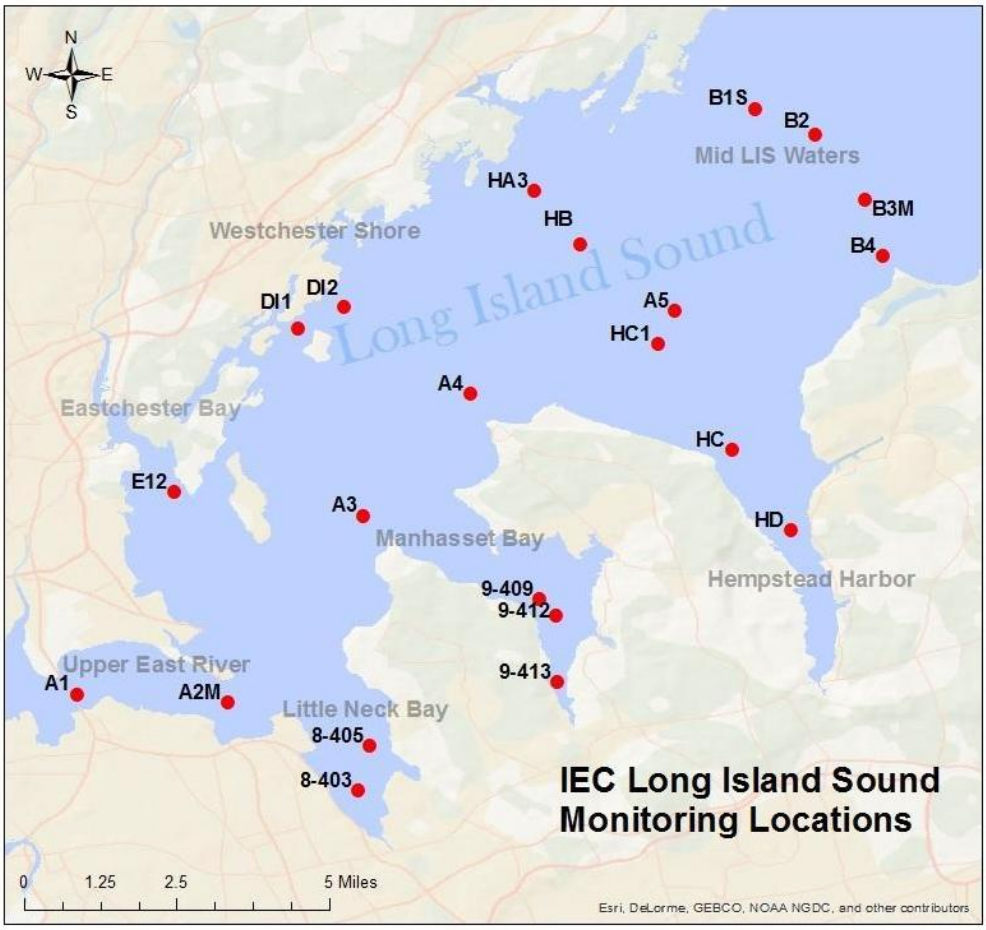
Western Long Island Sound Monitoring
2025 Summer Survey Biweekly Summary
Surveys #1 & #2
Survey Dates: June 24, 2025 & July 1, 2025



STATION	LATITUDE	LONDITUDE
8-403	40.7778	-73.7608
8-405	40.7888	-73.7582
9-409	40.8240	-73.7175
9-412	40.8200	-73.7135
9-413	40.8041	-73.7133
A1	40.8013	-73.8045
A2M	40.7992	-73.7913
A3	40.8433	-73.7590
A4	40.8725	-73.7343
A5	40.8923	-73.6853
B1S	40.9403	-73.6667
B2	40.9343	-73.6520
B3M	40.9187	-73.6403
B4	40.9054	-73.6360
DI1	40.8883	-73.7748
DI2	40.8930	-73.7642
E-12	40.8487	-73.8045
H-A3	40.9207	-73.7187
H-B	40.9080	-73.7090
H-C	40.8590	-73.6717
H-C1	40.8853	-73.6903
H-D	40.8402	-73.6572

Table 1. List of IEC Western Long Island Sound sampling station coordinates in decimal degrees

As a part of the Long Island Sound Partnership's ongoing water quality monitoring program, IEC started its 35th consecutive summer of weekly ambient monitoring surveys in western Long Island Sound and the upper East River on Tuesday, June 24th, 2025.

Interstate Environmental Commission
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Throughout the summer of 2025, IEC staff will perform 12 weekly surveys at each of the 22 stations in the far western Long Island Sound to assess seasonal hypoxic conditions. Hypoxia occurs when dissolved oxygen ("DO") concentrations become low. Marine organisms need oxygen to live and low oxygen concentrations can have serious consequences for a marine ecosystem.

The 12 surveys include weekly *in situ* measurements of water temperature, salinity, dissolved oxygen, pH, turbidity, and Secchi disk depth. Measurements at each station are taken half a meter below the surface, at mid-depth, and half a meter above the bottom.

Biweekly surveys will include collection of additional samples for parameters relevant to hypoxia at 11 of the 22 stations (stations listed in **bold** in Table 1). These samples will be analyzed for nutrients, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and chlorophyll *a*, in addition to the suite of *in situ* parameters listed above.

Nutrient parameters that will be analyzed include Ammonia, Nitrate+Nitrite, Particulate Nitrogen, Total Dissolved Nitrogen, Orthophosphate/DIP, Total Dissolved Phosphorus, Particulate Phosphorus, Dissolved Organic Carbon, Particulate Carbon, Dissolved Silica, and Biogenic Silica.

In October 2022, IEC also began collecting dissolved inorganic carbon (DIC) and Total Alkalinity samples to monitor coastal acidification. In aquatic ecosystems, **DIC** acts as a source of carbon for photosynthesis and has a function in controlling the pH. Increased atmospheric CO_2 gas may lead to coastal acidification, which can pose a significant threat to marine life, including calcifying organisms like corals and shellfish that make hard shells and skeletons by combining calcium and carbonate from seawater. **Total Alkalinity** is the capacity of water to resist (buffer against) a change in pH when acidity is added. As CO_2 from the atmosphere and from decay of algal blooms increases in LIS, Total Alkalinity guards against pH changes and coastal acidification.

Proposed 2025 Summer Schedule		
Date	**Survey Number**	**Parameters**
06/24/2025	**1**	***In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity**
07/01/2025	**2**	***In situ* parameters only**
07/08/2025	3	*In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
07/17/2025	4	*In situ* parameters only
07/22/2025	5	*In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
07/29/2025	6	*In situ* parameters only
08/05/2025	7	*In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
08/12/2025	8	*In situ* parameters only
08/19/2025	9	*In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
08/26/2025	10	*In situ* parameters only
09/03/2025	11	*In situ,* nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
09/09/2025	12	*In situ* parameters only

Seasonal intern Navairah Farooqi collecting DIC/Total Alkalinity samples during Survey #1

A bevy of swans swimming near DI-1 during Survey #2

SURVEY #1 AT A GLANCE 06/24/2025

Hypoxia (DO < 3.00 mg/L)	**No stations exhibited hypoxia at surface or bottom depths**
Lowest surface DO concentration	3.10 mg/L (Station 9-413 in Manhasset Bay)
Lowest bottom DO concentration	3.10 mg/L (Station 9-413 in Manhasset Bay)
Average surface DO concentration	7.98 mg/L
Average bottom DO concentration	5.55 mg/L
Average surface water temperature	21.45 ℃
Average bottom water temperature	18.59 ℃
Average water column ΔT (Surface-Bottom)	2.86 ℃
Average surface salinity	24.82 ppt
Average bottom salinity	25.43 ppt
Lowest surface pH	7.05 S.U. (Station 9-413 in Manhasset Bay)
Lowest bottom pH	7.05 S.U. (Station 9-413 in Manhasset Bay)
Average surface pH	7.75 S.U.
Average bottom pH	7.49 S.U.

Survey #1 Narrative Summary

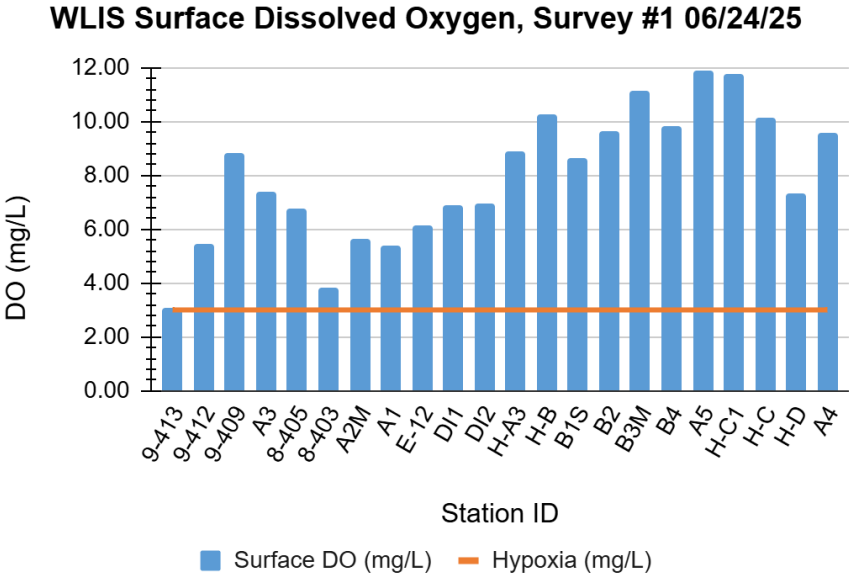
This survey began at 06:13 and ended at 11:14, with the most recent low tide at 05:17 and 05:35 at New Rochelle, NY and Kings Point, NY, respectively. The weather conditions were hot and mostly sunny, with cloud coverage remaining at 0% throughout the entire survey. Air temperatures increased from 83°F to 95°F. The weather station at LaGuardia Airport reported a total of 0.00" and 0.08" of precipitation during the 24- and 48-hour periods prior to the start of the survey, respectively. Secchi disk measurements ranged from 0.5 meters to 1.75 meters.

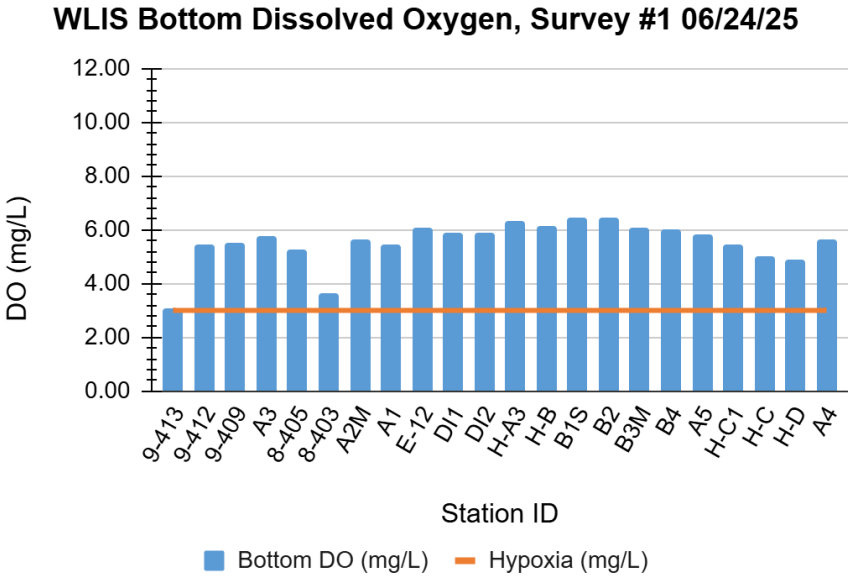
No stations exhibited hypoxia at surface or bottom depth. There have been no hypoxic stations during Survey #1 since 2022 (9-413 in Manhasset Bay at both surface and bottom depth on June 28, 2022). **Average surface DO was *higher* during this survey compared to Survey #1 in 2024 and average bottom DO was *lower*.** Average Surface DO: 7.98 mg/L in 2025 vs 7.34 mg/L in 2024. Average Bottom DO: 5.55 mg/L in 2025 vs 5.96 mg/L in 2024.

Average surface and bottom water temperatures during this survey were *higher* compared to Survey #1 in 2024. Average Surface Temperature: 21.45 ℃ in 2025 vs 17.76 ℃ in 2024. Average Bottom Temperature: 18.59 ℃ in 2025 vs 17.96 ℃ in 2024.

Average surface and bottom salinity during this survey were *higher* compared to Survey #1 in 2024. Average Surface Salinity: 24.82 ppt in 2025 vs 24.39 ppt in 2024. Average Bottom Salinity: 25.43 ppt in 2025 vs 24.43 ppt in 2024.

Average surface pH during this survey was *higher* compared to Survey #1 in 2024, while average bottom pH was *lower*. Average Surface pH: 7.75 in 2025 vs 7.70 in 2024. Average Bottom pH: 7.49 in 2025 vs 7.74 in 2024.





The Long Island Sound Partnership defines hypoxia as DO values which are below a concentration of 3.00 mg/L.

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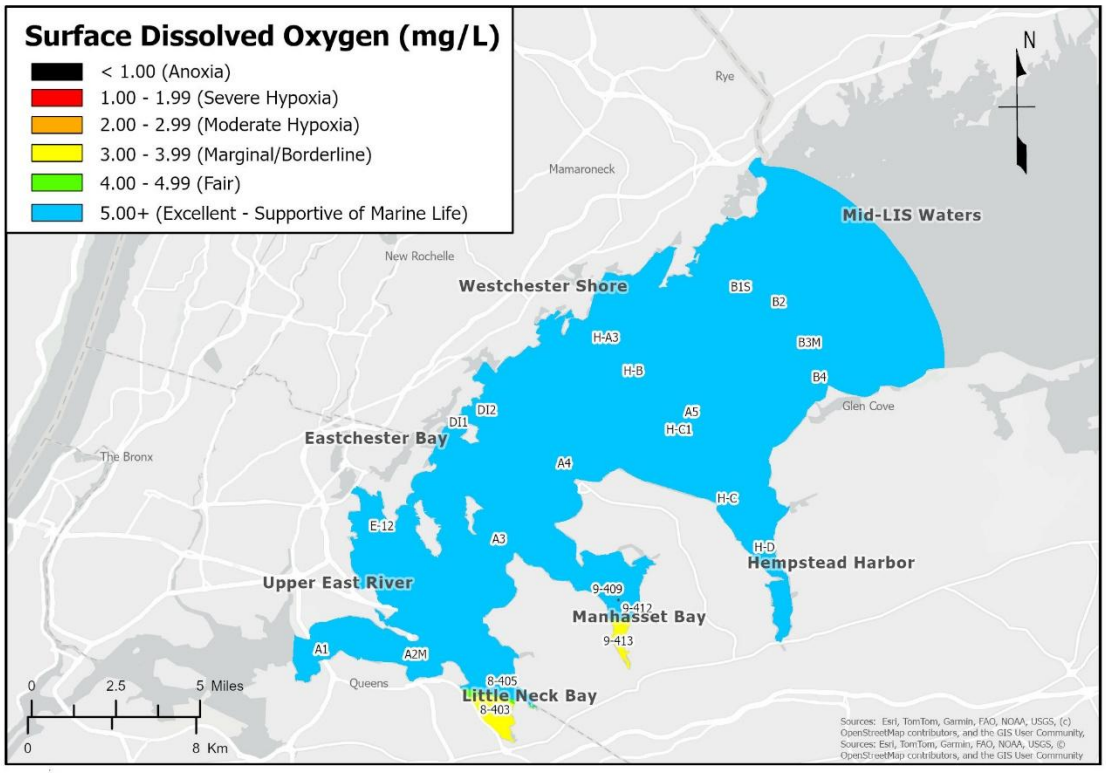
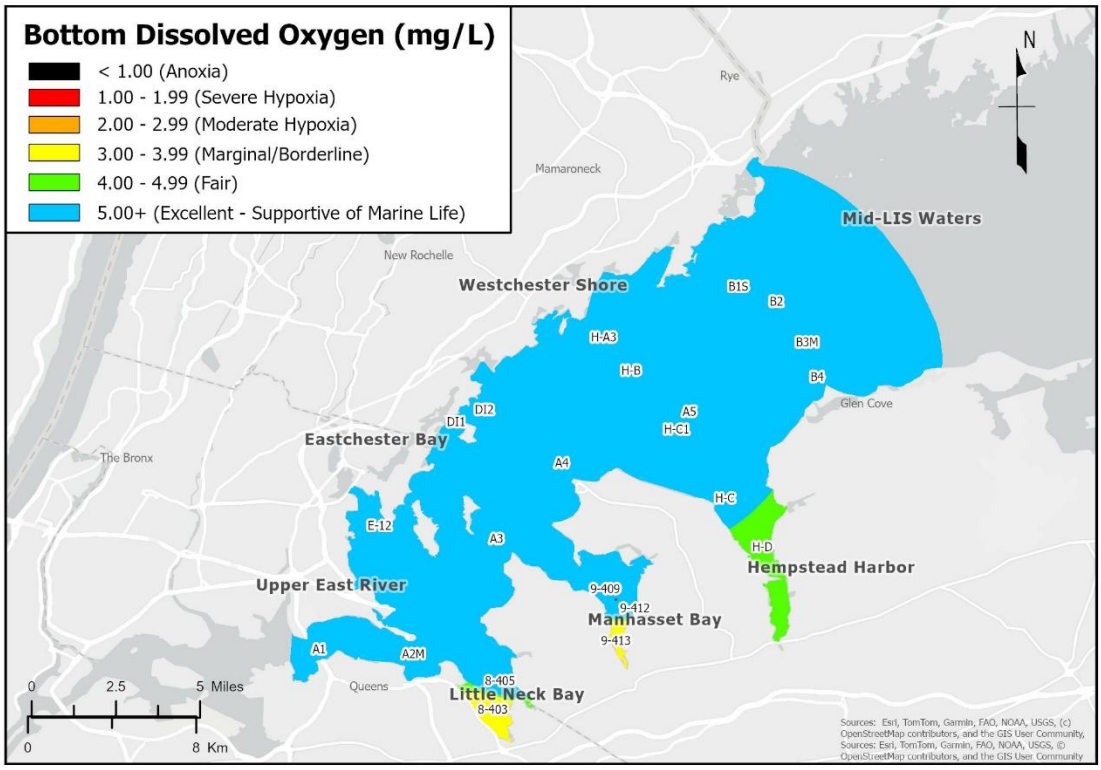
Ambient Water Quality Monitoring of the Western Long Island Sound

Weekly Survey #1: June 24, 2025





IDW Interpolation, Power 10 | Map by: Samantha Wilder | Map made: 09/25/2025

SURVEY #2 AT A GLANCE 07/01/2025

Hypoxia (DO < 3.00 mg/L)	**No stations exhibited hypoxia at surface or bottom depths**
Lowest surface DO concentration	5.68 mg/L (Station 9-413 in Manhasset Bay)
Lowest bottom DO concentration	3.33 mg/L (Station 9-413 in Manhasset Bay)
Average surface DO concentration	8.15 mg/L
Average bottom DO concentration	5.33 mg/L
Average surface water temperature	22.53 ℃
Average bottom water temperature	20.18 ℃
Average water column ΔT (Surface-Bottom)	2.35 ℃
Average surface salinity	25.10 ppt
Average bottom salinity	25.55 ppt
Lowest surface pH	7.42 S.U. (Station 9-413 in Manhasset Bay)
Lowest bottom pH	7.11 S.U. (Station 9-413 in Manhasset Bay)
Average surface pH	7.79 S.U
Average bottom pH	7.46 S.U.

Survey #2 Narrative Summary

The survey began at 06:22 and ended at 10:24, with the most recent high tide at 04:33 and 04:49 at New Rochelle, NY and Kings Point, NY, respectively. The weather conditions transitioned from overcast to mostly cloudy with cloud coverage varying between 20% and 100% throughout the survey. The average air temperature was 80 °F. The weather station at LaGuardia Airport reported a total of 0.12" of precipitation for both the 24- and 48-hour periods prior to the start of the survey. Secchi disk measurements ranged from 0.5 meters to 1.25 meters.

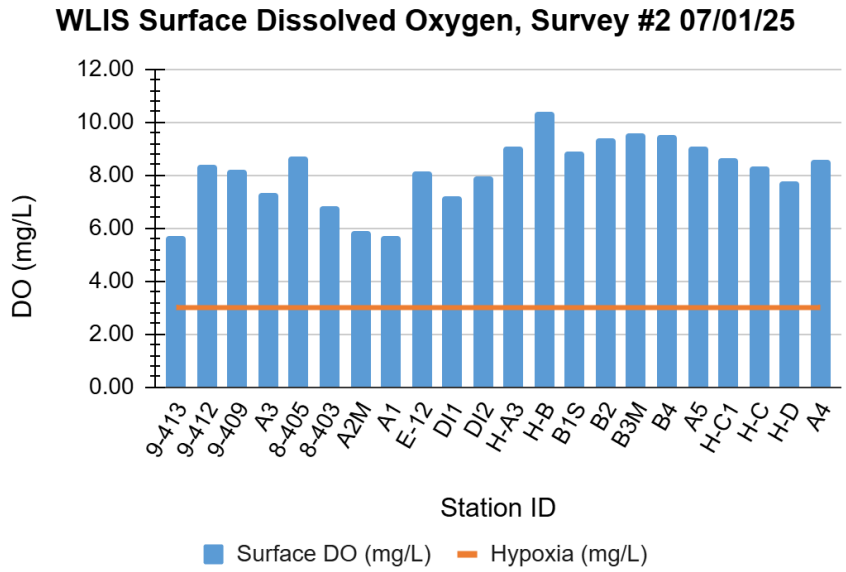
No stations exhibited hypoxia at surface or bottom depth. **Average surface and bottom DO were *lower* this year compared to Survey #2 in 2024.** Average Surface DO: 8.15 mg/L in 2025 vs 8.36 mg/L in 2024. Average Bottom DO: 5.33 mg/L in 2025 vs 5.56 mg/L in 2024.

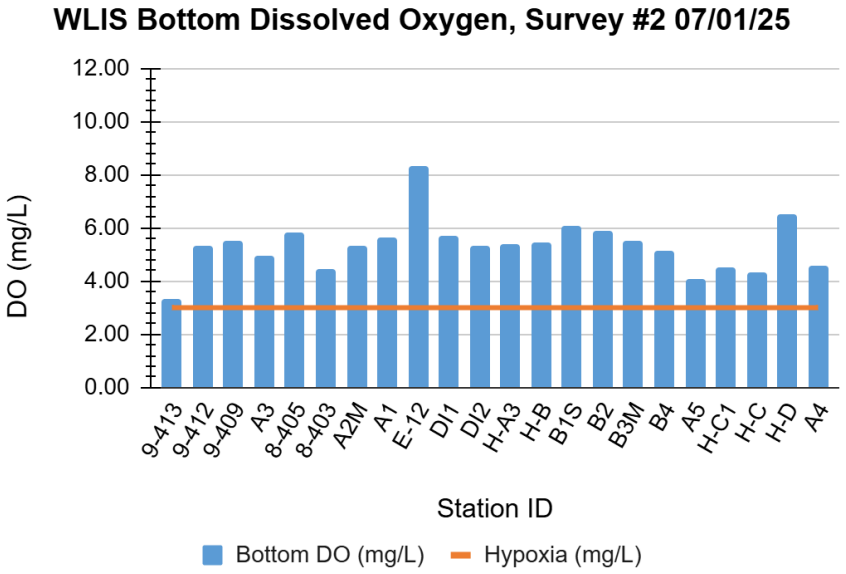
Average surface and bottom temperatures during this survey were *higher* compared to Survey #2 in 2024. Average Surface Temperature: 22.53 ℃ in 2025 vs 19.55 ℃ in 2024. Average Bottom Temperature: 20.18 ℃ in 2025 vs 17.78 ℃ in 2024.

Average surface and bottom salinity during this survey were *higher* compared to Survey #2 in 2024. Average Surface Salinity: 25.10 ppt in 2025 vs 24.73 ppt in 2024. Average Bottom Salinity: 25.55 ppt in 2025 vs 25.33 ppt in 2024.

Average surface and bottom pH during this survey were *lower* compared to Survey #2 in 2024. Average Surface

pH: 7.79 in 2025 vs 7.84 in 2024. Average Bottom pH: 7.46 in 2025 vs 7.54 in 2024.





The Long Island Sound Partnership defines hypoxia as DO values which are below a concentration of 3.00 mg/L.

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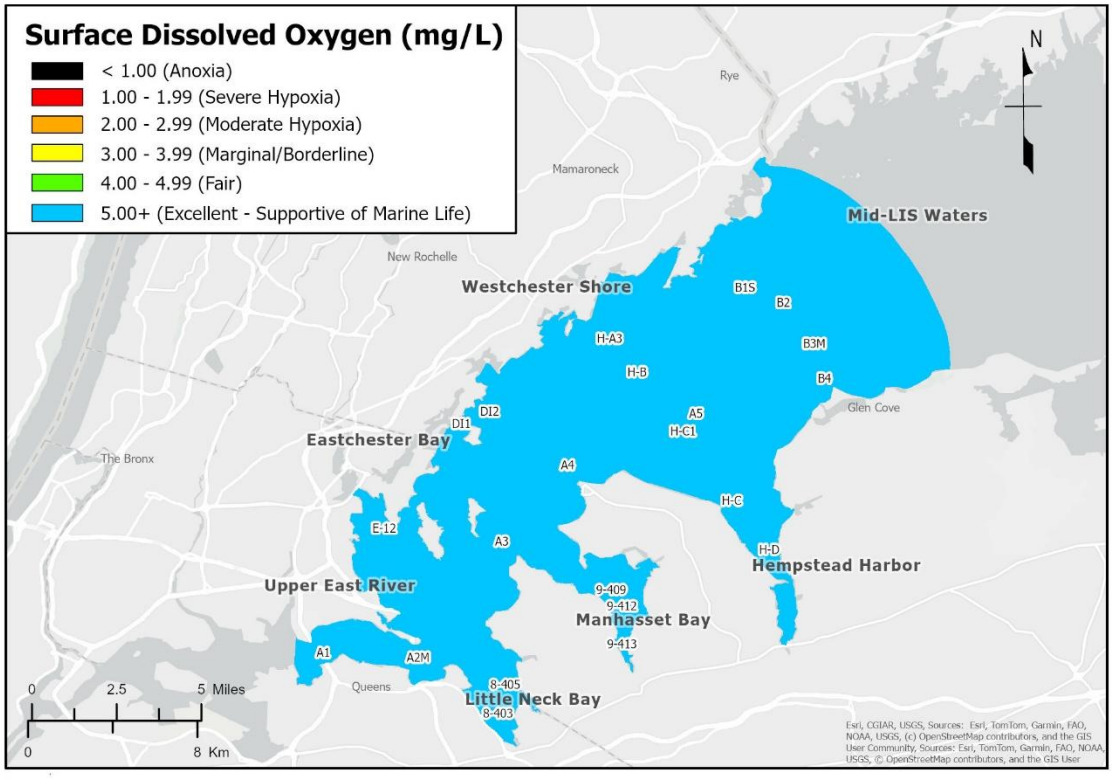
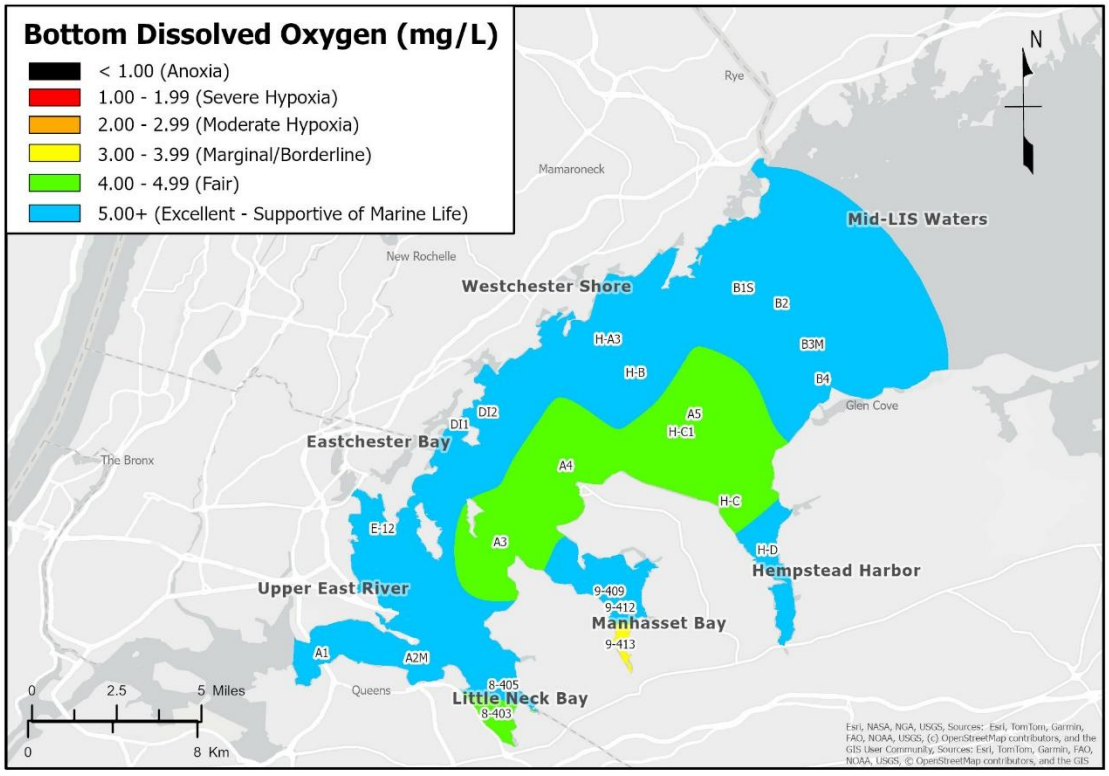
Weekly Survey #2: July 1, 2025





IDW Interpolation, Power 10 | Map by: Samantha Wilder | Map made: 09/25/2025