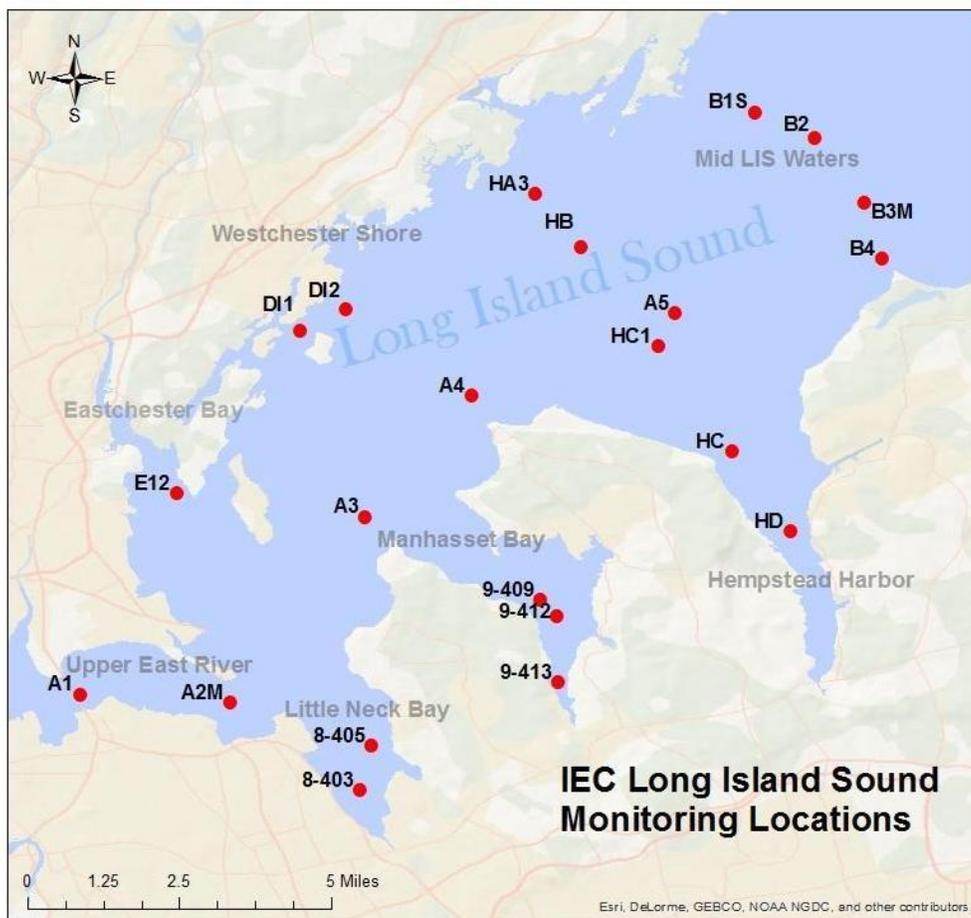




# Western Long Island Sound Monitoring 2025 Summer Survey Biweekly Summary Surveys #1 & #2 Survey Dates: June 24, 2025 & July 1, 2025



STATION	LATITUDE	LONITUDE
<b>8-403</b>	40.7778	-73.7608
8-405	40.7888	-73.7582
9-409	40.8240	-73.7175
<b>9-412</b>	40.8200	-73.7135
9-413	40.8041	-73.7133
A1	40.8013	-73.8045
<b>A2M</b>	40.7992	-73.7913
A3	40.8433	-73.7590
<b>A4</b>	40.8725	-73.7343
<b>A5</b>	40.8923	-73.6853
<b>B1S</b>	40.9403	-73.6667
B2	40.9343	-73.6520
<b>B3M</b>	40.9187	-73.6403
B4	40.9054	-73.6360
DI1	40.8883	-73.7748
<b>DI2</b>	40.8930	-73.7642
<b>E-12</b>	40.8487	-73.8045
<b>H-A3</b>	40.9207	-73.7187
H-B	40.9080	-73.7090
H-C	40.8590	-73.6717
H-C1	40.8853	-73.6903
<b>H-D</b>	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 35<sup>th</sup> consecutive summer of weekly ambient monitoring surveys in western Long Island Sound and the upper East River on Tuesday, June 24<sup>th</sup>, 2025.

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.

**Interstate Environmental Commission**  
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 Brooklyn, NY 11220

Nutrient parameters that will be analyzed include Ammonia, Nitrate+Nitrite, Particulate 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<sub>2</sub> gas may lead to coastal acidification,<sup>[EPI]</sup> 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<sub>2</sub> 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	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
07/01/2025	2	<i>In situ</i> parameters only
07/08/2025	3	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
07/17/2025	4	<i>In situ</i> parameters only
07/22/2025	5	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
07/29/2025	6	<i>In situ</i> parameters only
08/05/2025	7	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
08/12/2025	8	<i>In situ</i> parameters only
08/19/2025	9	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
08/26/2025	10	<i>In situ</i> parameters only
09/03/2025	11	<i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity
09/09/2025	12	<i>In situ</i> 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

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

### Survey #1 Narrative Summary

This survey began at 06:53 and ended at 11:42, 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 period prior to the start of the survey, respectively. Secchi disk measurements ranged from 0.5 meters to 1.75 meters.

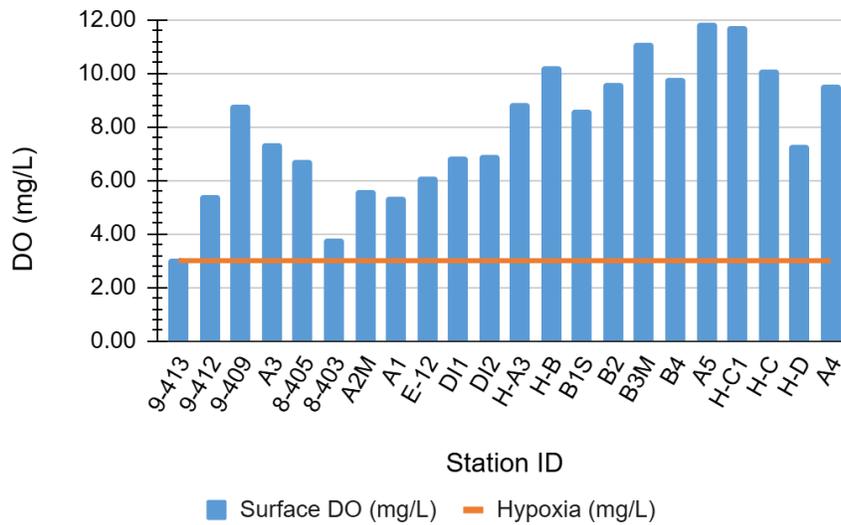
**No stations exhibited hypoxia at surface or bottom depths.** There have been no hypoxic stations during Survey #1 since 2022 (9-413 in Manhasset Bay at both surface and bottom depths on June 28, 2022). **Average surface DO concentrations were *higher* during this survey compared to Survey #1 in 2024 and average bottom DO concentrations were *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 were *higher* compared to the averages for Survey #1 in 2024.** Average Surface Temperature: 21.45 °C in 2025 vs 17.76 °C in 2024. Average Bottom Temperature: 18.59 °C in 2025 vs 17.96 °C in 2024.

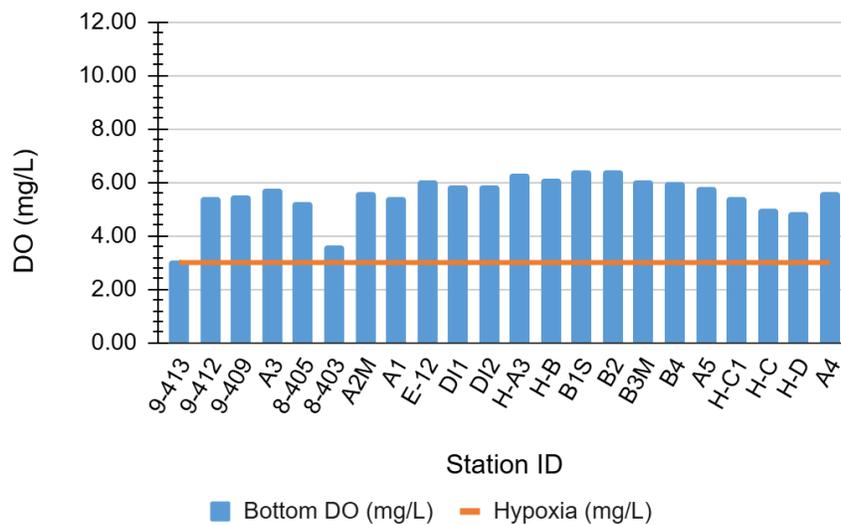
**Average surface and bottom salinity were *higher* compared to the averages for Survey #1 in 2024.** Average Surface Salinity: 24.82 ppt in 2025 vs 24.39 ppt in 2024. Average Bottom Salinity: 25.43 ppt in 2025 vs 24.43 ppt in 2024.

Average surface pH 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.

**WLIS Surface Dissolved Oxygen, Survey #1 06/24/25**



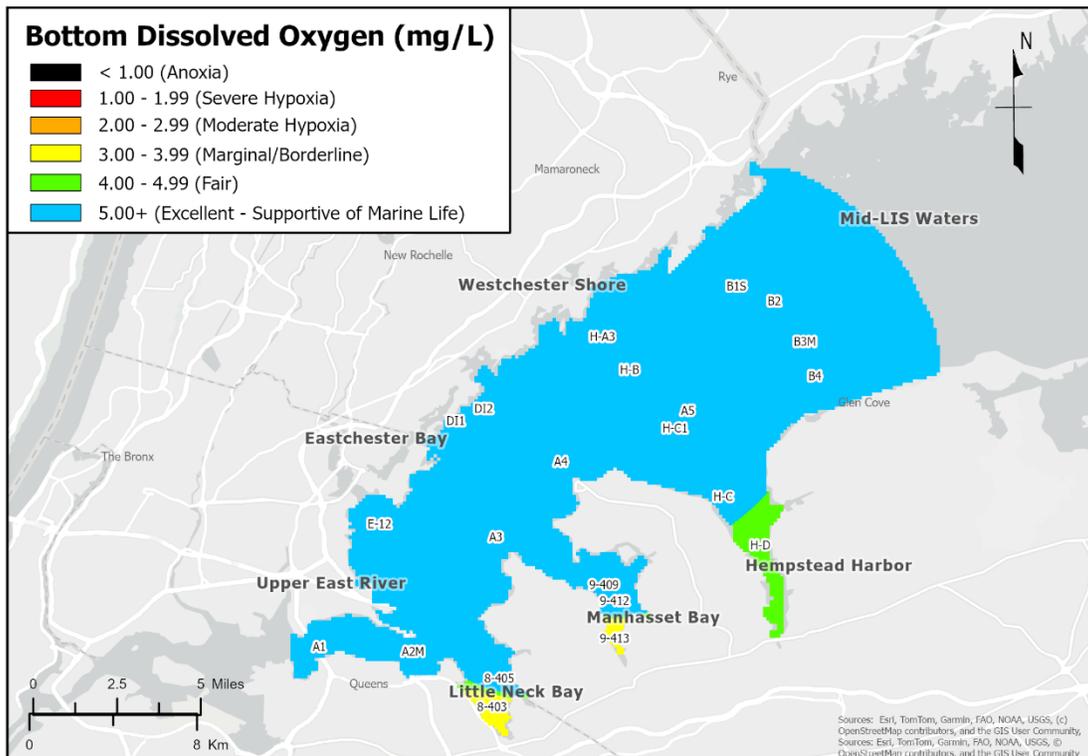
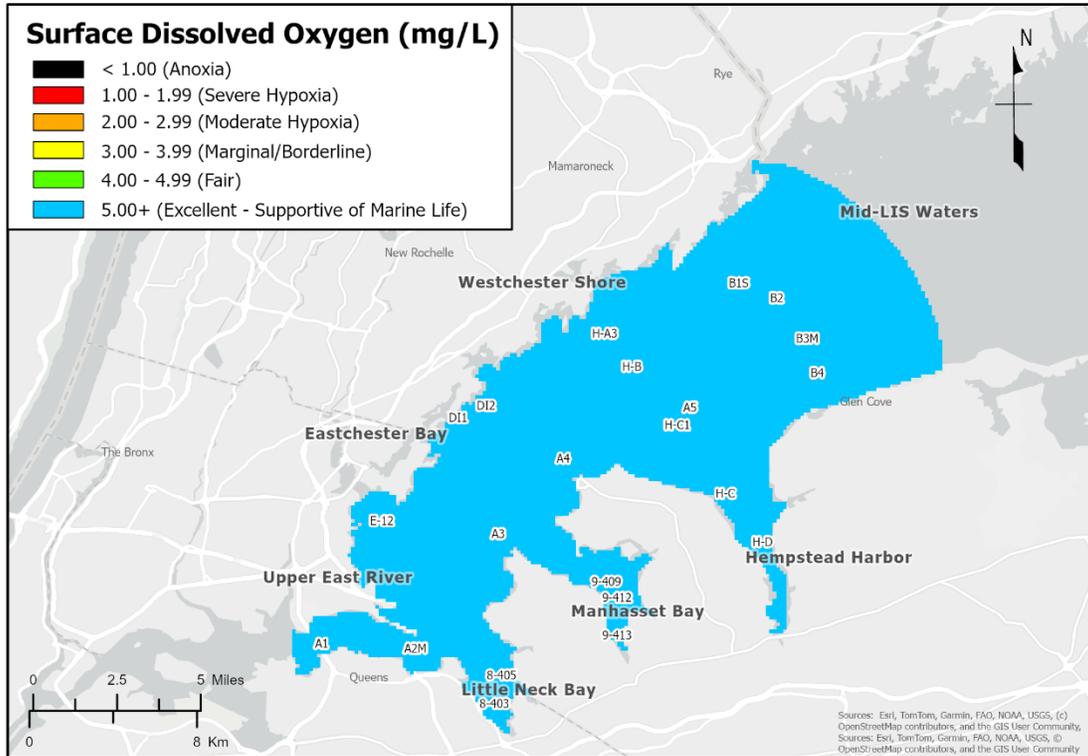
**WLIS Bottom Dissolved Oxygen, Survey #1 06/24/25**



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

# Interstate Environmental Commission 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: 06/26/2025

## SURVEY #2 AT A GLANCE 07/01/2025

<b>Hypoxia (DO &lt; 3.00 mg/L)</b>	<b>No stations exhibited hypoxia at surface or bottom depths</b>
<b>Lowest surface DO concentration</b>	5.68 mg/L (Station 9-413 in Manhasset Bay)
<b>Lowest bottom DO concentration</b>	3.33 mg/L (Station 9-413 in Manhasset Bay)
<b>Average surface DO concentration</b>	8.15 mg/L
<b>Average bottom DO concentration</b>	5.33 mg/L
<b>Average surface water temperature</b>	22.53 °C
<b>Average bottom water temperature</b>	20.18 °C
<b>Average water column ΔT (Surface-Bottom)</b>	2.35 °C
<b>Average surface salinity</b>	25.10 ppt
<b>Average bottom salinity</b>	25.55 ppt
<b>Lowest surface pH</b>	7.42 S.U. (Station 9-413 in Manhasset Bay)
<b>Lowest bottom pH</b>	7.11 S.U. (Station 9-413 in Manhasset Bay)
<b>Average surface pH</b>	7.79 S.U.
<b>Average bottom pH</b>	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 from 20% to 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 period prior to the start of the survey. Secchi disk measurements ranged from 0.5 meters to 1.25 meters.

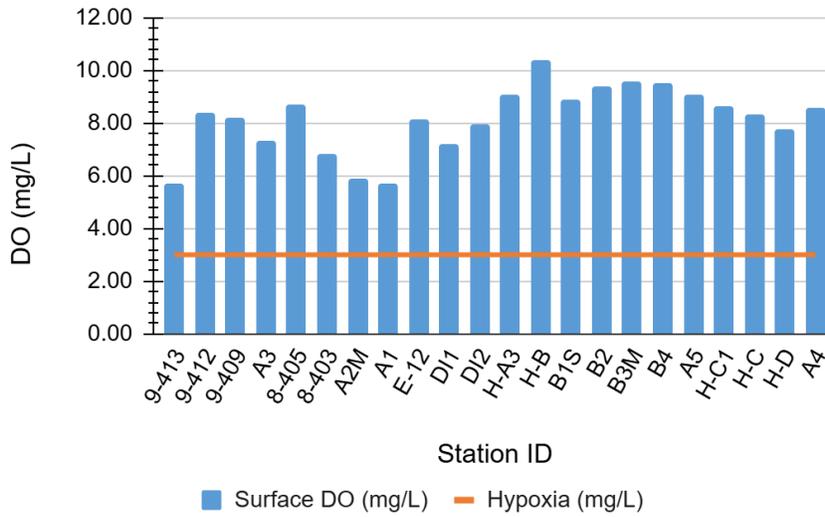
**No stations exhibited hypoxia at surface or bottom depths. Average surface and bottom DO were *lower* this year compared to last year.** Average Surface DO: 8.15 mg/L in 2025 vs 8.36 mg/L in 2024. Average Bottom DO: 5.33 mg/L in 2025 vs 5.56 mg/L in 2024.

**Average temperatures were *higher* compared to Survey # 2 in 2024.** Average Surface Temperature: 22.53 °C in 2025 vs 19.55 °C in 2024. Bottom: 20.18 °C in 2025 vs 17.78 °C in 2024.

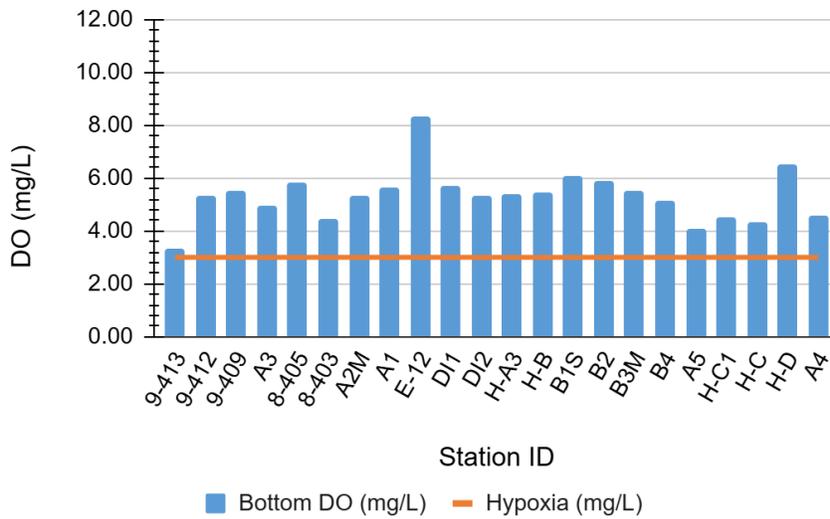
**Average surface and bottom salinity were *higher* compared to the averages for Survey #2 in 2024.** Average Surface Salinity: 25.10 ppt in 2025 vs 24.73 ppt in 2024. Average Bottom Salinity: 25.55 ppt in 2025 vs 25.33 ppt in 2024.

**Average surface and bottom pH were *lower* compared to the averages for 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.

**WLIS Surface Dissolved Oxygen, Survey #2 07/01/25**



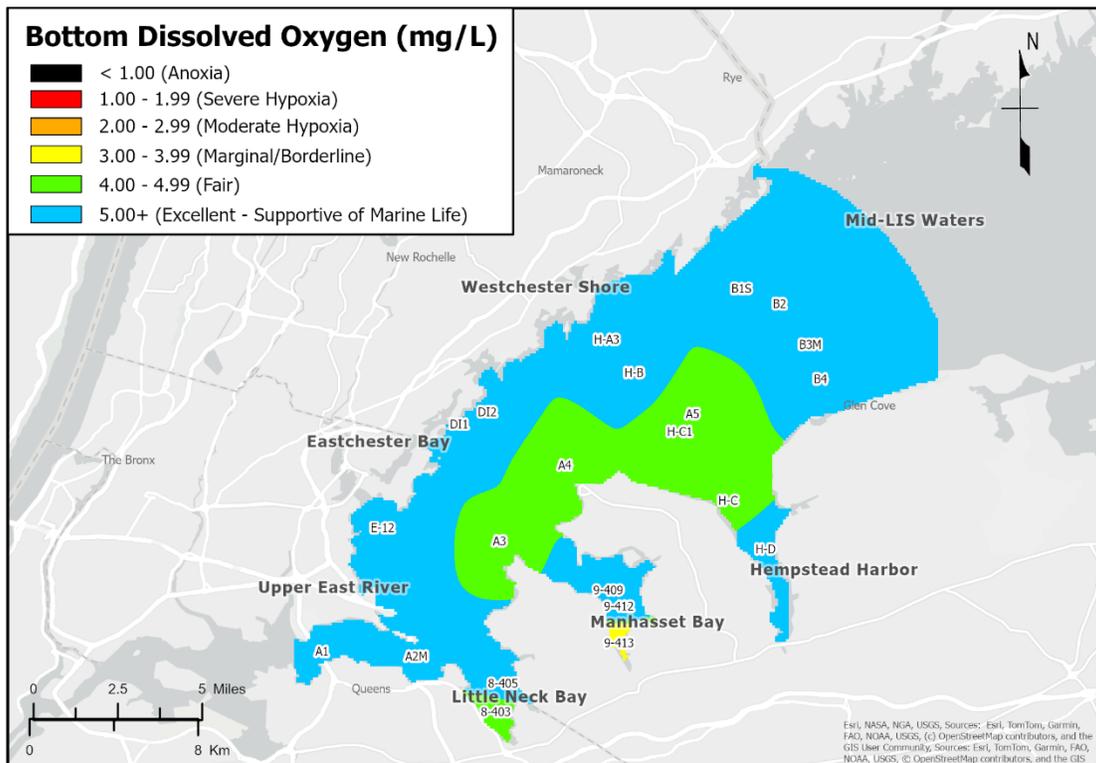
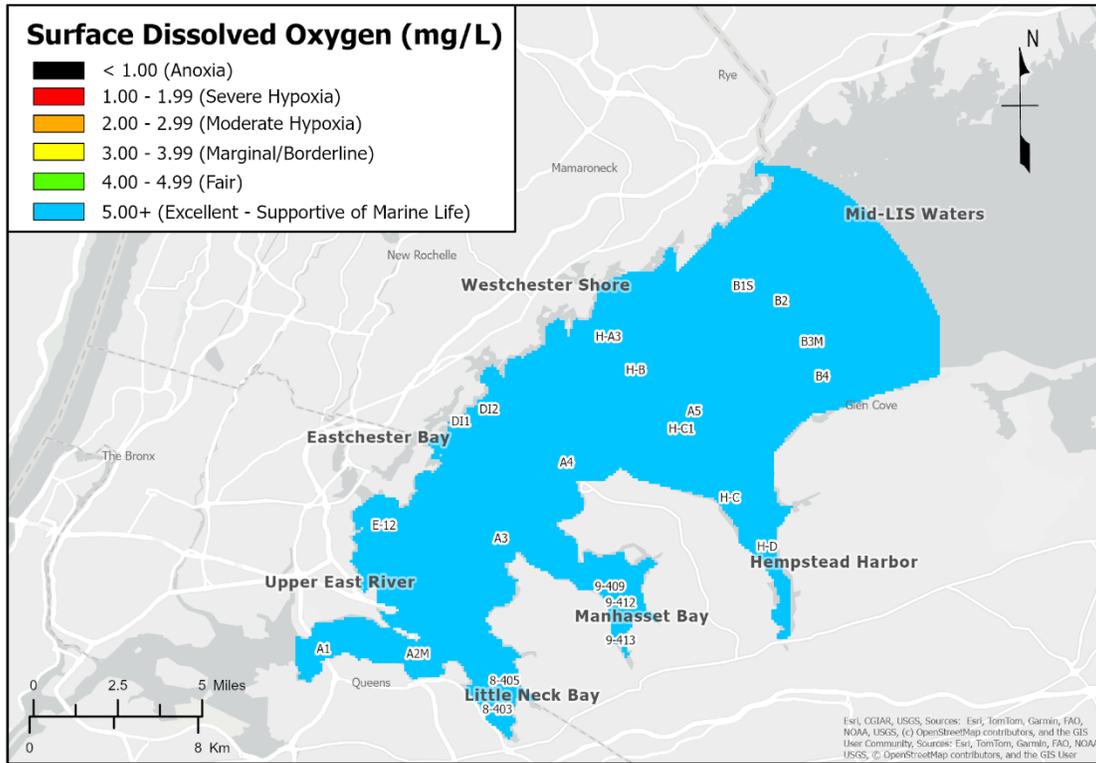
**WLIS Bottom Dissolved Oxygen, Survey #2 07/01/25**



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

# Interstate Environmental Commission Ambient Water Quality Monitoring of the Western Long Island Sound

## Weekly Survey #2: July 1, 2025



IDW Interpolation, Power 10

Map by: Samantha Wilder

Map made: 07/07/2025