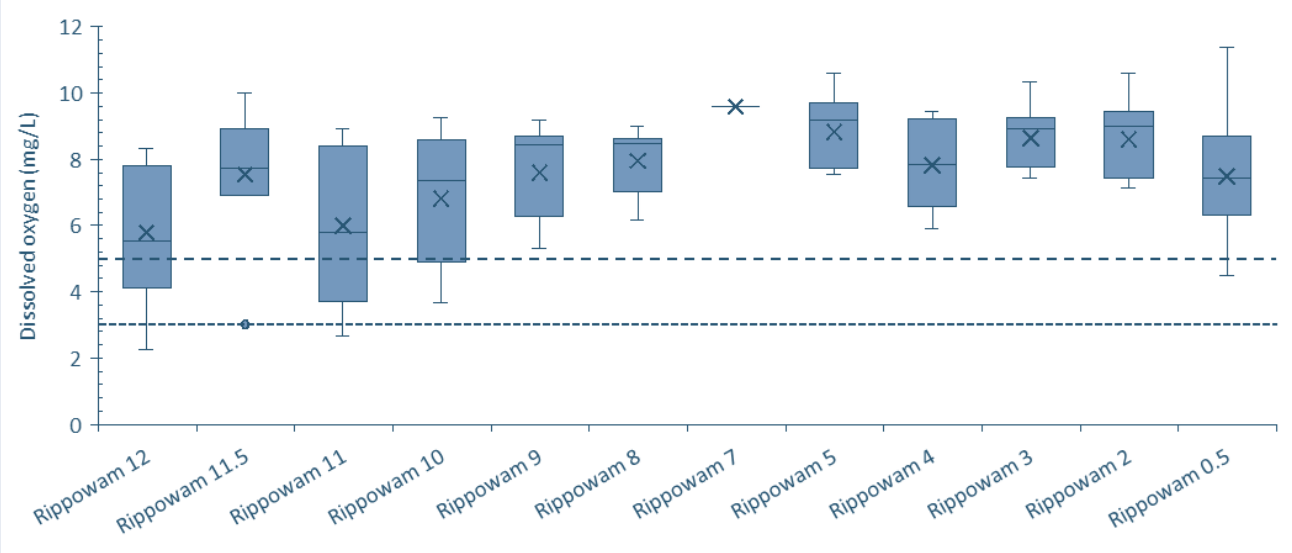


Figure I3. Box plot of dissolved oxygen concentrations at each sampling site in the Rippowam River Watershed. The dashed red line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5 mg/L. The dotted red line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3 mg/L. The only saltwater sampling site in the Rippowam River is Rippowam 0.5. Note that Rippowam 7 has only one data point due to accessibility challenges.

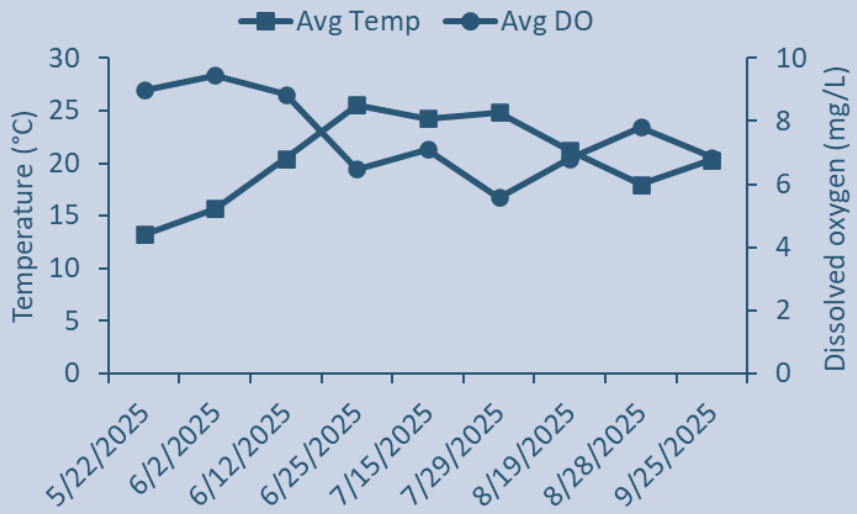


Figure I4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Rippowam River.

J. Sasco Brook Watershed

(Sasco Brook, Great Brook, Unnamed tributary Off Ulbrick Lane)

The Sasco Brook watershed falls within Westport, Fairfield, and Easton, CT. The watershed is approximately 6,600 acres or about 10 square miles. The watershed consists of 55% woods, wetlands, and water surfaces, 32% of low density residential areas and open recreational spaces, 7% urban areas, and 6% agricultural lands (Sasco Brook Pollution Abatement Committee, 2011). Sasco Brook discharges into Long Island Sound at Southport Beach. Harbor Watch has conducted monitoring in various portions of the watershed throughout the years with most recent efforts focused on the lower portion of the watershed where the brook forms the border between Fairfield and Westport, the small unnamed tributary (denoted as Hunt Club in this report) which branches off to the west between Sasco 9 and Sasco 6, and Great Brook which meets Sasco brook upstream of Sasco 9.

Table J1. Site locations for the Sasco Brook watershed.

Site Name	Site location notes
Great 4	Congress Street
Great 3	Dunham Road
Great 2	Merwins Lane
Great 1	Morehouse Lane
Sasco 9	210 Hulls Farm Road
Hunt Club 2	Bulkley Avenue N
Hunt Club 1	Ulbrick Lane
Sasco 7	8 Ulbrick Lane
Sasco 6	Old Road
Sasco 4	Route 1
Sasco 3	408 Greens Farm Road
Sasco 2	32 Westway Road
Sasco 1	Pequot Avenue

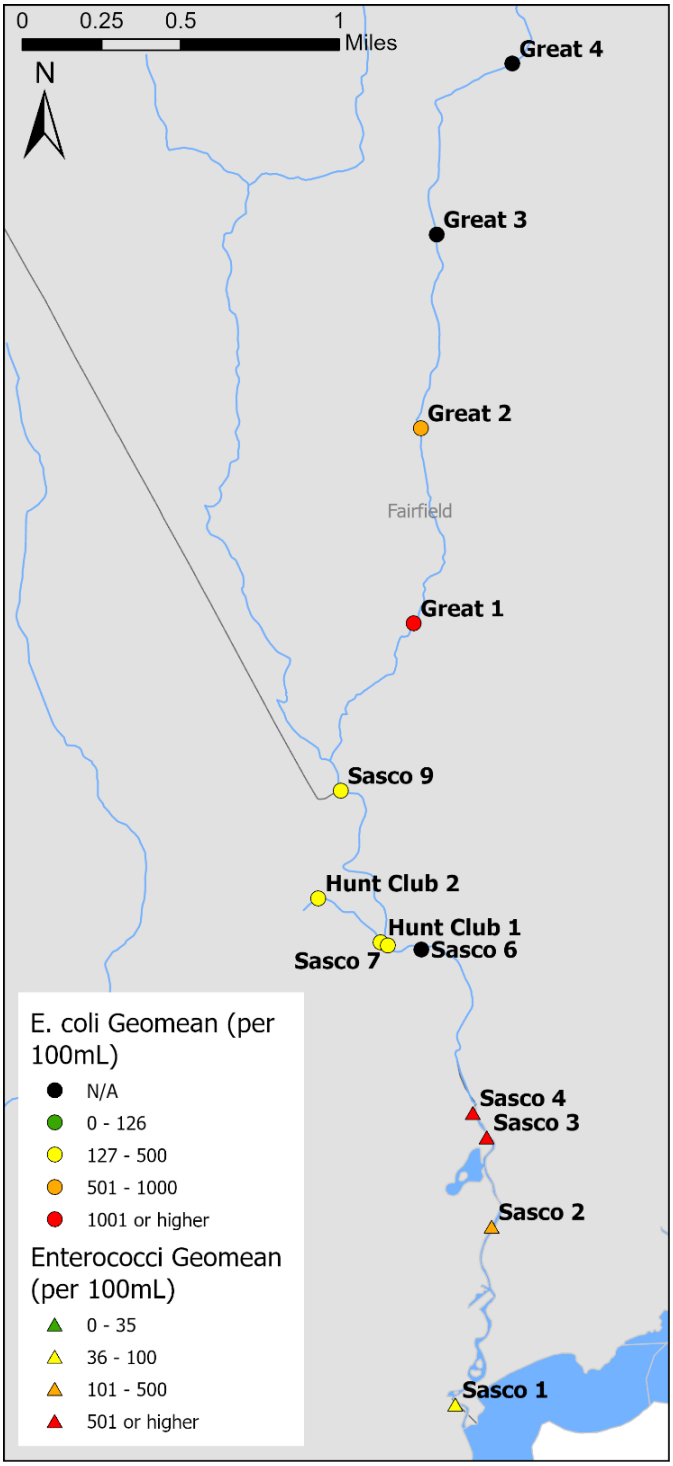


Figure J1. Map of indicator bacteria, *E. coli* or enterococci, geomean concentrations at each site in the Sasco Brook watershed in 2025.

Indicator bacteria: In 2025, data were collected on ten days. All sites except Great 4, Great 3, and Sasco 6 were collected the minimum of eight times. Great 3 and Great 4 dried up from mid-July through the rest of the monitoring season. Sasco 6 was mostly inaccessible due to bridge construction on Old Road. The remaining sites within the watershed all exceeded the CT DEEP geomean criteria for indicator bacteria (Figure J1, Table J2). Additionally, 33% of all samples processed in the watershed exceeded the CT DEEP single sample maximum criteria (Table J3). Bacteria concentrations in the watershed over the last three years have remained relatively consistent (Figure J2).

Harbor Watch conducted paired wet and dry weather sampling at a subset of sites with elevated concentrations in 2024 and 2025. The samples were part of a microbial source tracking study to narrow in on the relative input sources by analyzing the DNA of the bacteria. Samples were analyzed for human, avian, and horse, three prominent species in the watershed. A separate formal report will be distributed with the results from this study as well as suggested next steps.

Table J2. Sasco Brook watershed *E. coli* and enterococci geomeans and percentage of samples exceeding the CT DEEP single sample maximum. Blue cells represent sites that exceeded the CT DEEP geomean criteria.

Site	Indicator Bacteria	Geomean	Exceed SSM
Great 4	*E. coli*	N/A	0%
Great 3	*E. coli*	N/A	29%
Great 2	*E. coli*	617	40%
Great 1	*E. coli*	1,078	88%
Sasco 9	*E. coli*	275	20%
Hunt Club 2	*E. coli*	388	20%
Hunt Club 1	*E. coli*	352	30%
Sasco 7	*E. coli*	223	20%
Sasco 6	*E. coli*	N/A	0%
Sasco 4	Enterococci	533	50%
Sasco 3	Enterococci	674	60%
Sasco 2	Enterococci	191	20%
Sasco 1	Enterococci	79	11%

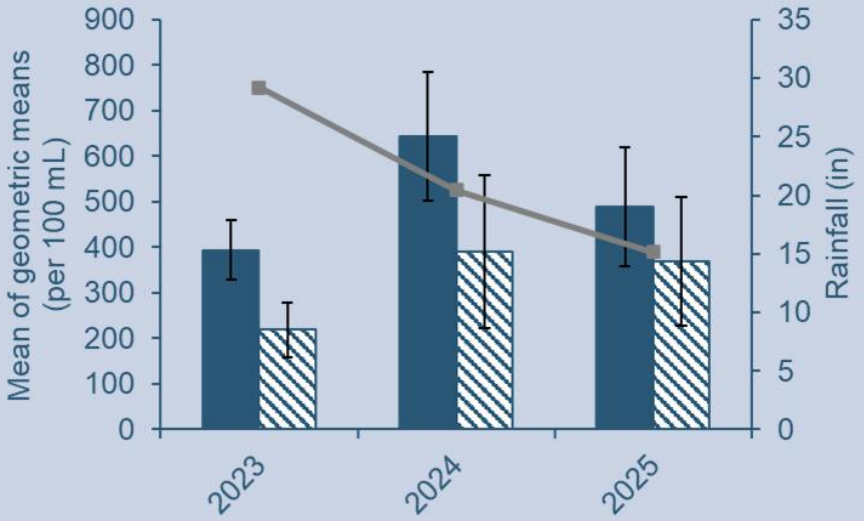
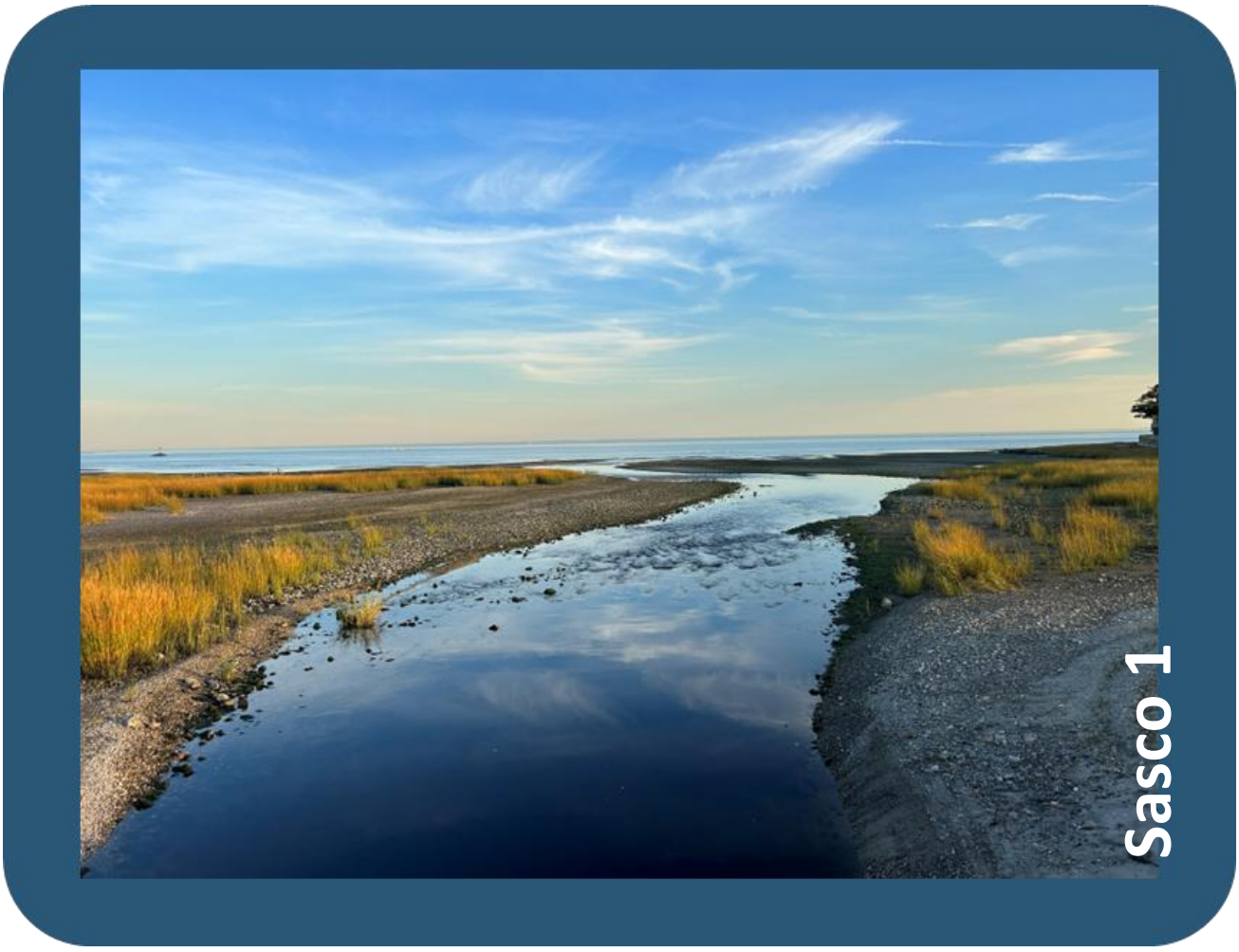


Figure J2. (Right) Mean of freshwater site geomeans (solid bars; *E. coli*) and saltwater site geomeans (striped bars; enterococci) from 2023-2025 in the Sasco Brook Watershed and total rainfall from May through September each year (grey squares and line).

Table J1. Sasco Brook watershed *E. coli* and enterococci concentrations (MPN/100mL). Rainfall data (inches) gathered from the Norwalk Health Department website (Norwalk Health Department, n.d.).

Site	Indicator Bacteria	5/14/2025	5/29/2025	6/17/2025	7/10/2025	7/17/2025	8/5/2025	8/14/2025	8/25/2025	9/8/2025	9/24/2025
Great 4	*E. coli*	108	548	201	No Data						
Great 3	*E. coli*	167	365	162	219	365	>2,420	1,842	No Data		
Great 2	*E. coli*	63	308	345	2,420	>4,839	1,514	2,099	302	542	198
Great 1	*E. coli*	190	No Data	980	No Data	2,420	1,049	1,659	1,733	1,034	1,298
Sasco 9	*E. coli*	142	921	248	276	816	435	201	158	148	167
Hunt Club 2	*E. coli*	488	1,300	517	436	185	36	548	435	921	365
Hunt Club 1	*E. coli*	548	365	108	517	1,300	82	659	206	687	261
Sasco 7	*E. coli*	308	228	49	687	1,203	70	101	61	488	517
Sasco 6	*E. coli*	147	Bridge Construction								
Sasco 4	Enterococci	132	676	474	645	1,726	473	882	816	256	450
Sasco 3	Enterococci	108	554	426	1,553	1,515	536	3,076	464	355	1,187
Sasco 2	Enterococci	120	823	281	529	341	84	327	71	20	331
Sasco 1	Enterococci	275	862	213	No Data	134	<10	201	10	10	86
Rain Accum. (48 hours prior)		0.21	0.48	0.09	0.58	0.02	0	0.39	0	1.23	0



Dissolved oxygen and water temperature: Dissolved oxygen readings in the watershed varied throughout the watershed as well as at individual sites, indicated by the large boxes showing a wide range at each site (Figure J3). While the majority of readings met the CT DEEP minimum criteria, 23 individual dissolved oxygen readings were observed below 5 mg/L at sites Great 4, Great 2, Great 1, Sasco 9, Hunt Club 2, Hunt Club 1, and Sasco 7, and three individual readings were observed below 3 mg/L at saltwater site Sasco 3. Low readings were observed throughout the monitoring season as water temperatures increased and flow simultaneously decreased (Figure J4).

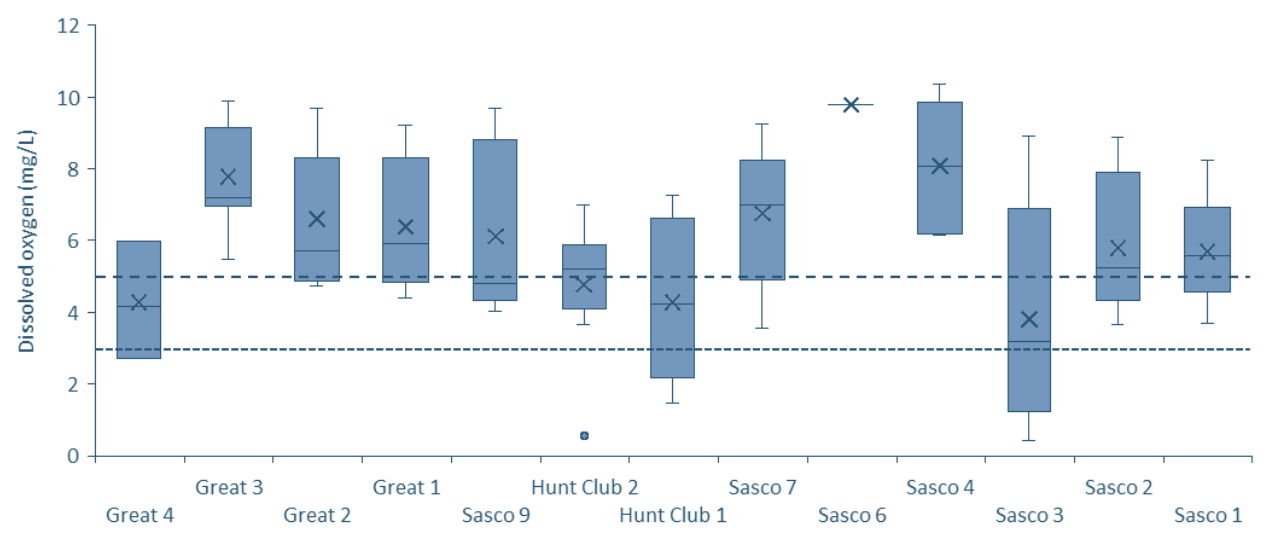


Figure J3. Box plot of dissolved oxygen concentrations at each sampling site in the Sasco Brook watershed. The dashed blue line represents the CT DEEP minimum criterion for dissolved oxygen in freshwater, which is 5mg/L. The dotted blue line represents the CT DEEP minimum criterion for dissolved oxygen in saltwater, which is 3mg/L. The saltwater sampling sites in this watershed are Sasco 4, Sasco 3, Sasco 2, and Sasco 1.

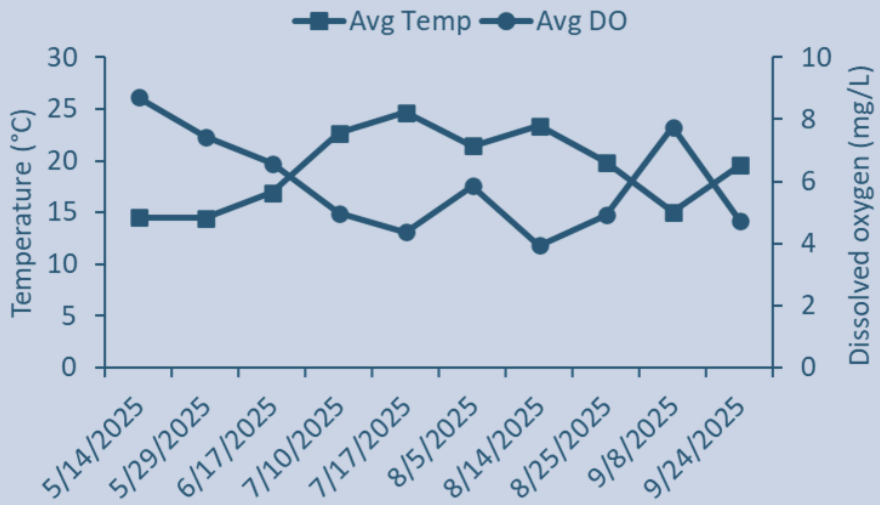


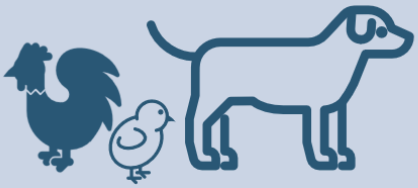
Figure J4. Mean water temperature and mean dissolved oxygen of all sites on each sampling date in the Sasco Brook watershed.

How Can You Help?

Water quality is determined by a number of different factors, some beyond our control. However, there are small things you can do at home to make sure you are not contributing to poor water quality.

Pick up after animals:

Pick up animal waste (even in your own yard) and dispose of in your household trash. When it rains, the animal waste as well as the bacteria it contains is carried into your local storm drain or watercourse.



Maintain your septic:

If you are on a septic system, be sure to have it pumped out and maintained regularly. Also ensure that you do not put heavy weight (like cars) on top of the tank or the leaching field. Damage to either can cause leaks and functional issues.

Don't flush this:

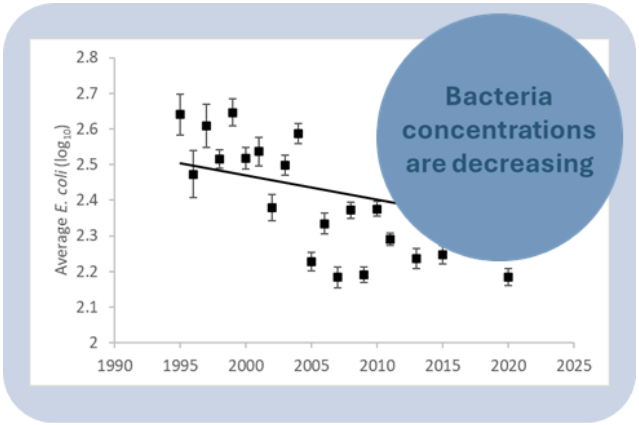
Did you know "flushable wipes" aren't really flushable? The wipes get stuck in the pipes, cause backups, and may result in sewage finding an alternate route through loose joints and into stormwater and groundwater systems. If they happen make it to the treatment plant, they can clog the screening machines and cause the system to malfunction.

Don't pour these:

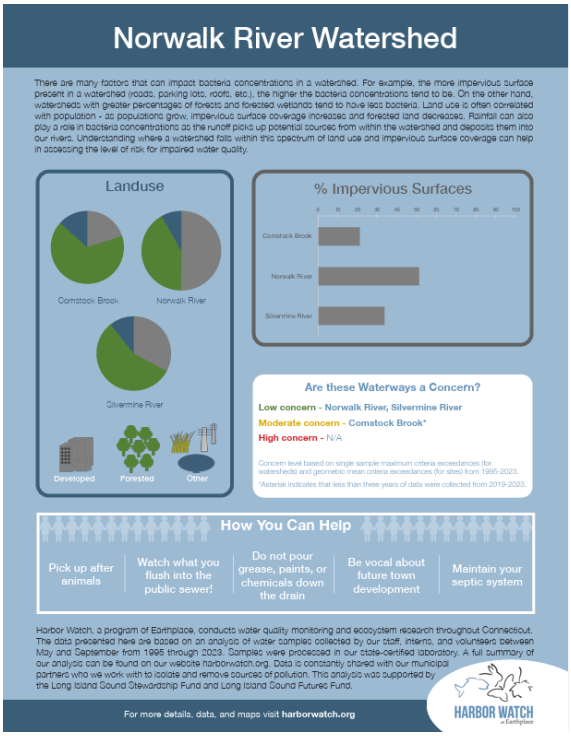
Do not pour grease, oils, paints, or other chemicals down the drain. These items may corrode the pipes, cause backups, and prevent proper septic system function. Clogged sewers and septic systems can lead to nasty backups and property damage. Many towns have disposal days where you can bring these items to be properly disposed of.

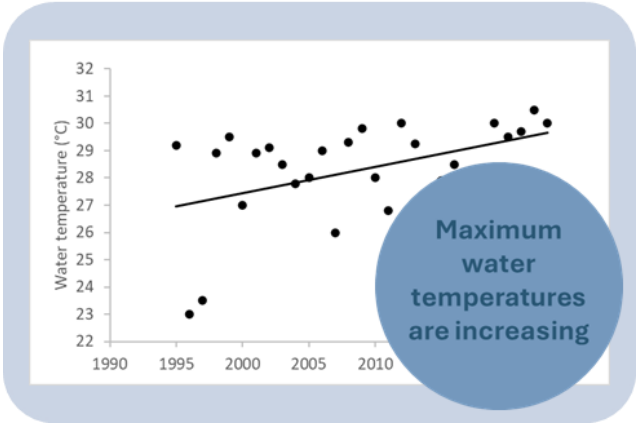
Interested in learning more?

Are you interested in learning more about a particular watershed or changes to water quality in Fairfield County as a whole? Harbor Watch set out to analyze the bacteria, water temperature, and dissolved oxygen data collected from 1995-2023 to help municipal leaders, watershed stakeholders, and the public better understand changes in water quality over time, and how abiotic factors like land use, climate change, and demographic data impact the health of our waterways. The goal of the project was to provide a long-term analysis that could be leveraged so that watershed stakeholders could make informed decisions regarding resource allocation, policy development, and infrastructure planning to preserve and enhance water quality throughout Fairfield County. The outputs of this project include a county-wide summary of the analyses conducted with the entire dataset, a deeper dive into specific watersheds in each municipality, and easy to interpret one-pagers for a snapshot of water quality in each town and specific watersheds throughout the county.



Visit https://earthplace.org/data-projects/ to download the full summaries, one pagers, and raw data.





Citations

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Key Terms and Information

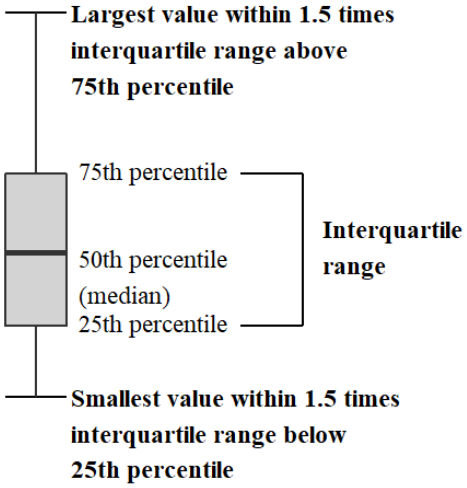
Acronyms and jargon:

- CT DEEP: Connecticut Department of Energy and Environmental Protection
- MPN/100 mL: Most probable number per 100 mL. This is a unit of measurement for bacteria concentrations based on statistics rather than direct counts of specific colonies.
- mg/L: Milligrams per liter. This is a unit of measurement used in this report to quantify dissolved oxygen concentrations.
- Geomean: A geometric mean is a way to average a set of values but reduce the impact of outliers which occur infrequently.
- Entero: Shorthand for enterococci, an indicator bacteria monitored in salt and brackish water.
- *E. coli*: Abbreviation for *Escherichia coli*, an indicator bacteria monitored in freshwater.

Study Site Naming:
Sites are numbered with the lowest number being closest to the mouth of the river where it meets a larger body of water (e.g., Long Island Sound). Sites with the highest numbers are located furthest upstream. The only exception to this is Norwalk Harbor where the lowest numbers are more inland and the highest numbers move out towards Long Island Sound.

Terms/Symbols in Tables:
"N/A" - Indicates that a sample was not taken at that time for reasons including issues with incubation, or no sample was collected.
">" – Indicates that the results exceeded the reporting limit.
"<" – Indicated that the results were less than the reporting limit.

How to Read a Boxplot:



- **Outside value**-Value is >1.5 times and <3 times the interquartile range beyond either end of the box

Graphic above adapted from DeCicco, 2022. In each of the plots in this report the "X" in the box represents the mean.

QAPP Deviation Summary

Quality Assurance Project Plan (QAPP) Report (10/22/2025)
This report includes any deviations from the approved QAPP (RFA #25001). These deviations are listed by the section of the QAPP where the deviation occurred. Any notes from this report that would result in a process change will be updated in future QAPP submissions.

Project Name: Fairfield County Water Quality Monitoring
Monitoring Organization: Harbor Watch, a program of Earthplace, Inc.
10 Woodside Lane, Westport, CT 06880
Approved for: Monitoring Season 2025

1.6 Project/Task Description

- No subset of Ash Creek samples were tested for nutrients or TSS.
- Table 2. Sample location Adjustments: Rippowam 7, Fivemile 3, and Sasco 6 were all dropped due to construction.

2.1 Sampling Design

- On some occasions, when staffing restraints occurred, a team of one would collect samples as opposed to a team of two or more.
- Table 5. Not every site was collected a minimum of 8 times for indicator bacteria: Great 4, Great 3, Rooster 4.5, Bruce 5, Fivemile 10, and New 2. All six of these sites did not meet the minimum criterion due to a lack of flow (or too dry) to collect a sample.
- Table 5. Not every site was collected at least 8 times for dissolved oxygen, temperature, and conductivity: Great 4, Great 3, Rooster 4.5, Bruce 5, Fivemile 10, and New 2. All six of these sites did not meet the minimum criterion due to a lack of flow (or too dry) to collect a sample.