FAIRFIELD COUNTY
RIVER REPORT

Harbor Watch | 2021

Fairfield County River Report: 2021

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This report includes data on:
Ash Creek Watershed, Bruce Brook, Byram River, Deadman's Brook, Farmill River, Fivemile River, Horseneck Brook, Little River, Noroton River, Norwalk River, Pequonnock River, Rippowam River, Sasco Brook, and Saugatuck River.

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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 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 build a passion in our community for nature and the environment through education, experience, and action.

Since its inception, Harbor Watch 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 and has monitored hundreds of sites for a variety of physical and biological parameters.

In 2021, Harbor Watch:

- Studied over 350 field sites in Fairfield County, CT
- Conducted biweekly, May-September monitoring of 14 rivers in 16 towns
- Trained 52 high school and college students in a combination of in-person and virtual education experiences
- Processed over 1600 water samples for bacteria concentration analysis in our laboratory

Visit www.harborwatch.org for more information!

Acknowledgements

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Key Terms and Information

Acronyms:

- CT DEEP: Connecticut Department of Energy and Environmental Protection
- CFU/100 mL: Colony forming units per 100 mL. This is a unit of measurement for bacteria concentrations. A colony is raised from a single bacterium to a visible colony for counting by providing the preferred heat range and media for the required incubation period. These units are appropriate for direct comparison to those in MPN/100mL.
- 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. These units are appropriate for direct comparison to those in CFU/100mL.
- mg/L: Milligrams per liter. This is a unit of measurement, used in this report to quantify dissolved oxygen concentrations.
- µmho/cm: Micromhos per centimeter. This is a unit of measurement, used in this report to quantify conductivity values.

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.

Terms/Symbols in Tables:

- "N/A" - Indicates that a sample was not taken at that time for reasons including broken or lost sample container, stagnant water, inaccessibility due to construction, dry river bed, or other factors.
- ">" – Indicates that the results exceeded the reporting limit.
- "<" – Indicated that the results were less than the reporting limit.
- "Wet" - Rainfall is indicated as "Wet" if ≥ 0.1 inches of rain fell within 2 days prior to sampling.
- "Dry" - Rainfall is indicated as "Dry" if ≤ 0.1 inches of rain fell within 2 days prior to sampling.

Disclaimer: Every effort has been made to ensure the accuracy of the information presented in this report. If you notice anything in this report that you believe may be an error, we welcome that or any other feedback. Please contact us by email at harborwatch@earthplace.org.

Introduction

Harbor Watch is an environmental monitoring, research, and education program based out of Earthplace in Westport, CT. Our mission is to improve water quality and ecosystem health in Connecticut. In this report, we present a study of water quality in rivers throughout Fairfield County conducted in 2021. The goal of this monitoring was to assess the health of each river and to identify areas where sources of sewage pollution may be present using *Escherichia coli* (*E. coli*) or *Enterococci* as indicators.

Since 1986, Harbor Watch has been monitoring water quality throughout Fairfield County. Testing has been conducted both instream and in stormwater systems flowing into Long Island Sound and its tributaries. This report contains data summaries for the 14 rivers we monitored in 16 towns in Fairfield County from May through September, 2021.

This report includes data on 5 water quality parameters: *E. coli*, *Enterococci*, dissolved oxygen, conductivity, and water temperature. *E. coli* and *Enterococci* are indicator bacteria used for the detection of fecal contamination from human or animal sources in freshwater systems and saltwater systems, respectively. Their presence in high concentrations suggests that there are likely also more harmful pathogens present. Dissolved oxygen is an important water quality indicator because many aquatic species rely on it for survival, similarly to how land animals rely on oxygen in the air. When dissolved oxygen concentrations are low, aquatic animals like fish and macroinvertebrates will relocate to higher quality waters or, in some cases, even die. Conductivity is a measure of how easily the water can carry an electrical current by measuring the ionic strength of the water. It can quantify the intrusion of salt water from the tides or other sources of salts and other compounds into a waterway. Temperature is also an important parameter for aquatic species, which can be excluded from a given location if the temperature is too high or too low.

Methods Summary

Each river was visited approximately twice per month from May through September for a total of 10 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 the CT DEEP on 1/20/2021 (RFA #17057).

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, sometimes accompanied by volunteers or student interns. 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 return to the Harbor Watch laboratory, the water samples were analyzed for total coliform and *E. coli* or *Enterococci* using enzyme substrate methods set forth in Standard Methods (SM9223B). *E. coli* concentrations were evaluated using the criteria published in the CT DEEP Surface Water Quality Standards on 10/10/13 (Table 1). Because the rivers we tested do not contain designated swim areas, the "all other recreational uses" criteria will apply. For additional information on methodology, please refer to the approved QAPP.

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	**Class**	**Indicator**	**Criteria**
Designated Swimming	AA, A, B	*Escherichia coli*	Geomean less than 126/100 mL; Single Sample Maximum 235/100 mL
Non-designated Swimming	AA, A, B	*Escherichia coli*	Geomean less than 126/100 mL; Single Sample Maximum 410/100 mL
All Other Recreational Uses	AA, A, B	*Escherichia coli*	Geomean less than 126/100 mL; Single Sample Maximum 576/100 mL
Designated Swimming	SA, SB	*Enterococci*	Geomean less than 35/100 mL; Single Sample Maximum 104/100 mL
All Other Recreational Uses	SA, SB	*Enterococci*	Geomean less than 35/100 mL; Single Sample Maximum 500/100 mL

Results and Discussion

Fairfield County Summary

From May through September 2021, 14 river systems were monitored by Harbor Watch across 16 towns in Fairfield County, CT (Table 2). There were 133 unique sampling locations that were monitored a minimum of 8 times each. Many of these rivers did not meet the state criteria for acceptable bacteria concentrations (Table 3, Figure 1) and are likely acting as conduits for sewage pollution to Long Island Sound.

In the 14 river systems studied, 69% of sites exceeded (i.e., had concentrations indicative of fecal contamination) either the CT DEEP geometric mean criterion (< 126 MPN/100 mL for freshwater sites or < 35 MPN/100 mL for estuarine sites) (Figure 2), the secondary single sample maximum criterion of < 15% of indicator bacteria samples at each site (> 576 MPN/100 mL for freshwater sites or >500 MPN/100 mL for estuarine sites) (Figure 3), or both. The Little River had the fewest exceedances of the CT DEEP criteria for bacteria. There was a 4-way tie for the most exceedances, with 100% of the sites studied on Bruce Brook, Horseneck Brook, Sasco Brook, and Ash Creek Watershed failing either one or both CT DEEP criteria for bacteria (Table 3).

Data were collected on these Fairfield County waterways for multiple reasons. Harbor Watch aims to better understand the ecological health of our watersheds by monitoring dissolved oxygen, conductivity, water temperature, and bacteria concentrations, 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 perform further investigation. Once sources of sewage pollution are identified, Harbor Watch works with our municipal partners to ensure that the issue is fixed. Track-down surveys were conducted on projects in Bridgeport, Darien, New Canaan, Norwalk, Stamford, Stratford, and Westport in 2021. 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. By partnering with municipalities to fix these problems, we have been able to achieve as much as 99% reduction in bacteria concentrations entering our waterways from a single source location. The frequent incidence of failing bacteria concentrations observed over this monitoring season (Figure 1, 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.

Table 2. Percentage of sites studied in each city or town that failed one or both state criteria for allowable levels of indicator bacteria (alphabetical by municipality)

City or Town	Number of sites studied	Failing one or both bacteria criteria	River system studied
Bridgeport	8	100%	Ash Creek Watershed, Bruce Brook, Pequonnock River
Darien	2	50%	Noroton River
Fairfield	6	100%	Ash Creek Watershed, Sasco Brook
Greenwich	19	84%	Byram River, Horseneck Brook
Monroe	4	50%	Farmill River, Pequonnock River
New Canaan	14	64%	Fivemile River, Noroton River, Rippowam River
Norwalk	6	83%	Fivemile River, Norwalk River
Redding	5	0%	Little River
Ridgefield	5	40%	Norwalk River
Shelton	7	43%	Farmill River
Stamford	9	100%	Noroton River, Rippowam River
Stratford	7	100%	Bruce Brook
Trumbull	6	67%	Ash Creek Watershed, Pequonnock River
Weston	9	0%	Saugatuck River
Westport	22	86%	Deadman's Brook, Sasco Brook, Saugatuck River
Wilton	4	25%	Norwalk River, Saugatuck River

Table 3. Percentage of sites studied in each river that failed one or both state criteria for allowable levels of indicator bacteria (alphabetical by waterway)

River System	Number of sites studied	Failing one or both bacteria criteria	Towns/Cities in watershed studied
Ash Creek	12	100%	Bridgeport, Fairfield, Trumbull
Bruce Brook	9	100%	Bridgeport, Stratford
Byram River	10	70%	Greenwich
Deadman's Brook	9	89%	Westport
Farmill River	8	50%	Monroe, Shelton
Fivemile River	10	90%	New Canaan, Norwalk
Horseneck Brook	9	100%	Greenwich
Little River	4	0%	Redding
Noroton River	7	57%	Darien, New Canaan, Stamford
Norwalk River	10	40%	Norwalk, Ridgefield, Wilton
Pequonnock River	8	50%	Bridgeport, Monroe, Trumbull
Rippowam River	12	83%	New Canaan, Stamford
Sasco Brook	9	100%	Fairfield, Westport
Saugatuck River	16	19%	Redding, Weston, Westport, Wilton

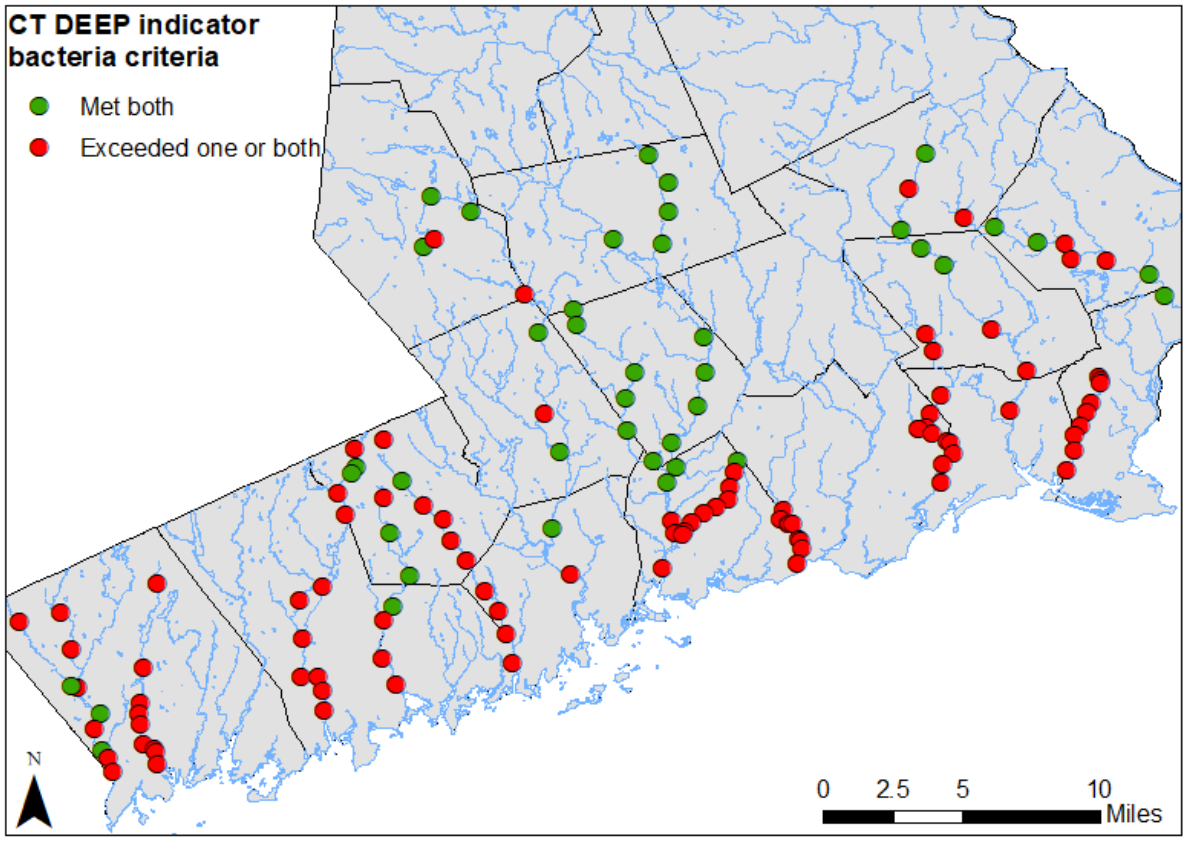


Figure 1. Map of 2021 sampling locations that met both of the CT DEEP indicator bacteria criteria (green; e.g., acceptable bacteria concentrations) or exceeded one or both of the criteria (red; e.g., too much bacteria).

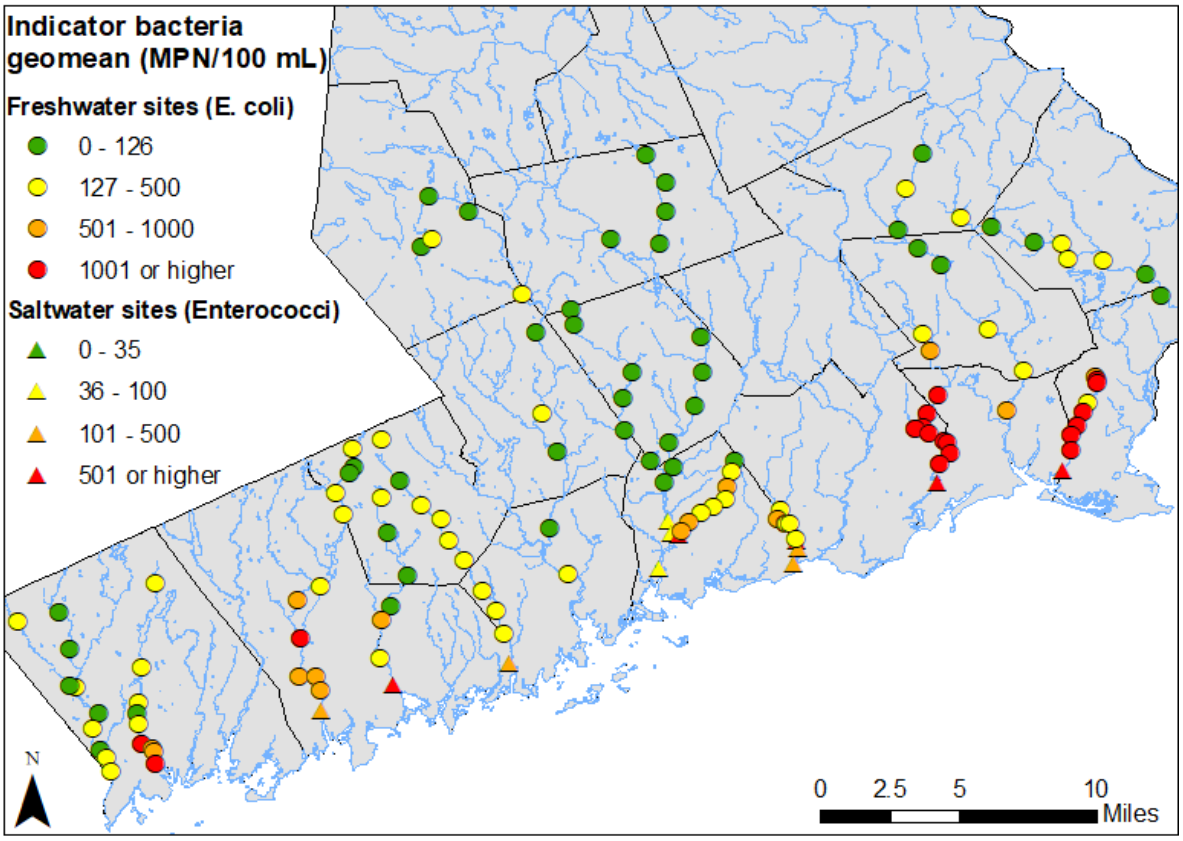


Figure 2. Map of 2021 sampling locations and *E. coli* and *Enterococci* concentrations for each site. The bacteria concentrations for each site were compared to the state criteria for recreational waters (Table 1). Passing sites (green) had a geometric mean less than 126 MPN per 100 mL for *E. coli* or 35 MPN per 100 mL for *Enterococci*.

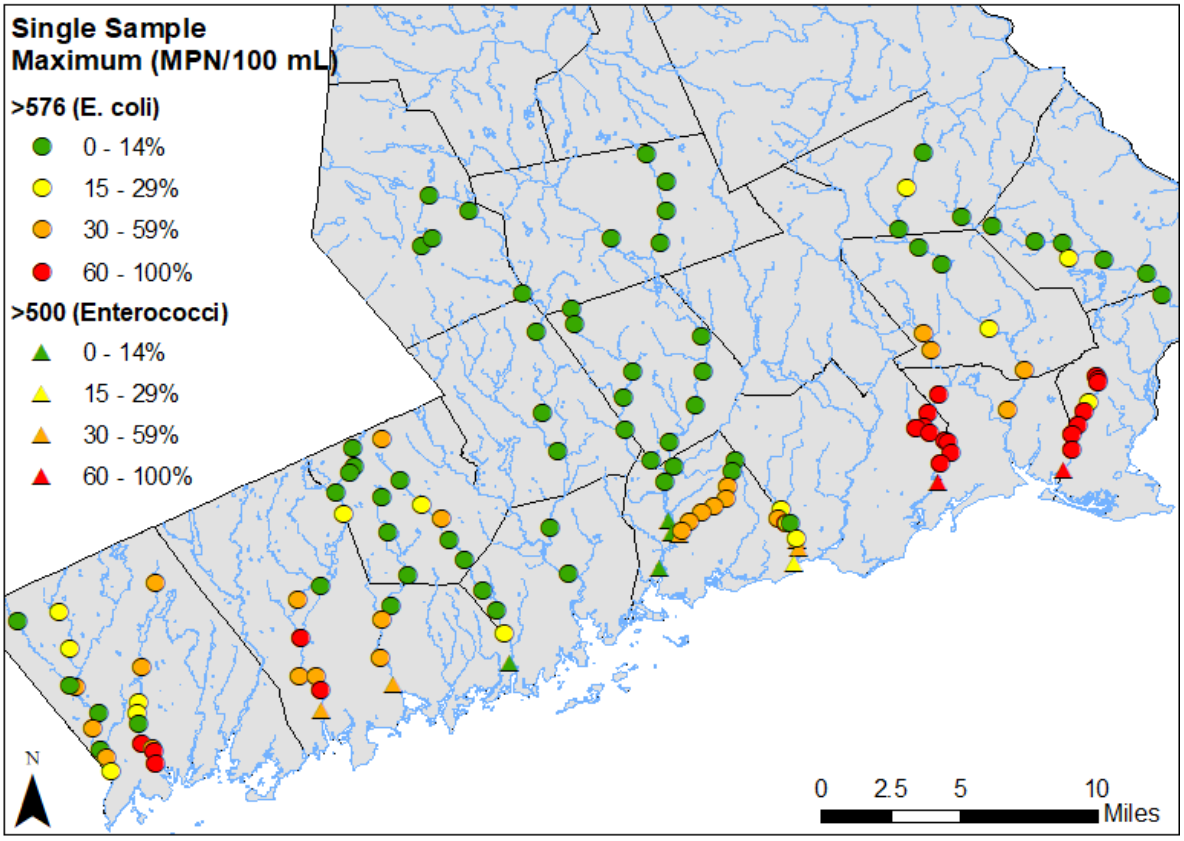


Figure 3. Map of 2021 sampling locations and percentage of *E. coli* and *Enterococci* samples failing the CT DEEP single sample maximum criterion for recreational waters at each site. Passing sites (green) had less than 15% of their samples exceeding 576 MPN per 100 mL for *E. coli* and 500 MPN per 100 mL for *Enterococci.*

The state criterion for acceptable dissolved oxygen levels is set at a minimum of 5 mg/L for freshwater. Five percent of all observed dissolved oxygen readings were below 5 mg/L in 2021. Bruce Brook had the highest frequency of low dissolved oxygen readings with 23% of observed readings below 5 mg/L. Prolonged periods of low dissolved oxygen can be harmful to marine and aquatic organisms.

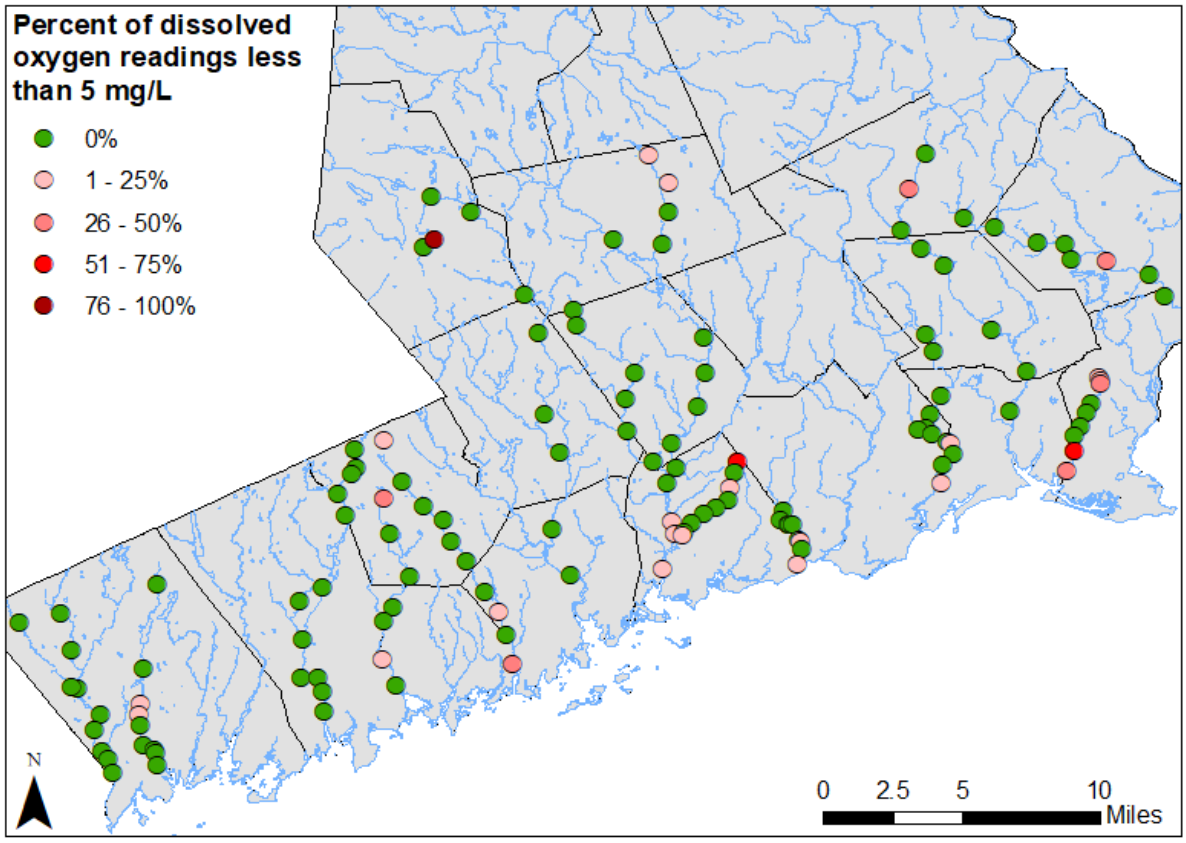


Figure 4. Map of 2021 river sampling locations and percentage of individual dissolved oxygen readings less than the CT DEEP minimum criterion of 5 mg/L.

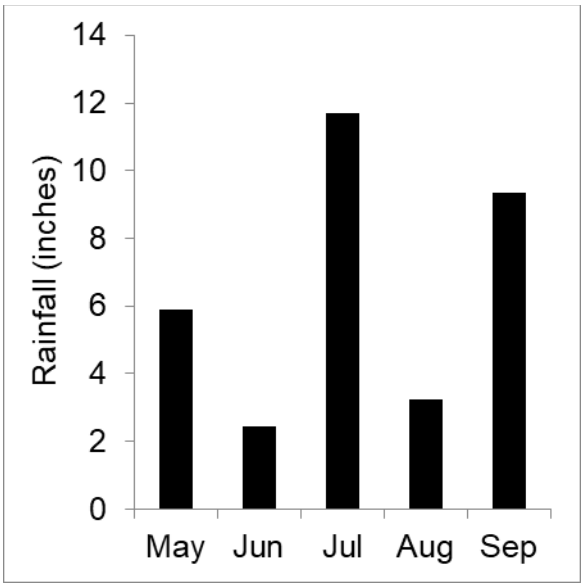
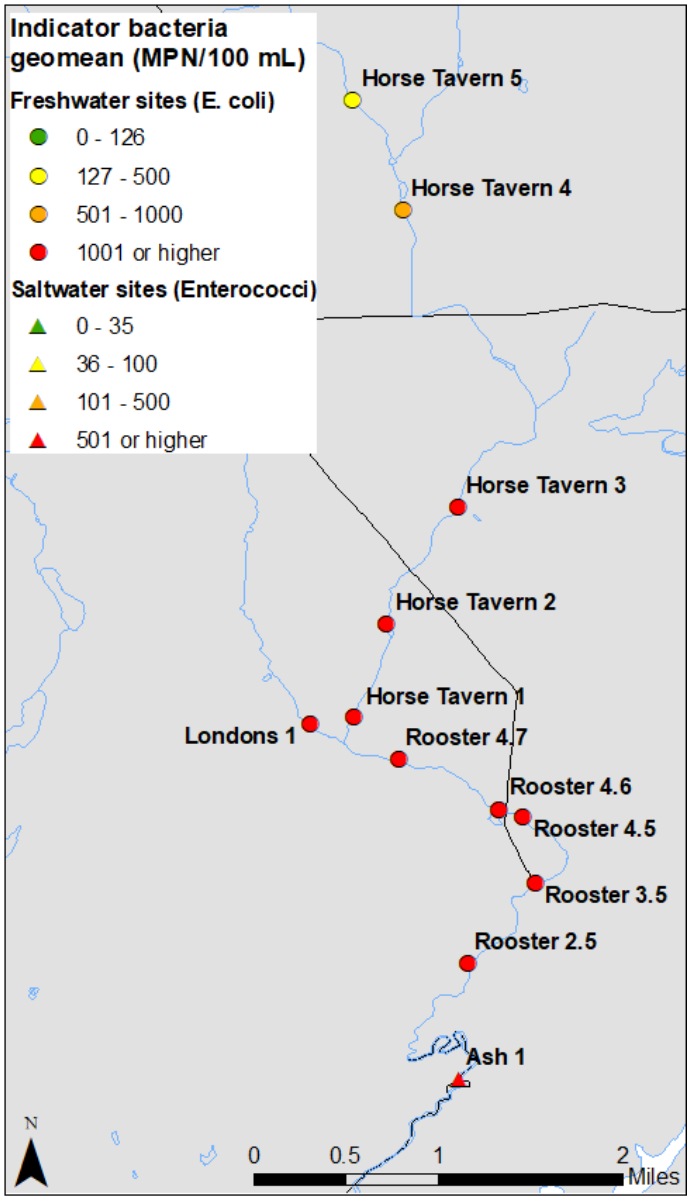


Figure 5. Monthly rainfall totals for 2021 (Norwalk Health Department Rain Gauge).

In the chapters to follow, we present a data summary of each of the 14 river systems monitored by Harbor Watch during 2021. Additional data for each river can be found in an appendix at the end of this report.

1. 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. There are multiple tributaries that discharge to Ash Creek including Rooster River, Horse Tavern Brook, Londons Brook, and Ox Brook. Harbor Watch has been monitoring the Ash Creek Watershed annually since 2016, with the exception of 2019. Unfortunately, the Ash Creek Watershed tied for the highest percentage of study sites that were exceeding the state bacteria criteria of all watersheds monitored in 2021. All of the sites studied failed one or both CT DEEP criteria for bacteria. Dissolved oxygen readings were observed below 5 mg/L at sites Rooster 4.5 on 6/9 and 9/22 and Ash 1 on 6/9 and 8/19. Track-down work was conducted in partnership with the City of Bridgeport in Ash Creek south of site Ash 1. Pollution hot spots have been identified and we are working with the city to locate the sources and remove them from the system. See Appendix 1 for additional data.



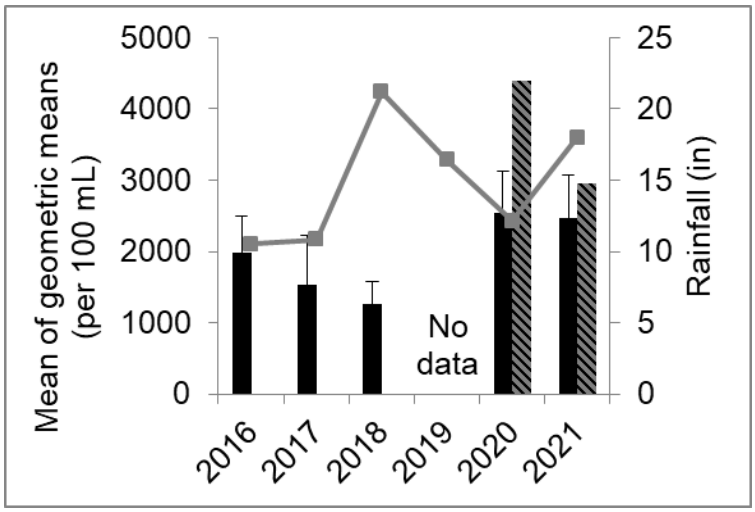
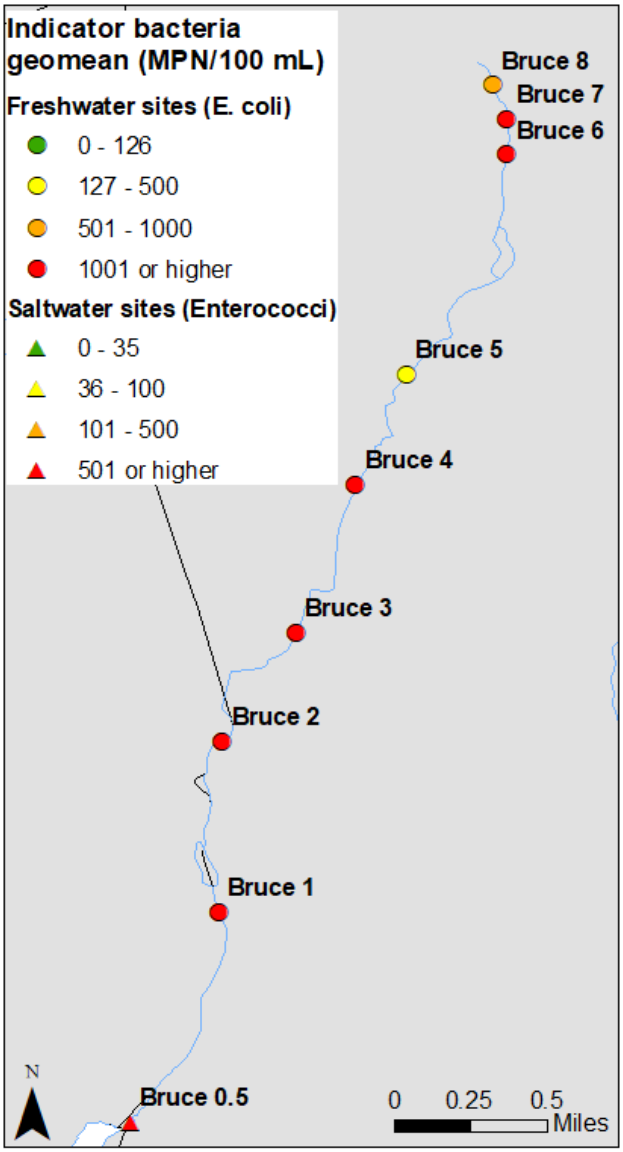


Figure 1.1. (Left) 2021 geometric mean of bacteria concentrations at each site. **Figure 1.2.** (Above) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2016-2021 and total rainfall from May through September each year (grey squares and line).

2. Bruce Brook

The Bruce Brook Watershed includes the Town of Stratford and the City of Bridgeport. It spans approximately 2,199 acres and the brook discharges into Bridgeport Harbor. This land use is divided into 94% urban area, 5% forests, 1% water, and less than 1% agriculture (CT DEEP). The brook itself is channelized within man-made structures through a large portion of its length. Bruce Brook acts as a boundary between these 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. In the fall of 2019, the City of Bridgeport repaired a broken sanitary sewer upstream of Bruce 2, and in 2021, bacteria concentrations were observed to be improved relative to those observed in 2019 (Figure 2.2). Despite these improvements within the watershed, Bruce Brook still tied for the highest percentage of study sites exceeding the state bacteria criteria of all watersheds monitored in 2021. All of the Bruce Brook sites studied failed one or both CT DEEP criteria for bacteria. Harbor Watch continues to work with both the City of Bridgeport and the Town of Stratford on track-down projects to locate additional sources of sewage pollution to the brook. These track-down projects will continue year-round. In 2021, dissolved oxygen mean values met the CT DEEP minimum criterion at all sites, but individual readings frequently dropped below 5mg/L at Bruce 8, Bruce 7, Bruce 6, Bruce 1, and Bruce 0.5. See Appendix 2 for additional data.



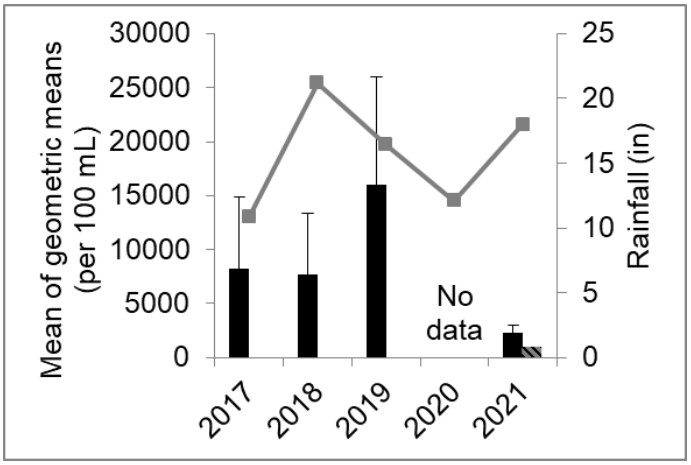
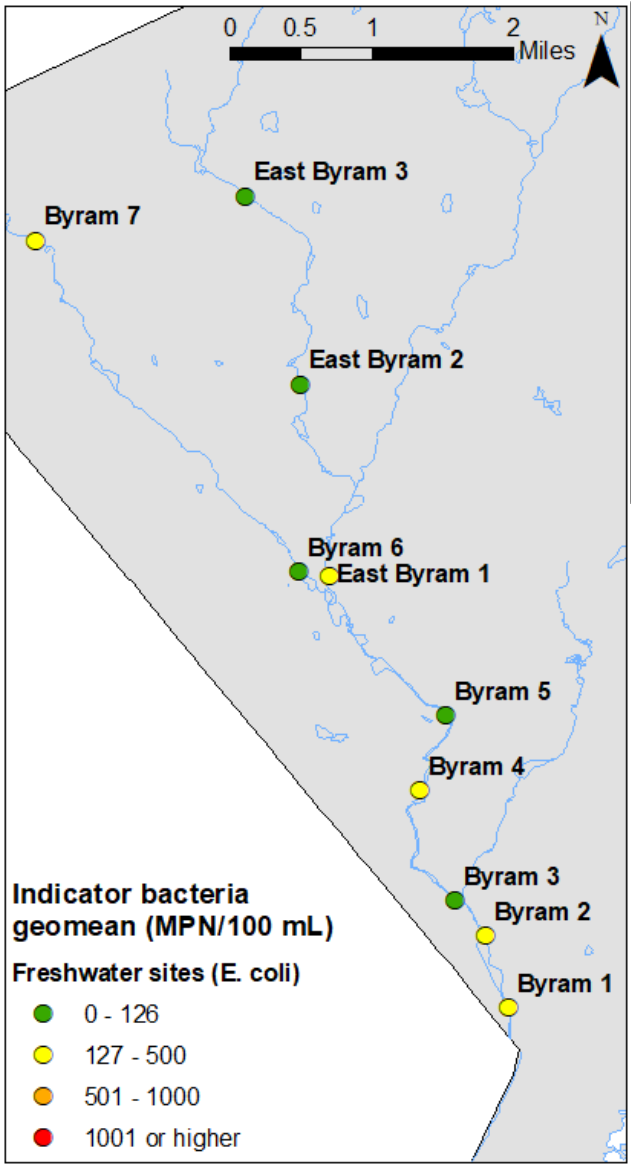


Figure 2.1. (Top) 2021 geometric mean of bacteria concentrations at each site. **Figure 2.2.** (Bottom) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2017-2021 and total rainfall from May through September each year (grey squares and line).

3. Byram River

The Byram River Watershed encompasses portions of 4 communities in Connecticut and New York, but the river is located primarily in Greenwich, CT and Port Chester, NY. The watershed is approximately 12,000 acres or 18.7 square miles and is defined by two main drainage basins, the Byram River and the East Branch of the Byram River. The main stem of the Byram River is approximately 14 miles long. The river begins at the Byram River reservoir and flows south, ultimately discharging to Long Island Sound through Port Chester Harbor. The land use in the watershed is predominantly residential.

2021 marked the 5th year that Harbor Watch collected data on the Byram River since 2016. Seven sites (Byram 1, Byram 2, Byram 4, Byram 7, East Byram 1, East Byram 2, and East Byram 3) exceeded one or both CT DEEP bacteria criteria. Dissolved oxygen values were observed to be above 5 mg/L at all sites on all sampling days. See Appendix 3 for additional data.



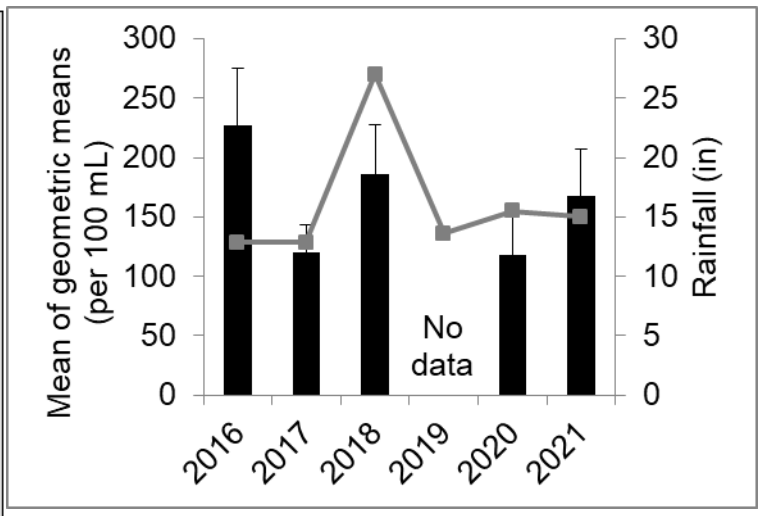
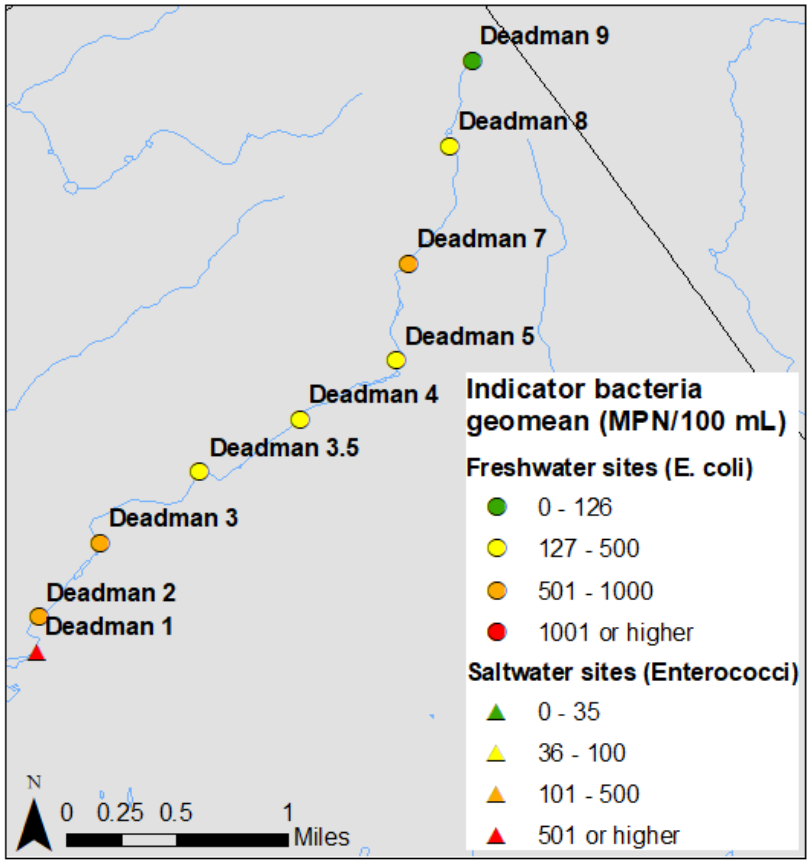


Figure 3.1. (Left) 2021 geometric mean of *E. coli* concentrations at each site. **Figure 3.2.** (Above) Mean of site geometric means (black bars) from 2016-2021 and total rainfall from May through September each year (grey squares and line).

4. Deadman's Brook

Deadman's Brook is a tributary to the Saugatuck River located in Westport, CT. It meets the Saugatuck River between Harbor Watch study sites Saugatuck 0.5 and Saugatuck 0.25 in downtown Westport. While Harbor Watch has done intermittent studies of Deadman's Brook in the past as part of our student education programs, 2018 was the first year that a comprehensive study was conducted during the summer monitoring season. Sampling was conducted again in 2020 and 2021. Unfortunately, in 2021, all but the northernmost site failed either one or both state bacteria criteria. Dissolved oxygen means exceeded 5mg/L at all sites except for Deadman 9 where individual readings dropped below 5mg/L on 6 sampling days. Individual readings also dropped below 5mg/L at Deadman 1 and Deadman 7 on 8/5. Track-down work to locate sources of pollution was conducted at the mouth of the river this summer and will continue in conjunction with our municipal partners in the Town of Westport. During one track-down event, a deceased mitten crab (*Eriocheir sinensis*) was discovered in the river near Myrtle Avenue. This is an invasive species that has been observed in numerous Fairfield County waterways in 2021 and was reported to the CT DEEP. See Appendix 4 for additional data.



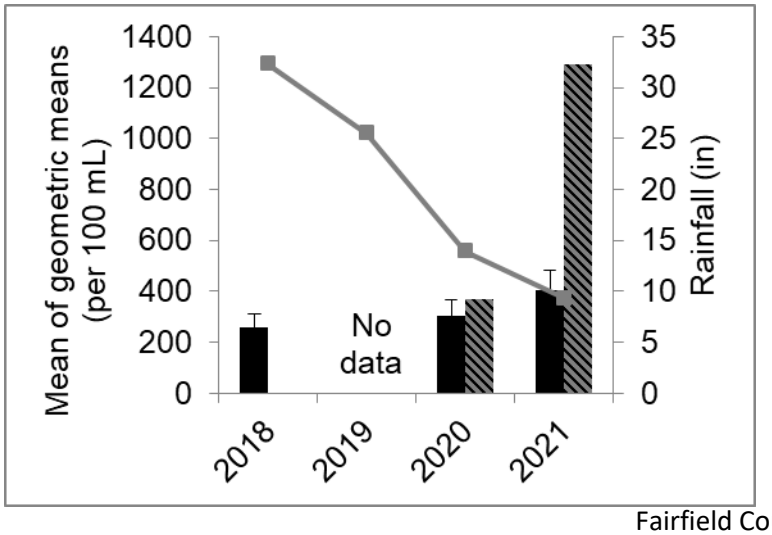
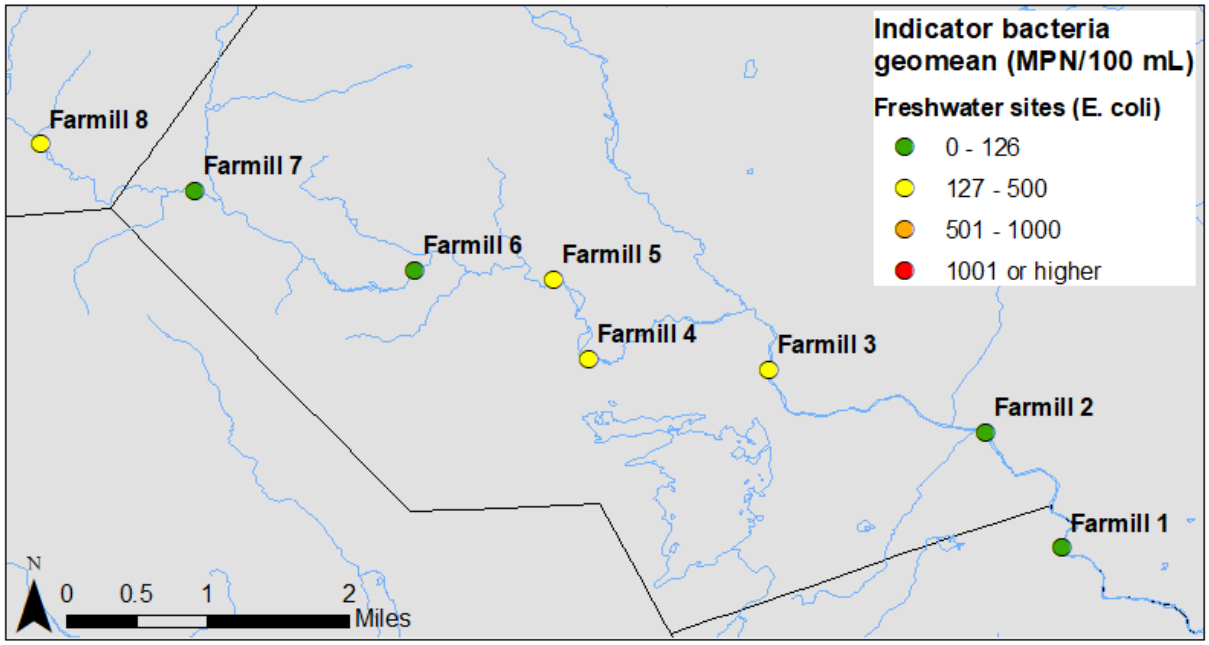


Figure 4.1. (Top) 2021 geometric mean of bacteria concentrations at each site. **Figure 4.2.** (Bottom) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2018-2021 and total rainfall from May through September each year (grey squares and line).

5. Farmill River

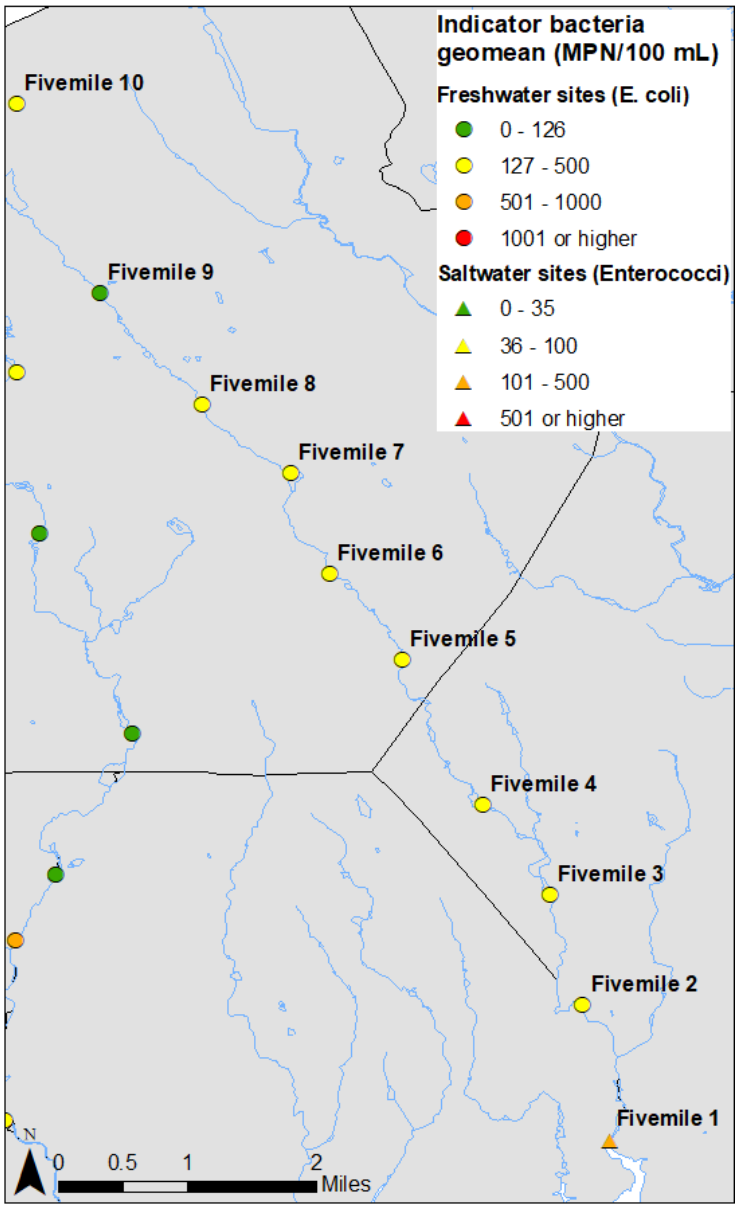
The Farmill River Watershed is located in four municipalities: Monroe, Shelton, Stratford, and Trumbull, CT. The watershed is 9,657 acres and the river discharges into the Housatonic River. The land use includes 52% urban area, 43% forest, 3% water, and 2% agriculture (CT DEEP). Harbor Watch first monitored the Farmill River in 2017. During that monitoring season, the water quality conditions observed were not indicative of major sources of sewage pollution to the watershed. In 2021, we revisited the watershed to assess any changes in water quality. Four study sites exceeded one or both of the state bacteria criteria. Individual dissolved oxygen readings fell below 5mg/L at site Farmill 3 on 6/8, 6/22, 6/28. See Appendix 5 for additional data.



	2017 Geometric mean	2021 Geometric mean
Farmill 8	218	136
Farmill 7	112	82
Farmill 6	37	18
Farmill 5	200	214
Farmill 4	72	251
Farmill 3	128	146
Farmill 2	107	125
Farmill 1	200	117

Figure 5.1. (Above) 2021 geometric mean of *E. coli* concentrations at each site. **Table 5.1.** (Left) Comparison of site geometric means from 2017 and 2021.

6. Fivemile River

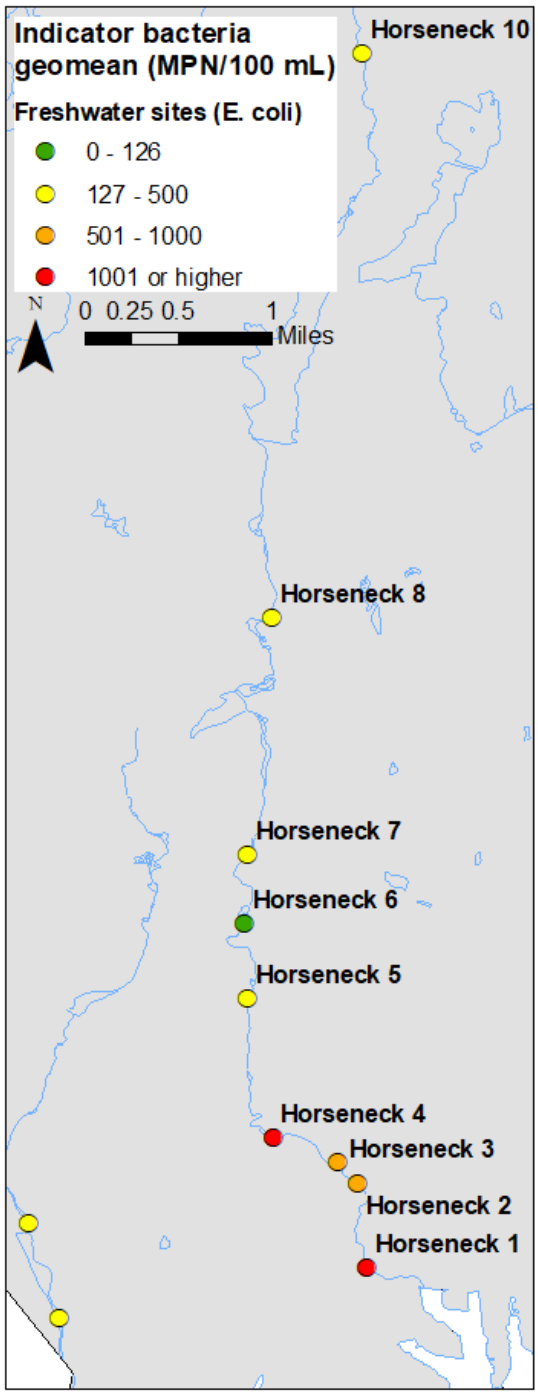


The Fivemile River Watershed includes approximately 7,995 acres of land and extends from Pound Ridge, NY through New Canaan, Norwalk, and Darien, CT before ending at Fivemile River Harbor. Land use in the watershed consists of 70% urban, 26% forest, 3% water, and 1% agriculture (CT DEEP). Harbor Watch has monitored the Fivemile River in years prior, and the river was last monitored in its entirety in 2017. In 2021, all sites except Fivemile 9 exceeded one or both state bacteria criteria. All sites had mean dissolved oxygen values above 5mg/L, but individual readings fell below the state minimum at Fivemile 1 on 6/23, 7/13, 8/10 and 8/17, Fivemile 3 on 6/23, and Fivemile 10 on 8/17. See Appendix 6 for additional data.

	2017 Geometric mean	2021 Geometric mean
Fivemile 10	107	266
Fivemile 9	104	69
Fivemile 8	81	177
Fivemile 7	364	470
Fivemile 6	279	169
Fivemile 5	267	159
Fivemile 4	170	207
Fivemile 3	172	137
Fivemile 2	273	211
Fivemile 1	243	156

Figure 6.1. (Left) 2021 geometric mean of bacteria concentrations at each site. Unlabeled sites are located on the Noroton River (chapter 9). **Table 6.1.** (Right) Comparison of site geometric means from 2017 and 2021. Note that Fivemile 1 was analyzed for *E. coli* in 2017 and *Enterococci* in 2021.

7. Horseneck Brook



Horseneck Brook is located in Greenwich, CT. The northern part of its watershed is largely residential, with some schools and golf courses. Closer to the harbor, the land use is dominated by higher density single and multi-family homes and businesses. Horseneck Brook discharges into Greenwich Harbor in central Greenwich. Harbor Watch previously monitored Horseneck Brook in 2018 and 2019. Horseneck Brook tied for the highest percentage of sites exceeding the state bacteria criteria of all watersheds monitored in 2021. In 2021, all sites exceeded one or both of the state bacteria criteria. Individual dissolved oxygen values dropped below 5mg/L at Horseneck 6 on 6/29 and Horseneck 7 on 6/14 and 7/22. Harbor Watch is working with municipal partners on a plan to conduct pollution track-down between Horseneck 5 and Horseneck 4. See Appendix 7 for additional data.

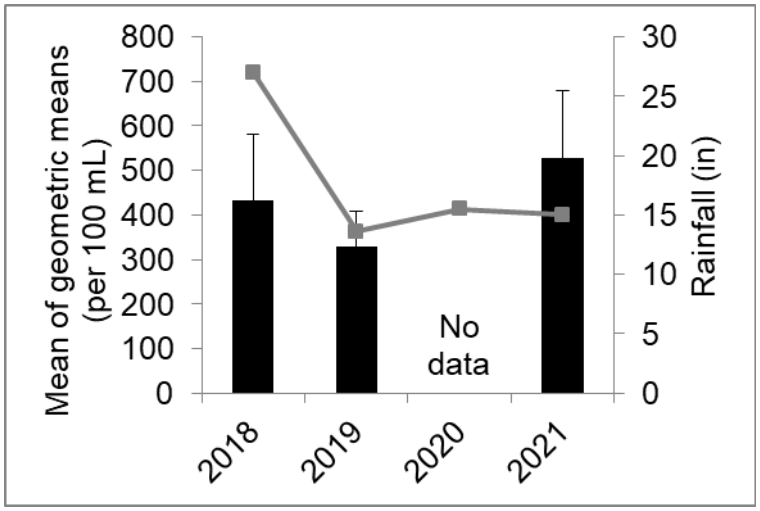
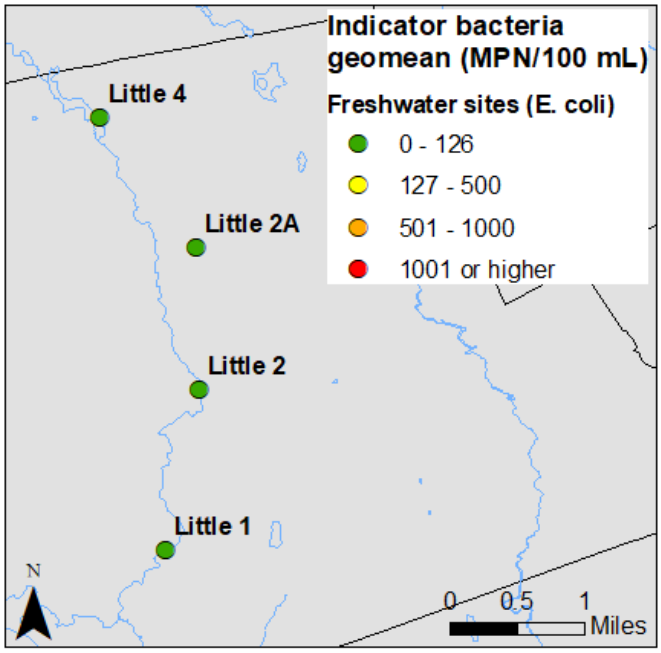


Figure 7.1. (Left) 2021 geometric mean of *E. coli* concentrations at each site. **Figure 7.2.** (Right) Mean of site geometric means (black bars) from 2018-2021 and total rainfall from May through September each year (grey squares and line).

8. Little River

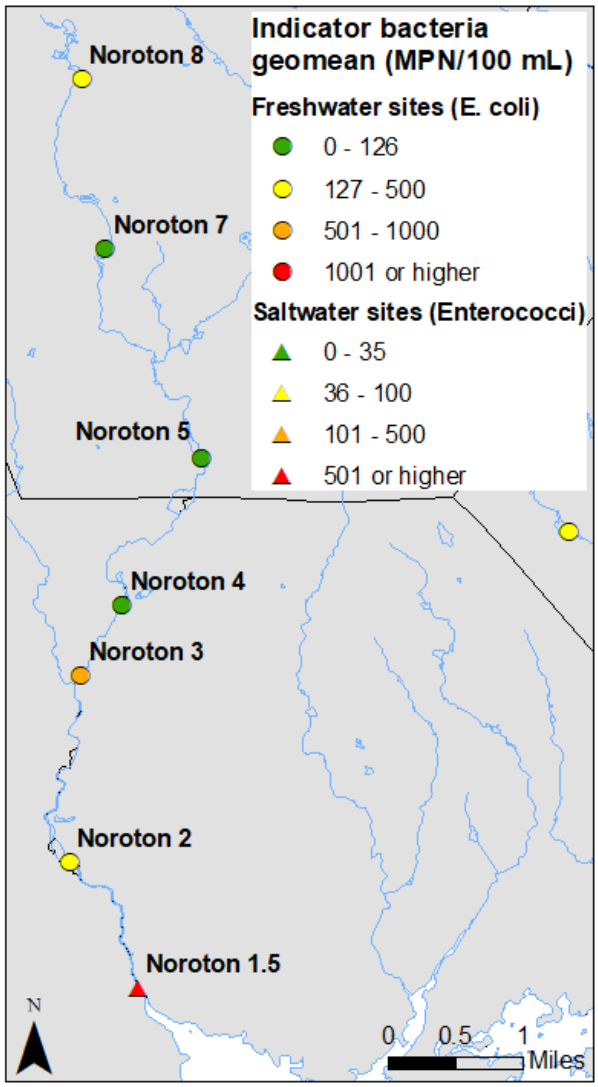
Little River is a tributary to the Saugatuck River located in Bethel and Redding, CT. Little River meets the Saugatuck River at the northeastern corner of the Saugatuck Reservoir. 2020 marked the first year during which a comprehensive study was conducted on the Little River. Three of the sites studied were located on the main stem of the river and the fourth site, Little 2A, was located on an unnamed tributary. In 2021, all sites met both state criteria for bacteria. Dissolved oxygen readings were observed to be below 5 mg/L at Little 4 on 8/25 and 9/1 and Little 2A on 6/22. See Appendix 8 for additional data.



	2020 Geometric mean	2021 Geometric mean
Little 4	43	14
Little 2A	29	65
Little 2	124	88
Little 1	67	49

Figure 8.1. (Left) 2021 geometric mean of *E. coli* concentrations at each site. **Table 8.1.** (Right) Comparison of site geometric means from 2020 and 2021.

9. Noroton River



The Noroton River Watershed encompasses portions of Stamford, Darien, and New Canaan, CT. The watershed is approximately 7,000 acres (11 mi^2). The river begins in New Canaan and flows south along the border of Stamford and Darien. The river discharges into Long Island Sound through Holly Pond. The land use along the river is a mixture of residential and light commercial. This is the 6th consecutive year that Harbor Watch has monitored the Noroton River. Bacteria concentrations at 4 sites (Noroton 1.5, Noroton 2, Noroton 3, and Noroton 8) failed one or both CT DEEP bacteria criteria. Mean dissolved oxygen levels met the state minimum at all sites, but individual dissolved oxygen readings were observed to be below 5 mg/L at Noroton 8 on 6/9, 6/23, 8/12, and 8/31, and Noroton 2 on 6/23. Track-down work to locate sources of pollution was conducted between Noroton 1.5 and Noroton 2 as well as between Noroton 3 and Noroton 4 in 2021. This work will continue in conjunction with our municipal partners in the Town of Darien and City of Stamford. See Appendix 9 for additional data.

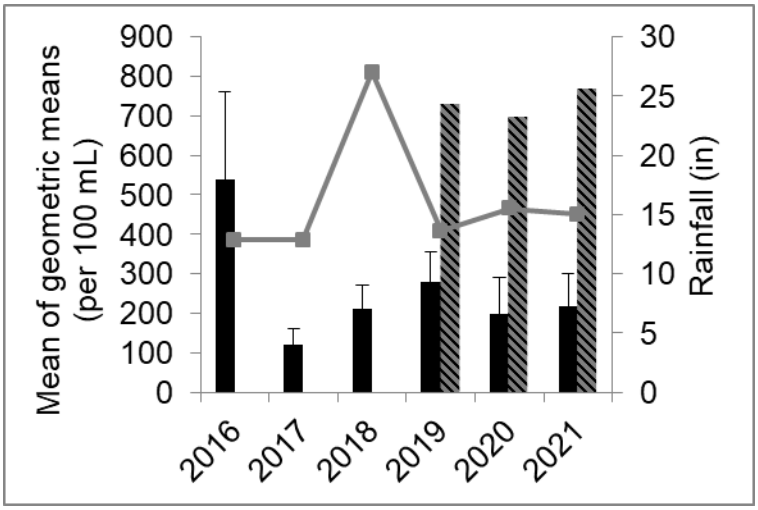
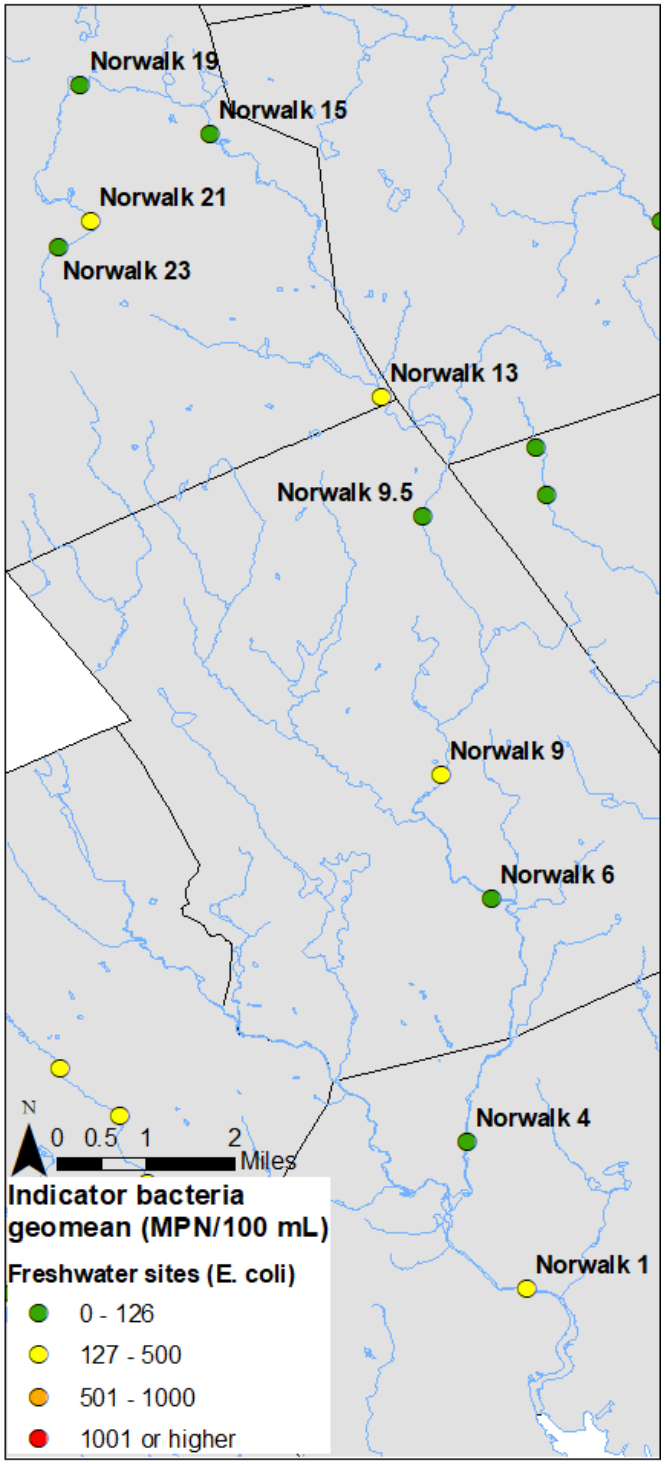


Figure 9.1. (Top) 2021 geometric mean of indicator bacteria concentrations at each site. Unlabeled sites are located on the Fivemile River (chapter 6). **Figure 9.2.** (Bottom) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2016-2021 and total rainfall from May through September each year (grey squares and line).

10. Norwalk River



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 mi^2), which is developed by commercial/light industry uses and residential neighborhoods (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 where the last 3 miles are a tidal estuary (NRWI, 1998). Harbor Watch has monitored the Norwalk River for over 25 years. In 2021, 4 sites (Norwalk 1, Norwalk 9, Norwalk 13, and Norwalk 21) exceeded the CT DEEP geomean criteria for *E. coli*. Dissolved oxygen values met the state minimum at all sites except Norwalk 21 where individual readings were observed to be below 5 mg/L on 5/5, 5/27, 6/24, 7/14, 8/5, 8/18, and 9/15. See Appendix 10 for additional data.

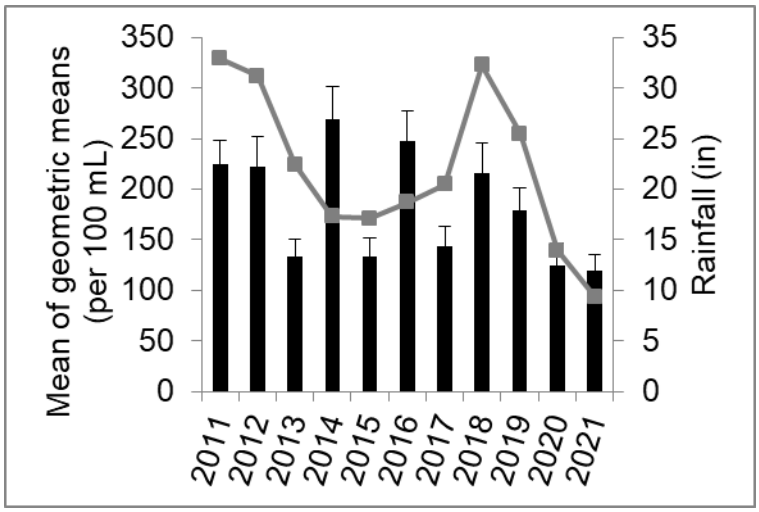


Figure 10.1. (Left) 2021 geometric mean of *E. coli* concentrations at each site. Unlabeled sites are Fivemile River (chapter 6) and Saugatuck River (chapter 14). **Figure 10.2.** (Right) Mean of site geometric means from 2011-2021 (black bars) and total rainfall from May through September each year (grey squares and line).

11. Pequonnock River

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 mi^2. 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 entire river from 2009-2010. From 2013-2015 the river was monitored only in the upper portion of the watershed. In 2019, Harbor Watch returned to monitoring the entire length of the river. In 2021, 4 sites (Pequonnock 1, Pequonnock 2, Pequonnock 3, and Pequonnock 7) exceeded one or both of the CT DEEP criteria for *E. coli*. Dissolved oxygen values met the state minimum at all sites except Pequonnock 7 where individual readings were observed to be below 5 mg/L on 7/1, 7/19, 8/16, 9/1, and 9/16. Low flow at Pequonnock 7, as the river widens and travels through a small wetland area, may explain these low dissolved oxygen concentrations. See Appendix 11 for additional data.

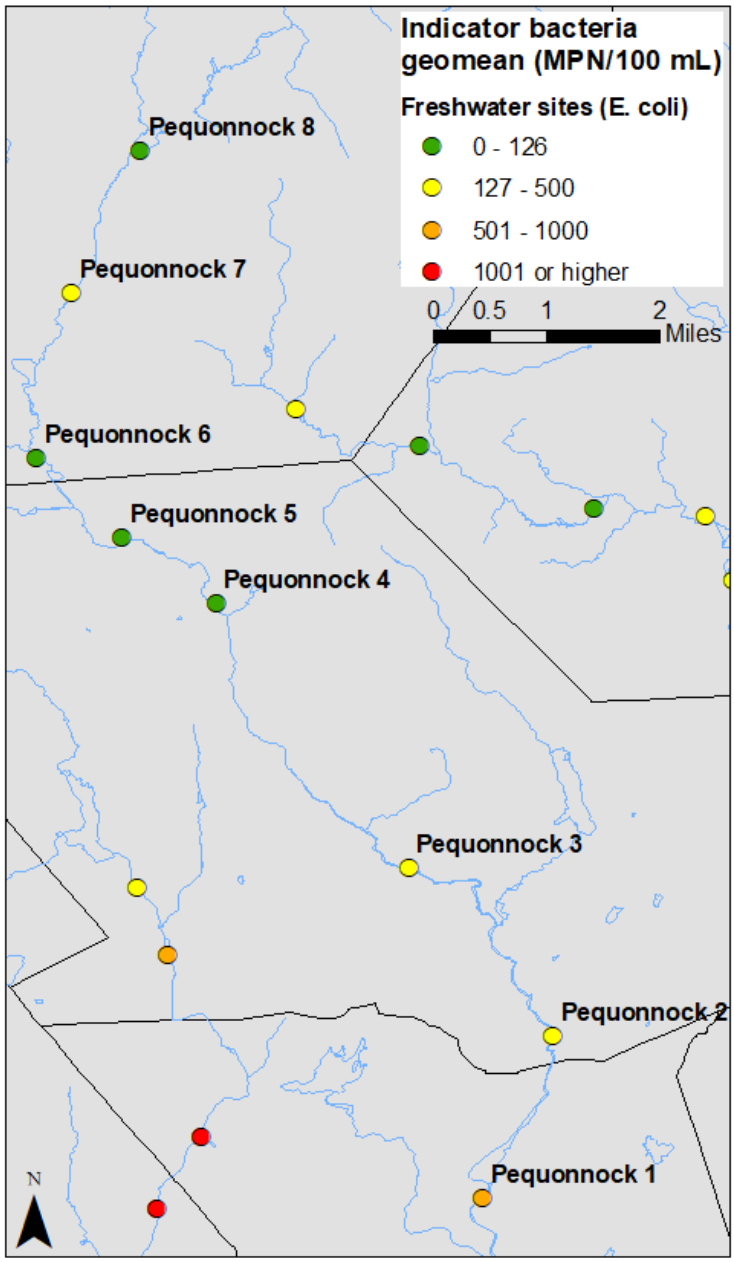
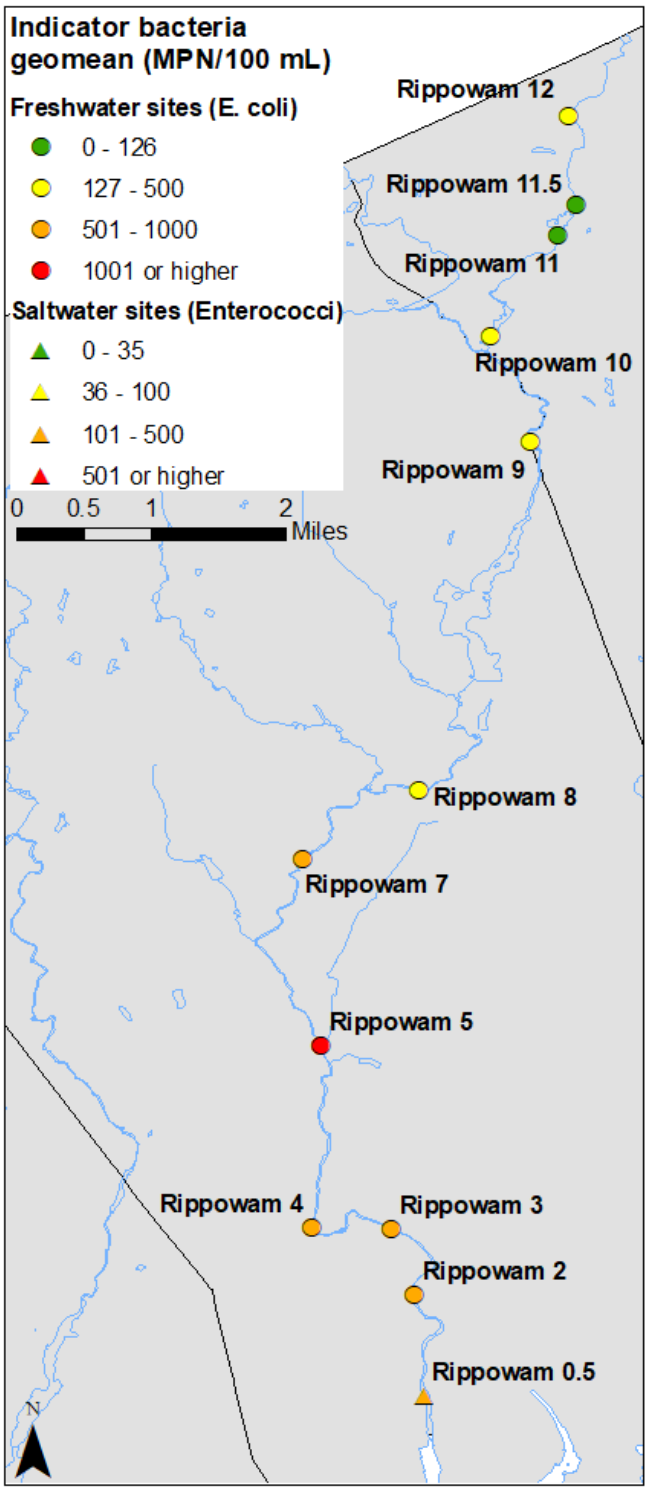


Figure 11.1. (Left) 2021 geometric mean of *E. coli* concentrations at each site. Unlabeled sites are located on the Farmill River (chapter 5) and the Ash Creek Watershed (chapter 1). **Table 11.1.** (Below) Comparison of site geometric means from 2019 and 2021.

	2019 Geometric mean	2021 Geometric mean
Pequonnock 8	26	26
Pequonnock 7	93	171
Pequonnock 6	88	86
Pequonnock 5	129	99
Pequonnock 4	130	121
Pequonnock 3	218	173
Pequonnock 2	179	280
Pequonnock 1	290	898

12. Rippowam River

The Rippowam River Watershed covers 37.5 square miles from the NY 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 residential and the northern portion is largely residential, forested, and agricultural (CT DEEP). This river is also known locally as the Mill River.



Harbor Watch has been monitoring the Rippowam River since 2017. All sites except Rippowam 11 and Rippowam 11.5 exceeded the state bacteria criteria in 2021. All dissolved oxygen readings were observed to be above the state minimum criteria of 5mg/L. See Appendix 12 for additional data.

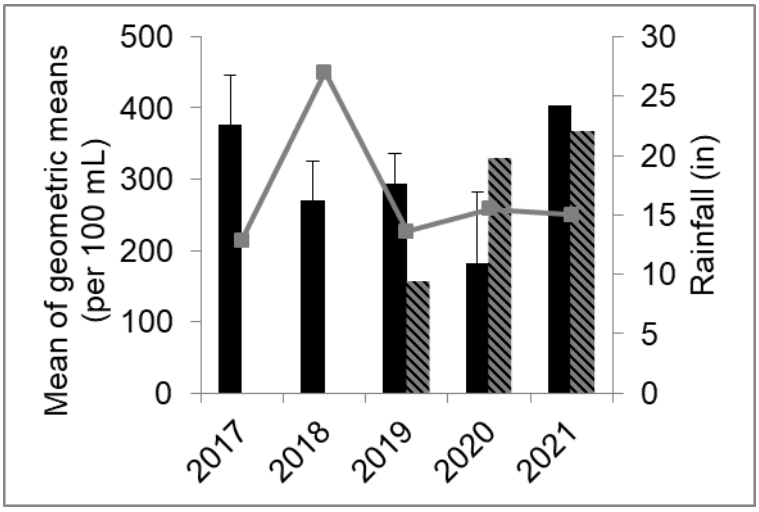
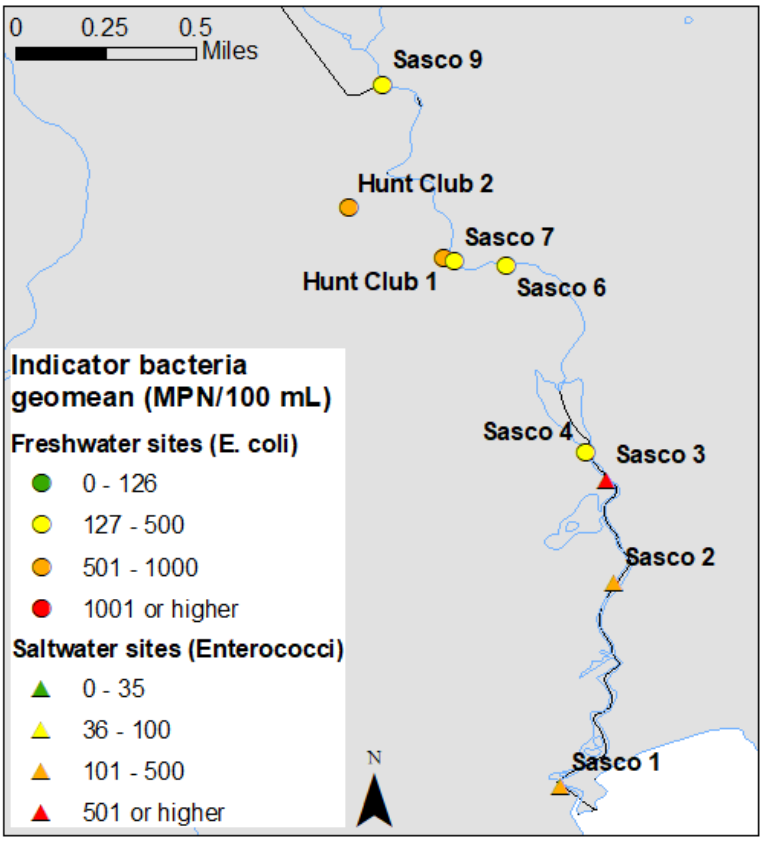


Figure 12.1. (Left) 2021 geometric mean of indicator bacteria concentrations at each site. **Figure 12.2.** (Above) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2017-2021 and total rainfall from May through September each year (grey squares and line).

13. Sasco Brook

The Sasco Brook Watershed falls within Westport, Fairfield, and Easton, CT. The watershed is approximately 6,600 acres. The land use consists of residential housing on 2 or more acres of land, private farms, a golf course, wildlife preserves (Brentwood Park, Connecticut Audubon Society), and the Fairfield County Hunt Club. Residential housing at the southern end of the watershed near the Route 1 corridor where monitoring took place is on smaller properties consisting of 0.5 acres, and homes are connected to the municipal sewer system. A large portion of housing in the upper Sasco Brook watershed, however, is on septic systems. Sasco Brook discharges into Long Island Sound at Southport Beach. Harbor Watch has conducted monitoring in various portions of the watershed throughout the years, most recently efforts have been focused on the lower portion of the watershed. Sasco Brook tied for the highest frequency of exceeding the state bacteria criteria of all watersheds monitored in 2021. In 2021, all of the sites exceeded the state bacteria criteria. Dissolved oxygen means met the state minimum for each site, but individual readings fell below 5 mg/L at sites Sasco 3 on 6/29 and Sasco 1 on 9/1. See Appendix 13 for additional data.



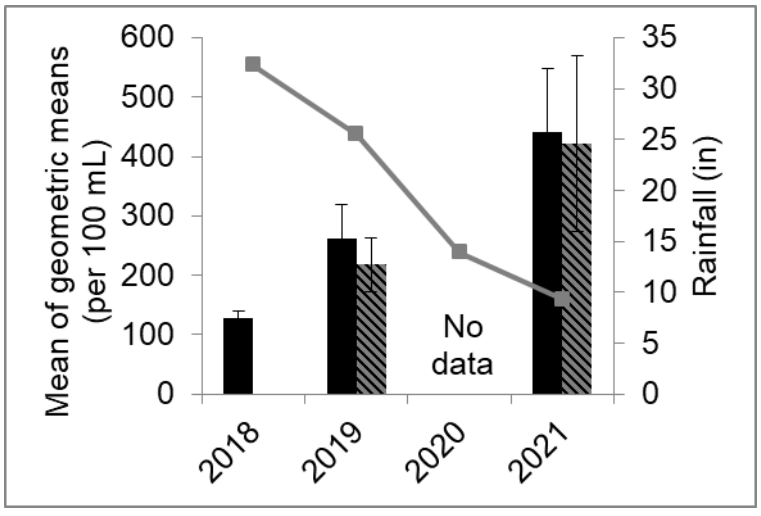


Figure 13.1. (Top) 2021 geometric mean of indicator bacteria concentrations at each site. **Figure 13.2.** (Bottom) Mean of freshwater site geometric means (black bars) and saltwater site geometric means (striped bars) from 2018-2021 and total rainfall from May through September each year (grey squares and line).

14. Saugatuck River

The Saugatuck River watershed is located in Danbury, Ridgefield, Bethel, Redding, Wilton, Weston, Easton, Westport, and Norwalk, CT. The watershed is approximately 38,704 acres (60.5 mi^2) and is defined by 2 main drainage basins: the Saugatuck River and the West Branch of the Saugatuck River. The land use is a combination of protected preserve around the Saugatuck Reservoir, residential, and light commercial. The Saugatuck River discharges into Long Island Sound at Saugatuck Harbor. Harbor Watch has monitored the Saugatuck River for over 10 years. Three sites (Saugatuck 0.25, Saugatuck 0.5, and Saugatuck 0.75) failed the CT DEEP geomean bacteria criterion. Dissolved oxygen means exceeded the state minimum criteria at all sites, but individual readings dropped below 5 mg/L at sites Saugatuck 0.75 on 8/17, Saugatuck 0.5 on 6/16 and 7/29, and Saugatuck 0.25 on 7/29. The decline in brackish site geomeans since 2019 may be related to the discovery and repair of an underwater sanitary sewer line in Saugatuck Harbor in 2019 (Figure 14.2). See Appendix 14 for additional data.

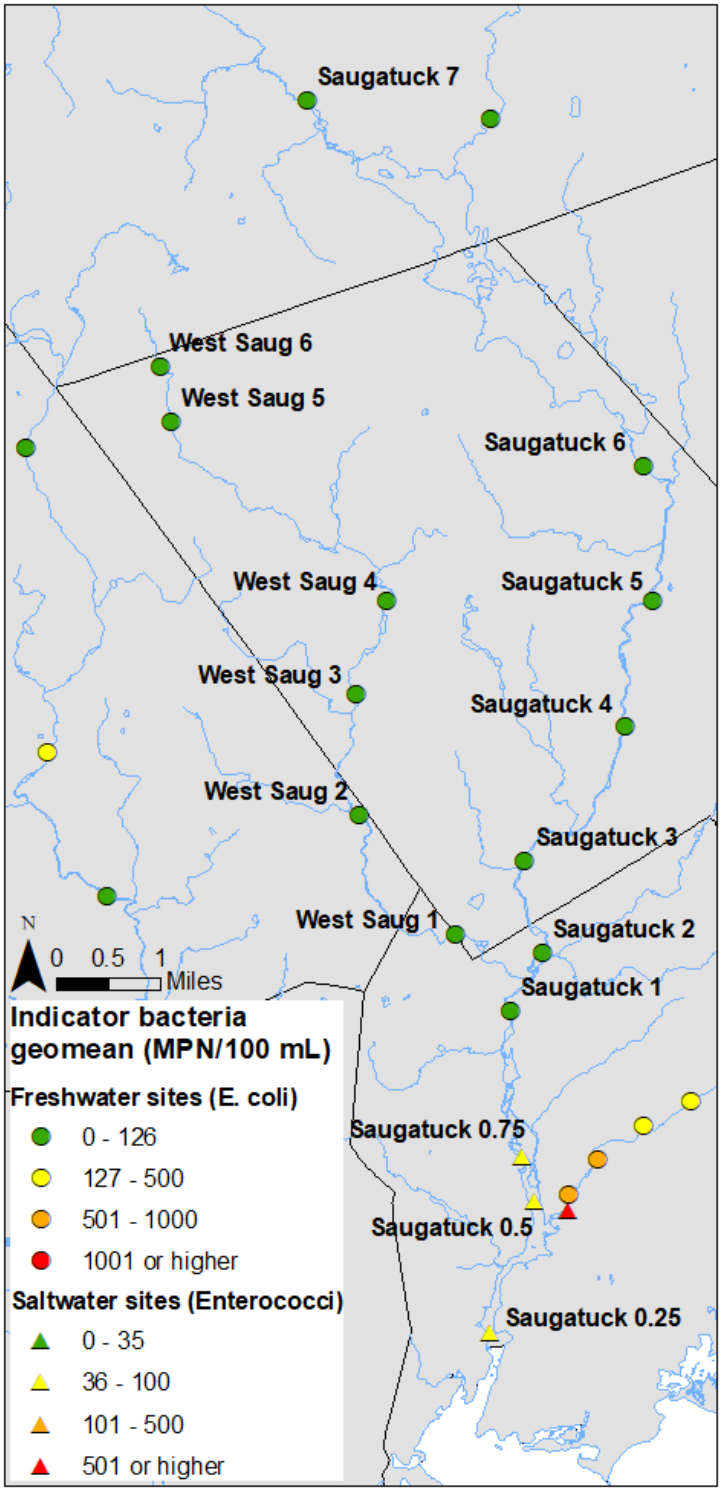
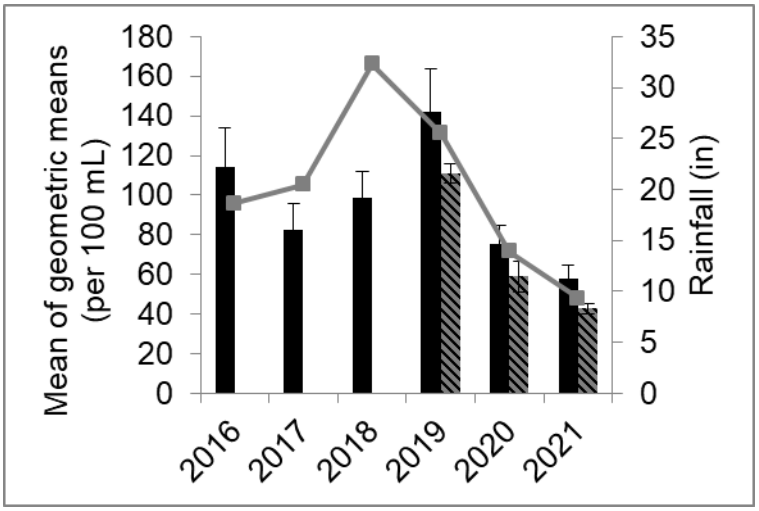


Figure 14.1. (Left) 2021 geometric mean of indicator bacteria concentrations at each site. Unlabeled sites were located on Little River (chapter 8), Deadman's Brook (chapter 4), and Norwalk River (chapter 10). **Figure 14.2** (Below) Mean of freshwater site geometric means (black bars) and brackish site geometric means (striped bars) from 2016-2021 and total rainfall from May through September each year (grey squares and line).



Appendix 1: Ash Creek Watershed

Table A1.1. GPS coordinates and site locations for the Ash Creek Watershed.

Site Name	Latitude	Longitude	Site location notes	River Name
Horse Tavern 5	41.24438	-73.23205	Revere Lane	Horse Tavern Brook
Horse Tavern 4	41.23572	-73.22811	Chestnut Hill Road	Horse Tavern Brook
Rooster 8	41.22641	-73.22206	Old Town Road	Horse Tavern Brook
Horse Tavern 3.5	41.21851	-73.21785	Anton Street	Horse Tavern Brook
Horse Tavern 3	41.21243	-73.22382	Vincellette Street	Horse Tavern Brook
Horse Tavern 2	41.20316	-73.22940	Wilson Street	Horse Tavern Brook
Horse Tavern 1	41.19585	-73.23199	Stratfield Road	Horse Tavern Brook
Londons 1	41.19538	-73.23540	Montauk Street	Londons Brook
Rooster 4.7	41.19260	-73.22850	Cornell Road	Rooster River
Rooster 4.6	41.18858	-73.22064	Brooklawn Avenue	Rooster River
Rooster 4.5	41.18807	-73.21872	Capitol Avenue	Rooster River
Rooster 3.5	41.18283	-73.21771	Brooklawn Avenue	Rooster River
Rooster 2.5	41.17648	-73.22304	North Avenue (Route 1)	Rooster River
Ash 1	41.16745	-73.22369	Commerce Drive/State Street Ext	Ash Creek

Table A1.2. Ash Creek Watershed *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Tweed New Haven Regional Airport, October 7, 2021).

	Indicator bacteria	5/10/2021	5/26/2021	6/9/2021	6/24/2021	7/14/2021	7/28/2021	8/10/2021	8/19/2021	9/9/2021	9/22/2021	Geomean	% exceeding SSM
Horse Tavern 5	*E. coli*	75	27	121	261	411	613	1733	N/A	>4839	247	318	33%
Horse Tavern 4	*E. coli*	279	41	579	411	461	1733	>2420	>4839	922	167	574	50%
Horse Tavern 3	*E. coli*	1918	475	875	953	1741	1844	1642	>9678	3466	480	1517	80%
Horse Tavern 2	*E. coli*	1046	228	977	821	2827	3080	1642	>9678	4185	575	1515	80%
Horse Tavern 1	*E. coli*	1918	875	3080	3255	1259	1296	1014	24196	12997	432	2279	90%
Londons 1	*E. coli*	>4839	189	796	933	960	3255	842	24196	3873	554	1573	80%
Rooster 4.7	*E. coli*	953	810	2318	953	1549	N/A	3922	9678	4479	420	1790	89%
Rooster 4.6	*E. coli*	944	417	N/A	992	525	1462	2318	>9678	3922	445	1315	67%
Rooster 4.5	*E. coli*	8664	1935	6488	17329	7270	4352	1658	24196	>24196	860	5884	100%
Rooster 3.5	*E. coli*	5794	17329	6131	2359	2851	2489	9208	>24196	17329	1515	5998	100%
Rooster 2.5	*E. coli*	6131	2143	>24196	1768	1178	5475	4106	>24196	6488	1187	4409	100%
Ash 1	*Enterococci*	8164	839	2613	3654	1679	3282	2755	10462	6488	717	2940	100%
Weather		Wet	Dry	Dry	Wet	Dry	Wet	Wet	Wet	Wet	Dry		

Table A1.3. Ash Creek Watershed mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Horse Tavern 5	18.2	8.97	342
Horse Tavern 4	19.0	8.95	351
Horse Tavern 3	19.0	8.35	469
Horse Tavern 2	19.0	8.98	468
Horse Tavern 1	19.3	9.43	457
Londons 1	19.6	8.43	347
Rooster 4.7	19.6	9.86	383
Rooster 4.6	19.0	8.73	391
Rooster 4.5	19.8	6.25	692
Rooster 3.5	18.5	8.95	382
Rooster 2.5	18.8	8.61	416
Ash 1	19.4	6.18	2413

Appendix 2: Bruce Brook

Table A2.1. GPS coordinates and site locations for Bruce Brook.

Site Name	Latitude	Longitude	Site location notes	River Name
Bruce 8	41.22278	-73.1416	Bunnell Avenue	Bruce Brook
Bruce 7	41.22118	-73.1409	Connors Lane	Bruce Brook
Bruce 6	41.21949	-73.1409	Old Spring Road	Bruce Brook
Bruce 5	41.20915	-73.1457	Albright Avenue	Bruce Brook
Bruce 4	41.20397	-73.148	2340 Broadbridge Avenue	Bruce Brook
Bruce 3	41.19699	-73.1509	380 Canaan Road	Bruce Brook
Bruce 2	41.19188	-73.1543	102 Bowe Avenue	Bruce Brook
Bruce 1	41.18386	-73.1545	Connecticut Avenue	Bruce Brook
Bruce 0.5	41.173956	-73.1586	Hollister Avenue	Bruce Brook

Table A2.2. Bruce Brook *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Tweed New Haven Regional Airport, October 7, 2021).

	Indicator bacteria	5/10/2021	5/18/2021	6/10/2021	6/21/2021	7/1/2021	7/21/2021	8/12/2021	8/16/2021	9/7/2021	9/22/2021	Geomean	% exceeding SSM
Bruce 8	*E. coli*	630	226	1462	857	1164	550	2453	1549	556	407	793	60%
Bruce 7	*E. coli*	806	565	1462	1549	3466	1462	2318	1164	537	498	1142	70%
Bruce 6	*E. coli*	646	7945	7945	4185	7701	7270	24196	1817	672	492	3268	90%
Bruce 5	*E. coli*	944	39	268	102	373	333	37	40	922	384	192	20%
Bruce 4	*E. coli*	1467	275	2014	1918	2014	2489	3873	>24196	794	3076	2115	90%
Bruce 3	*E. coli*	1782	448	2909	2382	7270	4106	1850	7701	1236	2098	2391	90%
Bruce 2	*E. coli*	2686	2708	1211	1813	1817	2359	1250	10950	864	2034	2097	100%
Bruce 1	*E. coli*	24809	2917	521	1967	1176	51721	13761	9331	24953	10758	6594	90%
Bruce 0.5	*Enterococci*	19863	336	813	318	1658	52	5794	605	1187	763	927	70%
Weather		Wet	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Wet	Dry		

Table A2.3. Bruce Brook mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Bruce 8	18.7	7.32	438
Bruce 7	19.2	6.54	424
Bruce 6	18.1	6.34	419
Bruce 5	18.3	7.85	350
Bruce 4	20.5	9.51	315
Bruce 3	20.3	9.30	367
Bruce 2	20.0	8.32	397
Bruce 1	19.8	5.25	462
Bruce 0.5	21.0	5.92	22389

Appendix 3: Byram River

Table A3.1. GPS coordinates and site locations for the Byram River.

Site Name	Latitude	Longitude	Site location notes	River Name
East Byram 3	41.09915	-73.68308	88 John Street	East Branch of Byram River
East Byram 2	41.07998	-73.67743	105 Porchuck Road	East Branch of Byram River
East Byram 1	41.06051	-73.67454	329 Riversville Road	East Branch of Byram River
Byram 7	41.09460	-73.70437	111 Bedford Road	Byram River
Byram 6	41.06092	-73.67760	Sherwood Avenue	Byram River
Byram 5	41.04627	-73.66265	7 Bailiwick Road	Byram River
Byram 4	41.03858	-73.66530	Glenville Street	Byram River
Byram 3	41.02740	-73.66169	Comly Avenue and Pemberwick Road	Byram River
Byram 2	41.02383	-73.65859	2 Upland Street E.	Byram River
Byram 1	41.01649	-73.65623	Den Lane	Byram River

Table A3.2. Byram River *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Westchester County Airport Station, October 7, 2021).

	5/11/2021	5/24/2021	6/3/2021	6/14/2021	7/15/2021	7/20/2021	8/2/2021	8/18/2021	8/31/2021	9/16/2021	Geomean	% exceeding SSM
East Byram 3	58	6	1300	977	42	26	23	35	38	31	58	20%
East Byram 2	23	10	1553	727	17	21	7	9	40	308	48	20%
East Byram 1	45	81	387	649	1300	77	770	219	34	303	209	30%
Byram 7	141	326	1733	275	142	79	70	82	128	261	185	10%
Byram 6	50	30	222	236	82	47	33	34	75	411	80	0%
Byram 5	86	13	93	70	37	66	32	43	69	58	50	0%
Byram 4	84	82	687	1414	113	1203	197	291	96	44	216	30%
Byram 3	93	49	156	517	91	613	50	11	135	104	105	10%
Byram 2	131	1414	498	1120	222	234	361	1733	378	219	441	30%
Byram 1	172	156	770	472	220	308	249	144	179	770	283	20%
Weather	Wet	Dry	Dry	Wet	Dry	Dry	Dry	Dry	Dry	Dry		

Table A3.3. Byram River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
East Byram 3	19.3	8.04	274
East Byram 2	18.9	8.08	309
East Byram 1	20.0	7.53	329
Byram 7	19.5	6.82	839
Byram 6	19.5	9.05	710
Byram 5	20.8	7.86	538
Byram 4	20.7	8.32	595
Byram 3	20.8	9.13	547
Byram 2	21.5	9.68	479
Byram 1	21.0	7.78	522

Appendix 4: Deadman's Brook

Table A4.1. GPS coordinates and site locations for Deadman's Brook.

Site Name	Latitude	Longitude	Site location notes	River Name
Deadman 9	41.17826	-73.33006	Tupelo Road	Deadman's Brook
Deadman 8	41.17267	-73.33152	Highland Road	Deadman's Brook
Deadman 7	41.16502	-73.33419	Silent Grove North	Deadman's Brook
Deadman 5	41.15869	-73.33498	North Avenue	Deadman's Brook
Deadman 4	41.15487	-73.34130	Leslie Lane	Deadman's Brook
Deadman 3.5	41.15141	-73.34782	Deerwood Lane	Deadman's Brook
Deadman 3	41.14682	-73.35434	Evergreen Ave	Deadman's Brook
Deadman 2	41.14199	-73.35834	Myrtle Ave	Deadman's Brook
Deadman 1	41.13975	-73.35843	Jesup Road	Deadman's Brook

Table A4.2. Deadman's Brook *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: City of Norwalk Rain Gauge, Bill Mooney, Personal Communication October 20, 2021).

	Indicator bacteria	5/4/2021	5/26/2021	6/7/2021	6/15/2021	7/15/2021	7/26/2021	8/5/2021	8/23/2021	8/31/2021	9/14/2021	Geomean	% exceeding SSM
Deadman 9	*E. coli*	365	6	7	7	124	14	6	2599	17	93	37	10%
Deadman 8	*E. coli*	387	21	99	248	162	162	158	4839	43	71	161	10%
Deadman 7	*E. coli*	2420	128	496	3466	255	821	370	>4839	171	420	654	40%
Deadman 5	*E. coli*	2420	276	222	1298	311	252	138	>4839	123	221	440	30%
Deadman 4	*E. coli*	4839	82	162	1414	321	333	17	>4839	111	357	354	30%
Deadman 3.5	*E. coli*	>2420	59	387	821	229	111	126	>4839	N/A	265	385	33%
Deadman 3	*E. coli*	>2420	104	313	545	615	255	198	>9678	796	163	528	40%
Deadman 2	*E. coli*	>2420	198	321	582	775	403	651	9678	279	310	658	50%
Deadman 1	*Enterococci*	>24196	N/A	435	2382	717	285	374	>24196	441	473	1287	44%
Weather		Wet	Dry	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Dry		

Table A4.3. Deadman's Brook mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Deadman 9	20.4	4.43	197
Deadman 8	19.8	5.86	227
Deadman 7	19.2	6.24	309
Deadman 5	19.4	7.87	285
Deadman 4	19.3	8.92	319
Deadman 3.5	18.9	9.02	294
Deadman 3	18.7	8.98	317
Deadman 2	18.5	9.20	319
Deadman 1	19.4	8.63	7606

Appendix 5: Farmill River

Table A5.1. GPS coordinates and site locations for the Farmill River.

Site Name	Latitude	Longitude	Site location notes	River Name
Farmill 8	41.305748	-73.211577	Jays Road	Farmill River
Farmill 7	41.300952	-73.195789	Booth Hill Road and Mohegan Road intersection	Farmill River
Farmill 6	41.292882	-73.173302	6 Corn Hill Road	Farmill River
Farmill 5	41.291907	-73.159113	Walnut Tree Hill Road	Farmill River
Farmill 4	41.283835	-73.155510	Nichols Avenue	Farmill River
Farmill 3	41.282739	-73.137207	Buddington Road	Farmill River
Farmill 2	41.276331	-73.115018	Beard Sawmill Road	Farmill River
Farmill 1	41.264572	-73.107256	115 Yutaka Trail	Farmill River

Table A5.2. Farmill River *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Danbury Muni Station, October 7, 2021).

	5/3/2021	5/17/2021	6/8/2021	6/22/2021	6/28/2021	7/21/2021	8/3/2021	8/24/2021	9/8/2021	9/23/2021	Geomean	% exceeding SSM
Farmill 8	24	163	111	152	284	125	49	690	119	225	136	10%
Farmill 7	13	214	76	40	101	82	30	472	105	124	82	0%
Farmill 6	3	9	7	238	18	11	2	449	27	20	18	0%
Farmill 5	71	272	79	242	204	137	345	690	209	387	214	10%
Farmill 4	308	93	160	192	>4839	92	68	870	205	210	251	20%
Farmill 3	67	51	137	252	85	147	95	1298	99	248	146	10%
Farmill 2	11	44	93	125	112	156	148	1373	99	488	125	10%
Farmill 1	49	41	58	105	178	102	73	1633	93	186	117	10%
Weather	Dry	Dry	Dry	Wet	Dry	Dry	Dry	Wet	Dry	Dry		

Table A5.3. Farmill River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Farmill 8	18.5	8.81	486
Farmill 7	19.3	8.63	400
Farmill 6	21.7	8.06	272
Farmill 5	19.3	8.92	293
Farmill 4	21.3	7.62	281
Farmill 3	19.5	6.36	310
Farmill 2	19.8	8.57	404
Farmill 1	19.4	8.86	372

Appendix 6: Fivemile River

Table A6.1. GPS coordinates and site locations for the Fivemile River.

Site Name	Latitude	Longitude	Site location notes	River Name
Fivemile 10	41.189323	-73.514135	Michigan Road	Fivemile River
Fivemile 9	41.168110	-73.504929	Country Club Road	Fivemile River
Fivemile 8	41.155580	-73.493453	Smith Ridge Road	Fivemile River
Fivemile 7	41.147827	-73.483529	East Avenue	Fivemile River
Fivemile 6	41.136623	-73.479169	Old Norwalk Road	Fivemile River
Fivemile 5	41.126902	-73.471024	Nursery Road	Fivemile River
Fivemile 4	41.110687	-73.461955	Fillow Street	Fivemile River
Fivemile 3	41.100584	-73.454406	W. Cedar Street	Fivemile River
Fivemile 2	41.088194	-73.450708	Flax Hill Road	Fivemile River
Fivemile 1	41.073023	-73.447620	Cudlipp Street	Fivemile River

Table A6.2. Fivemile River *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: City of Norwalk Rain Gauge, Bill Mooney, Personal Communication October 20, 2021).

	Indicator bacteria	5/13/2021	5/19/2021	6/3/2021	6/23/2021	7/13/2021	7/28/2021	8/10/2021	8/17/2021	9/9/2021	9/22/2021	Geomean	% exceeding SSM
Fivemile 10	*E. coli*	37	137	816	308	210	1986	150	579	411	93	266	30%
Fivemile 9	*E. coli*	73	24	687	387	70	88	7	34	193	17	69	10%
Fivemile 8	*E. coli*	28	38	1733	476	93	252	166	102	649	130	177	20%
Fivemile 7	*E. coli*	138	1300	>2419	922	237	775	137	N/A	548	201	470	44%
Fivemile 6	*E. coli*	37	66	1120	358	147	163	114	156	313	145	169	10%
Fivemile 5	*E. coli*	46	138	162	249	114	116	166	345	344	153	159	0%
Fivemile 4	*E. coli*	66	80	172	308	285	344	461	245	365	131	207	0%
Fivemile 3	*E. coli*	46	93	88	428	300	91	129	43	488	186	137	0%
Fivemile 2	*E. coli*	22	147	144	190	272	687	456	816	236	119	211	20%
Fivemile 1	*Enterococci*	41	185	134	301	336	156	121	63	1334	52	156	10%
Weather		Dry	Dry	Wet	Wet	Wet	Wet	Wet	Dry	Wet	Dry		

Table A6.3. Fivemile River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Fivemile 10	17.8	7.52	342
Fivemile 9	19.3	8.71	250
Fivemile 8	19.1	8.56	305
Fivemile 7	18.9	8.84	320
Fivemile 6	20.1	8.37	531
Fivemile 5	19.1	7.34	488
Fivemile 4	19.2	8.94	449
Fivemile 3	20.3	8.61	406
Fivemile 2	20.0	8.63	424
Fivemile 1	19.9	6.01	27928

Appendix 7: Horseneck Brook

Table A7.1. GPS coordinates and site locations for Horseneck Brook.

Site Name	Latitude	Longitude	Site location notes	River Name
Horseneck 10	41.11419	-73.63283	Lower Cross Road	Horseneck Brook
Horseneck 8	41.07068	-73.63984	Lake Avenue	Horseneck Brook
Horseneck 7	41.05232	-73.64170	Round Hill Road	Horseneck Brook
Horseneck 6	41.04696	-73.64195	Winding Lane	Horseneck Brook
Horseneck 5	41.04121	-73.64171	Zaccheus Mead Lane	Horseneck Brook
Horseneck 4	41.03046	-73.63974	Valley Drive	Horseneck Brook
Horseneck 3	41.02853	-73.63472	Brookside Park	Horseneck Brook
Horseneck 2	41.02687	-73.63319	177 West Putnam Avenue	Horseneck Brook
Horseneck 1	41.020433	-73.632476	Field Point Road and Prospect Street intersection	Horseneck Brook

Table A7.2. Horseneck Brook *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Westchester County Airport Station, October 7, 2021).

	5/13/2021	5/18/2021	6/1/2021	6/14/2021	6/29/2021	7/22/2021	8/11/2021	8/16/2021	9/9/2021	9/23/2021	Geomean	% exceeding SSM
Horseneck 10	29	2	121	>4839	151	159	1553	411	2827	1159	265	40%
Horseneck 8	9	15	150	>2420	182	52	328	210	649	921	168	30%
Horseneck 7	9	14	38	1553	106	308	435	214	248	870	146	20%
Horseneck 6	11	1095	51	328	13	40	411	32	649	517	116	20%
Horseneck 5	33	50	52	1986	228	197	214	65	93	172	133	10%
Horseneck 4	2420	>2420	2407	4839	3683	183	462	142	1034	387	1019	60%
Horseneck 3	225	517	1733	>4839	257	345	2599	283	3973	176	733	40%
Horseneck 2	308	291	1733	>4839	796	504	2318	343	3080	690	934	60%
Horseneck 1	613	344	821	>4839	1089	690	2069	1954	2595	1298	1240	90%
Weather	Dry	Dry	Wet	Wet	Dry	Dry	Wet	Dry	Dry	Dry		

Table A7.3. Horseneck Brook mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Horseneck 10	17.6	7.48	425
Horseneck 8	19.1	7.69	493
Horseneck 7	20.0	6.12	409
Horseneck 6	19.4	7.60	463
Horseneck 5	19.3	7.81	481
Horseneck 4	18.9	8.44	516
Horseneck 3	18.8	9.20	519
Horseneck 2	18.7	8.95	585
Horseneck 1	19.0	9.24	588

Appendix 8: Little River

Table A8.1. GPS coordinates and site locations for the Little River.

Site Name	Latitude	Longitude	Site location notes	River Name
Little 4	41.33821	-73.37624	Pocahontas Road	Little River
Little 2A	41.32423	-73.36592	Black Rock Turnpike	Unnamed Tributary
Little 2	41.30905	-73.36563	Cross Highway	Little River
Little 1	41.29182	-73.36918	Greenbush Road	Little River

Table A8.2. Little River *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Danbury Muni Station, October 7, 2021).

	5/6/2021	5/26/2021	6/2/2021	6/22/2021	6/30/2021	7/26/2021	8/4/2021	8/25/2021	9/1/2021	9/20/2021	Geomean	% exceeding SSM
Little 4	4	4	1	11	105	5	18	28	821	5	14	10%
Little 2A	38	2	137	66	N/A	20	N/A	488	2420	20	65	13%
Little 2	46	18	71	64	153	127	29	140	1120	78	88	10%
Little 1	23	4	24	51	87	52	32	236	548	38	49	0%
Weather	Wet	Dry	Dry	Wet	Dry	Dry	Dry	Wet	Dry	Dry		

Table A8.3. Little River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Little 4	21.8	5.86	175
Little 2A	16.5	8.03	255
Little 2	17.5	9.15	217
Little 1	17.4	9.47	229

Appendix 9: Noroton River

Table A9.1. GPS coordinates and site locations for the Noroton River.

Site Name	Latitude	Longitude	Site location notes	River Name
Noroton 8	41.15925	-73.51421	West Road and Greenley Road intersection	Noroton River
Noroton 7	41.14108	-73.51167	209 Frogtown Road	Noroton River
Noroton 5	41.11868	-73.50130	47 Jelliff Mill Road	Noroton River
Noroton 4	41.10290	-73.50982	137 Woodway Road	Noroton River
Noroton 3	41.09540	-73.51430	Camp Avenue	Noroton River
Noroton 2	41.07530	-73.51550	668 Connecticut 106	Noroton River
Noroton 1.5	41.06186	-73.50814	1308 E Main Street	Noroton River

Table A9.2. Noroton River *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Westchester County Airport Station, October 7, 2021).

	Indicator bacteria	5/4/2021	5/17/2021	6/9/2021	6/23/2021	6/30/2021	7/27/2021	8/12/2021	8/26/2021	8/31/2021	9/15/2021	Geomean	% exceeding SSM
Noroton 8	*E. coli*	770	199	138	245	225	35	488	130	127	67	171	10%
Noroton 7	*E. coli*	1633	12	102	111	73	50	58	48	64	137	85	10%
Noroton 5	*E. coli*	1300	27	88	42	58	12	40	16	10	37	43	10%
Noroton 4	*E. coli*	105	27	236	93	225	74	82	141	70	79	96	0%
Noroton 3	*E. coli*	231	461	1120	413	3466	690	782	308	334	437	578	40%
Noroton 2	*E. coli*	2420	120	921	770	99	276	>2420	133	148	456	333	33%
Noroton 1.5	*Enterococci*	4839	N/A	821	977	498	449	1961	115	1454	335	770	56%
		Wet	Dry	Wet	Wet	Dry	Dry	Wet	Wet	Dry	Dry		

Table A9.3. Noroton River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Noroton 8	22.2	5.84	305
Noroton 7	20.5	7.66	297
Noroton 5	22.8	8.63	360
Noroton 4	22.8	8.06	350
Noroton 3	21.7	7.66	361
Noroton 2	21.4	6.78	456
Noroton 1.5	21.1	7.63	574

Appendix 10: Norwalk River

Table A10.1. GPS coordinates and site locations for the Norwalk River.

Site Name	Latitude	Longitude	Site location notes	River Name
Norwalk 23	41.29005	-73.49349	22 South Street	Unnamed Tributary
Norwalk 21	41.29444	-73.48843	68 Farmingville Road	Ridgefield Brook
Norwalk 19	41.31672	-73.49001	Limestone Road	Ridgefield Brook
Norwalk 15	41.30870	-73.46884	Stonehenge Road	Norwalk River
Norwalk 13	41.26550	-73.44079	787 Branchville Road	Norwalk River
Norwalk 9.5	41.24590	-73.43409	Old Mill Road	Norwalk River
Norwalk 9	41.20354	-73.43094	School Road	Norwalk River
Norwalk 6	41.18341	-73.42276	187 Danbury Road	Norwalk River
Norwalk 4	41.14349	-73.42669	10 Glover Avenue	Norwalk River
Norwalk 1	41.11947	-73.41701	40 Cross Street	Norwalk River

Table A10.2. Norwalk River *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: City of Norwalk Rain Gauge, Bill Mooney, Personal Communication October 20, 2021).

	5/5/2021	5/27/2021	6/10/2021	6/24/2021	7/14/2021	7/21/2021	8/5/2021	8/18/2021	9/8/2021	9/15/2021	Geomean	% exceeding SSM
Norwalk 23	168	1414	68	65	82	64	43	248	70	144	120	10%
Norwalk 21	172	299	186	172	291	261	166	162	185	143	197	0%
Norwalk 19	116	15	12	12	35	12	12	14	206	72	28	0%
Norwalk 15	91	133	46	214	132	52	24	42	57	91	73	0%
Norwalk 13	111	44	98	91	111	387	192	435	150	135	141	0%
Norwalk 9.5	68	24	93	91	123	135	69	166	105	81	86	0%
Norwalk 9	75	127	114	326	179	105	172	263	70	114	137	0%
Norwalk 6	82	117	205	112	112	75	88	122	108	166	114	0%
Norwalk 4	114	179	308	142	148	76	45	48	106	119	110	0%
Norwalk 1	186	436	206	130	199	166	68	308	133	210	183	0%
Weather	Wet	Wet	Wet	Wet	Wet	Dry	Dry	Dry	Dry	Dry		

Table A10.3. Norwalk River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Norwalk 23	18.7	8.77	1390
Norwalk 21	18.9	3.85	1007
Norwalk 19	20.9	6.86	815
Norwalk 15	19.9	8.85	806
Norwalk 13	20.4	8.27	490
Norwalk 9.5	20.5	8.41	524
Norwalk 9	19.0	9.15	482
Norwalk 6	19.5	8.54	476
Norwalk 4	19.9	9.52	516
Norwalk 1	20.7	9.11	465

Appendix 11: Pequonnock River

Table A11.1. GPS coordinates and site locations for the Pequonnock River.

Site Name	Latitude	Longitude	Site location notes	River Name
Pequonnock 8	41.33878	-73.23153	W Maiden Lane	Pequonnock River
Pequonnock 7	41.32053	-73.24030	Cutler's Farm Road	Pequonnock River
Pequonnock 6	41.29946	-73.24480	Victoria Drive	Pequonnock River
Pequonnock 5	41.28928	-73.23387	Old Mine Road	Pequonnock River
Pequonnock 4	41.28073	-73.22187	Whitney Avenue	Pequonnock River
Pequonnock 3	41.24690	-73.19718	Daniels Farm Road	Pequonnock River
Pequonnock 2	41.22546	-73.17870	Rail Trail off Quarry Road	Pequonnock River
Pequonnock 1	41.20460	-73.18765	Glenwood Park	Pequonnock River

Table A11.2. Pequonnock River *E. coli* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Tweed New Haven Regional Airport, October 7, 2021).

	5/12/2021	5/20/2021	6/2/2021	6/17/2021	7/1/2021	7/19/2021	8/2/2021	8/16/2021	9/1/2021	9/16/2021	Geomean	% exceeding SSM
Pequonnock 8	4	34	1	47	61	28	11	20	75	727	26	10%
Pequonnock 7	27	114	102	291	127	93	206	182	651	816	171	20%
Pequonnock 6	33	65	84	46	122	68	40	79	521	197	86	0%
Pequonnock 5	35	19	68	68	517	98	58	122	420	201	99	0%
Pequonnock 4	29	46	117	231	210	184	53	88	582	186	121	10%
Pequonnock 3	28	56	93	109	449	144	155	82	1633	1120	173	20%
Pequonnock 2	64	N/A	1120	151	171	N/A	107	121	651	>2420	280	38%
Pequonnock 1	367	517	2420	2092	429	651	123	344	9678	3106	898	50%
Weather	Wet	Dry	Wet	Wet	Dry	Dry	Dry	Dry	Dry	Dry		

Table A11.3. Pequonnock River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Pequonnock 8	23.2	7.99	292
Pequonnock 7	19.6	5.80	285
Pequonnock 6	19.2	8.23	322
Pequonnock 5	19.3	8.02	365
Pequonnock 4	18.9	8.97	382
Pequonnock 3	18.5	9.34	378
Pequonnock 2	18.8	9.04	405
Pequonnock 1	21.6	8.02	358

Appendix 12: Rippowam River

Table A12.1. GPS coordinates and site locations for the Rippowam River.

Site Name	Latitude	Longitude	Site location notes	River Name
Rippowam 12	41.18524	-73.52999	Oenoke Ridge	Rippowam River
Rippowam 11.5	41.17561	-73.52919	West Road	Rippowam River
Rippowam 11	41.17234	-73.53126	Dans Highway	Rippowam River
Rippowam 10	41.16153	-73.53843	Ponus Ridge Road	Rippowam River
Rippowam 9	41.15023	-73.53412	Cascade Road	Rippowam River
Rippowam 8	41.11302	-73.54619	High Ridge Road	Rippowam River
Rippowam 7	41.10559	-73.5586	Cedar Heights Road	Rippowam River
Rippowam 5	41.08559	-73.55664	Long Ridge Road	Rippowam River
Rippowam 4	41.06617	-73.55763	Cold Spring Road	Rippowam River
Rippowam 3	41.06593	-73.54912	Bridge Street	Rippowam River
Rippowam 2	41.05904	-73.54664	W North Street	Rippowam River
Rippowam 0.5	41.04813	-73.54542	Richmond Hill Avenue	Rippowam River

Table A12.2. Rippowam River *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: Weather Underground – Westchester County Airport Station, October 7, 2021).

	Indicator bacteria	5/12/2021	5/27/2021	6/8/2021	6/16/2021	6/28/2021	7/22/2021	8/11/2021	8/19/2021	9/8/2021	9/23/2021	Geomean	% exceeding SSM
Rippowam 12	*E. coli*	22	80	69	73	206	61	345	>4839	80	429	151	10%
Rippowam 11.5	*E. coli*	27	68	34	93	93	16	19	326	32	50	49	0%
Rippowam 11	*E. coli*	24	28	33	31	123	27	46	267	26	69	47	0%
Rippowam 10	*E. coli*	40	173	172	99	163	202	93	921	435	29	146	10%
Rippowam 9	*E. coli*	47	172	120	322	228	156	1733	3973	182	428	300	20%
Rippowam 8	*E. coli*	219	228	227	158	164	79	548	323	90	126	185	0%
Rippowam 7	*E. coli*	91	2420	N/A	126	N/A	334	1159	2747	257	666	516	50%
Rippowam 5	*E. coli*	219	>2420	523	1373	1462	796	3683	3266	445	774	1062	70%
Rippowam 4	*E. coli*	345	1414	227	177	498	221	4839	2599	370	263	552	30%
Rippowam 3	*E. coli*	167	1986	391	615	1226	409	4839	2240	237	258	696	50%
Rippowam 2	*E. coli*	179	>2420	252	275	666	6932	494	1549	714	689	744	60%
Rippowam 0.5	*Enterococci*	<10	2613	109	109	331	464	160	7270	5794	145	369	30%
Weather		Wet	Wet	Dry	Wet	Dry	Dry	Dry	Dry	Dry	Dry		

Table A12.3. Rippowam River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Rippowam 12	19.8	6.78	234
Rippowam 11.5	20.0	8.40	240
Rippowam 11	22.5	7.23	230
Rippowam 10	22.5	7.87	231
Rippowam 9	20.3	7.58	281
Rippowam 8	20.2	8.21	371
Rippowam 7	19.7	8.60	441
Rippowam 5	20.2	8.67	510
Rippowam 4	20.6	8.28	506
Rippowam 3	20.6	8.98	529
Rippowam 2	21.0	9.02	557
Rippowam 0.5	21.6	9.16	12801

Appendix 13: Sasco Brook

Table A13.1. GPS coordinates and site locations for Sasco Brook.

Site Name	Latitude	Longitude	Site location notes	River Name
Sasco 9	41.15280	-73.30605	210 Hulls Farm Road	Sasco Brook
Hunt Club 2	41.14786	-73.30736	Bulkley Avenue N	Unnamed Tributary
Hunt Club 1	41.14587	-73.30357	Ulbrick Lane	Unnamed Tributary
Sasco 7	41.14573	-73.30314	8 Ulbrick Lane	Sasco Brook
Sasco 6	41.14556	-73.30111	Old Road	Sasco Brook
Sasco 4	41.13813	-73.29793	Route 1	Sasco Brook
Sasco 3	41.13702	-73.29708	408 Greens Farm Road	Sasco Brook
Sasco 2	41.13293	-73.29675	32 Westway Road	Sasco Brook
Sasco 1	41.12478	-73.29888	Pequot Avenue	Sasco Brook

Table A13.2. Sasco Brook *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: City of Norwalk Rain Gauge, Bill Mooney, Personal Communication October 20, 2021).

	Indicator bacteria	5/4/2021	5/24/2021	6/1/2021	6/15/2021	6/29/2021	7/20/2021	8/9/2021	8/26/2021	9/1/2021	9/14/2021	Geomean	% exceeding SSM
Sasco 9	*E. coli*	>2420	172	267	345	345	308	225	157	922	122	332	20%
Hunt Club 2	*E. coli*	>2420	158	210	1733	2407	435	488	1733	>4839	449	877	50%
Hunt Club 1	*E. coli*	>2420	99	517	1203	770	816	921	1203	821	124	635	70%
Sasco 7	*E. coli*	>2420	96	461	579	124	184	222	238	409	99	281	20%
Sasco 6	*E. coli*	2420	102	156	236	411	120	126	140	523	74	223	10%
Sasco 4	*E. coli*	2240	104	224	496	429	118	232	149	1373	108	304	20%
Sasco 3	*Enterococci*	3654	175	185	833	813	275	771	480	24196	171	713	50%
Sasco 2	*Enterococci*	3255	10	315	1198	145	246	241	275	988	323	314	30%
Sasco 1	*Enterococci*	4106	134	377	1291	30	63	388	183	41	359	236	20%
Weather		Wet	Dry	Wet	Wet	Dry	Wet	Wet	Dry	Wet	Dry		

Table A13.3. Sasco Brook mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
Sasco 9	19.4	8.60	215
Hunt Club 2	17.2	7.21	290
Hunt Club 1	17.5	7.89	297
Sasco 7	18.8	8.52	247
Sasco 6	18.9	9.14	227
Sasco 4	19.2	8.98	235
Sasco 3	19.1	8.04	441
Sasco 2	20.2	8.06	18618
Sasco 1	20.4	6.99	25919

Appendix 14: Saugatuck River

Table A14.1. GPS coordinates and site locations for the Saugatuck River.

Site Name	Latitude	Longitude	Site location notes	River Name
West Saug 6	41.2573	-73.41533	86 Old Farm Road	West Branch Saugatuck River
West Saug 5	41.24954	-73.41377	20 Indian Valley Road	West Branch Saugatuck River
West Saug 4	41.22465	-73.38366	3 Michaels Way	West Branch Saugatuck River
West Saug 3	41.21162	-73.388	Intersection of Georgetown Road and Old Mill Road	West Branch Saugatuck River
West Saug 2	41.1948	-73.38763	23 Stonebridge Road	West Branch Saugatuck River
West Saug 1.5	41.178204	-73.38003	173 Newtown Turnpike	West Branch Saugatuck River
Saugatuck 7	41.29439	-73.3948	Route 53 and 107 intersection	Saugatuck River
Saugatuck 6	41.24343	-73.34785	153 Valley Forge Road	Saugatuck River
Saugatuck 5	41.22469	-73.3467	18 Davis Hill Road	Saugatuck River
Saugatuck 4	41.20722	-73.35043	1 Cartbridge Road	Saugatuck River
Saugatuck 3	41.1883	-73.36441	27 River Road	Saugatuck River
Saugatuck 2	41.17553	-73.36193	Weston Road	Saugatuck River
Saugatuck 1	41.16748	-73.36647	Pulloff by Michele Ln on Clinton Avenue	Saugatuck River
Saugatuck 0.75	41.14719	-73.36469	Kings Highway North	Saugatuck River
Saugatuck 0.5	41.14098	-73.36312	State Street East	Saugatuck River
Saugatuck 0.25	41.12274	-73.36912	Bridge Street	Saugatuck River

Table A14.2. Saugatuck River *E. coli* and *Enterococci* concentrations (MPN/100mL), geometric means, and % of samples exceeding the CT DEEP single sample maximum (Rainfall data: City of Norwalk Rain Gauge, Bill Mooney, Personal Communication October 20, 2021).

	Indicator bacteria	5/11/2021	5/19/2021	6/7/2021	6/16/2021	7/12/2021	7/29/2021	8/3/2021	8/17/2021	9/7/2021	9/21/2021	Geomean	% exceeded SSM
West Saug 6	*E. coli*	17	7	291	58	156	33	258	4	91	26	44	0%
West Saug 5	*E. coli*	71	47	26	44	326	21	12	20	411	7	42	0%
West Saug 4	*E. coli*	48	24	17	90	303	29	20	193	461	40	64	0%
West Saug 3	*E. coli*	78	14	66	13	82	15	13	31	125	15	31	0%
West Saug 2	*E. coli*	75	115	66	345	142	66	41	65	118	224	103	0%
West Saug 1.5	*E. coli*	N/A	43	91	152	142	62	51	68	167	79	86	0%
Saugatuck 7	*E. coli*	50	65	46	77	99	33	50	55	79	26	54	0%
Saugatuck 6	*E. coli*	<1	12	1	<1	7	4	4	2	29	23	4	0%
Saugatuck 5	*E. coli*	10	20	33	47	111	137	59	125	54	114	54	0%
Saugatuck 4	*E. coli*	17	43	46	99	133	48	62	79	111	155	67	0%
Saugatuck 3	*E. coli*	15	15	77	75	84	46	36	57	147	60	49	0%
Saugatuck 2	*E. coli*	55	172	130	88	172	58	26	32	160	79	80	0%
Saugatuck 1	*E. coli*	37	51	78	122	115	99	58	70	N/A	73	73	0%
Saugatuck 0.75	*Enterococci*	10	<10	86	135	213	73	52	31	86	10	44	0%
Saugatuck 0.5	*Enterococci*	20	20	31	63	231	41	20	41	74	97	46	0%
Saugatuck 0.25	*Enterococci*	10	52	10	10	256	63	41	52	97	41	38	0%
Weather		Wet	Dry	Dry	Wet	Wet	Wet	Dry	Dry	Wet	Dry		

Table A14.3. Saugatuck River mean water temperature, dissolved oxygen, and conductivity for each site.

	Mean Water Temp (°C)	Mean Dissolved Oxygen (mg/L)	Mean Conductivity (µmho/cm)
West Saug 6	16.8	9.53	397
West Saug 5	17.1	8.87	242
West Saug 4	19.3	8.74	187
West Saug 3	18.9	7.55	201
West Saug 2	18.8	8.70	248
West Saug 1.5	19.4	8.44	257
Saugatuck 7	18.9	8.81	313
Saugatuck 6	13.5	11.30	236
Saugatuck 5	15.4	9.74	233
Saugatuck 4	16.1	9.86	240
Saugatuck 3	17.4	9.65	250
Saugatuck 2	18.1	8.92	243
Saugatuck 1	18.4	8.37	237
Saugatuck 0.75	20.2	7.74	12583
Saugatuck 0.5	21.0	6.82	29390
Saugatuck 0.25	20.9	7.40	35109

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