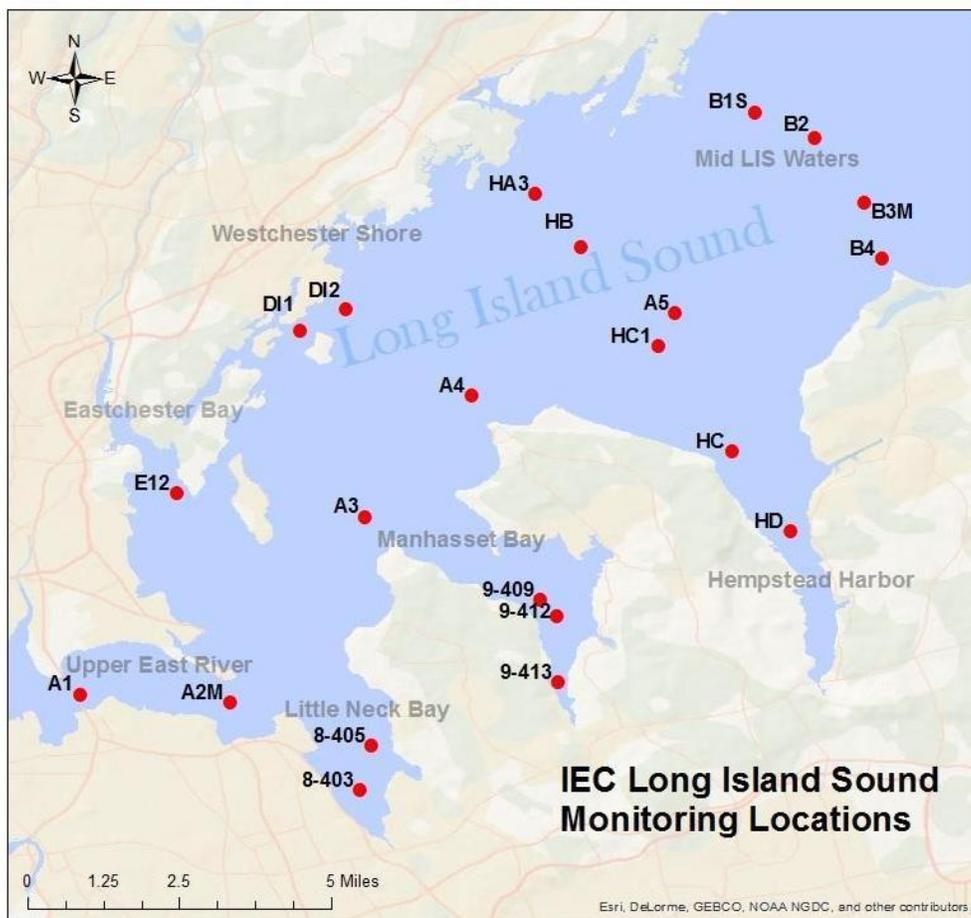




Western Long Island Sound Monitoring 2025 Summer Survey Biweekly Summary Surveys #11 & #12

Survey Dates: September 2, 2025 & September 9, 2025



| STATION | LATITUDE | LONGITUDE |
|--------------|----------|-----------|
| 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 |
| D11 | 40.8883 | -73.7748 |
| D12 | 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.

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.

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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 CO₂ 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 CO₂ 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 |
| 07/18/2025 | 4 | <i>In situ</i> parameters only |
| 07/24/2025 | 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 |
| 09/02/2025 | 11 | <i>In situ</i> , nutrients, chlorophyll a, BOD, TSS, Total Alkalinity |
| 09/09/2025 | 12 | <i>In situ</i> parameters only |



High wind speeds and tall waves during Survey #11



View of the full moon at the start of Survey #12

SURVEY #11 AT A GLANCE 09/02/2025

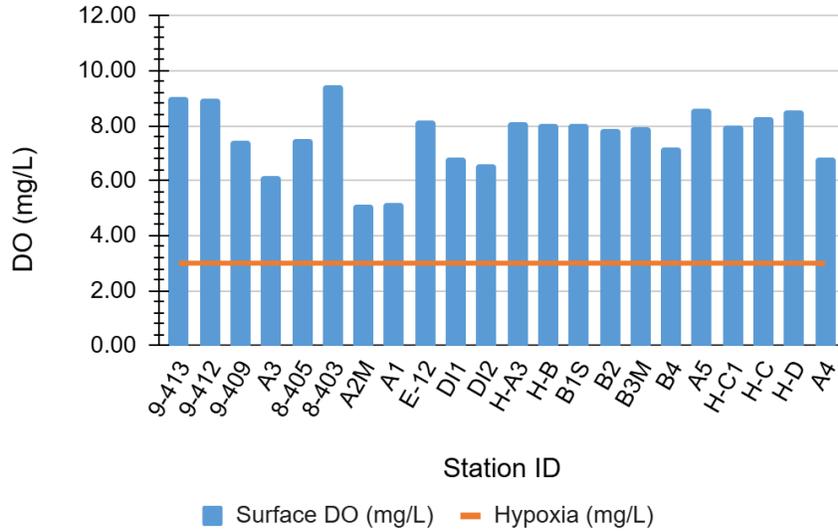
| | |
|---|--|
| Hypoxia (DO < 3.00 mg/L) | No stations exhibited hypoxia at surface or bottom depths |
| Lowest surface DO concentration | 5.11 mg/L (Station A2M in the Upper East River) |
| Lowest bottom DO concentration | 3.30 mg/L (Station H-B on the Westchester Shoreline) |
| Average surface DO concentration | 7.64 mg/L |
| Average bottom DO concentration | 5.08 mg/L |
| Average surface water temperature | 22.13 °C |
| Average bottom water temperature | 21.99 °C |
| Average water column ΔT (Surface-Bottom) | 0.14 °C |
| Average surface salinity | 26.48 ppt |
| Average bottom salinity | 26.85 ppt |
| Lowest surface pH | 7.37 S.U. (Station A1 in the Upper East River) |
| Lowest bottom pH | 7.32 S.U. (Station H-B on the Westchester Shoreline) |
| Average surface pH | 7.77 S.U. |
| Average bottom pH | 7.46 S.U. |

Survey #11 Narrative Summary

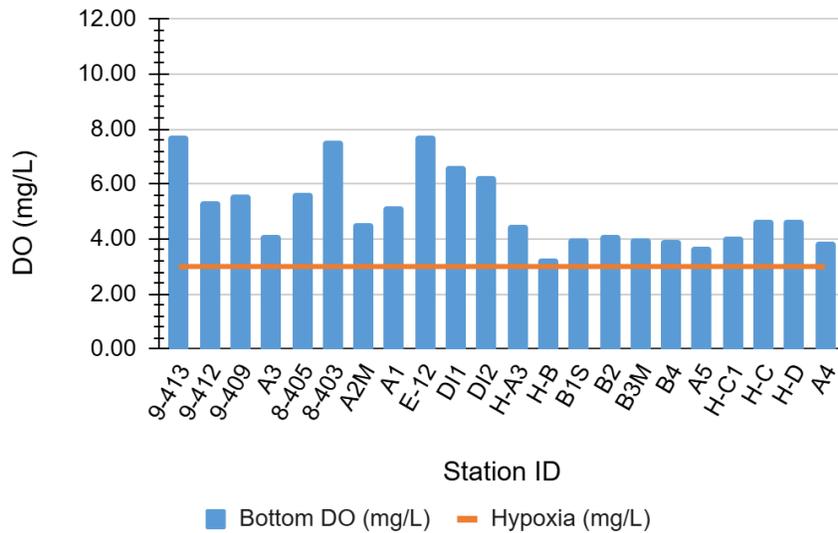
This survey began at 06:33 and ended at 11:03 with the most recent high tide at 07:50 and 08:06 at New Rochelle, NY and Kings Point, NY, respectively. Weather conditions were mostly sunny, with 0% cloud coverage above the study area throughout the survey. Air temperatures increased from 64°F to 71°F. The National Weather Service observations from LaGuardia Airport reported a total of 0.00" of precipitation during the 24- and 48-hour periods prior to the start of the survey. Secchi disk measurements ranged from 0.5 meters to 1.5 meters.

Due to a YSI equipment malfunction during the 2024 WLIS Survey #11, a comparison to the 2025 data is not available.

WLIS Surface Dissolved Oxygen, Survey #11 09/02/25



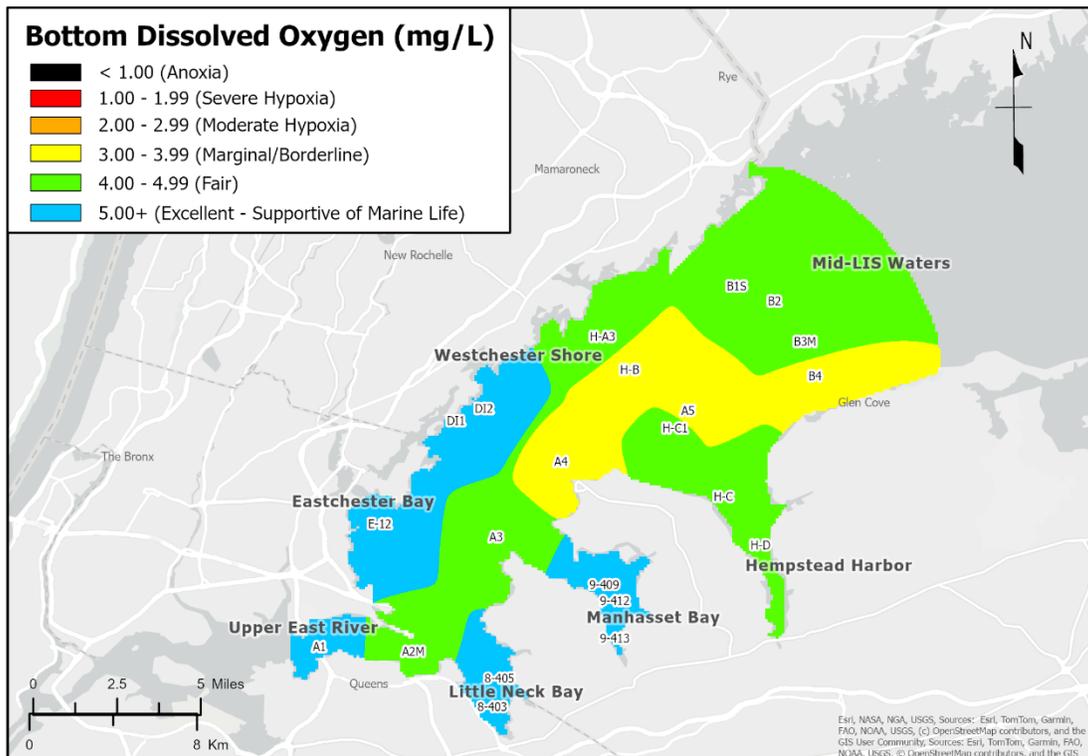
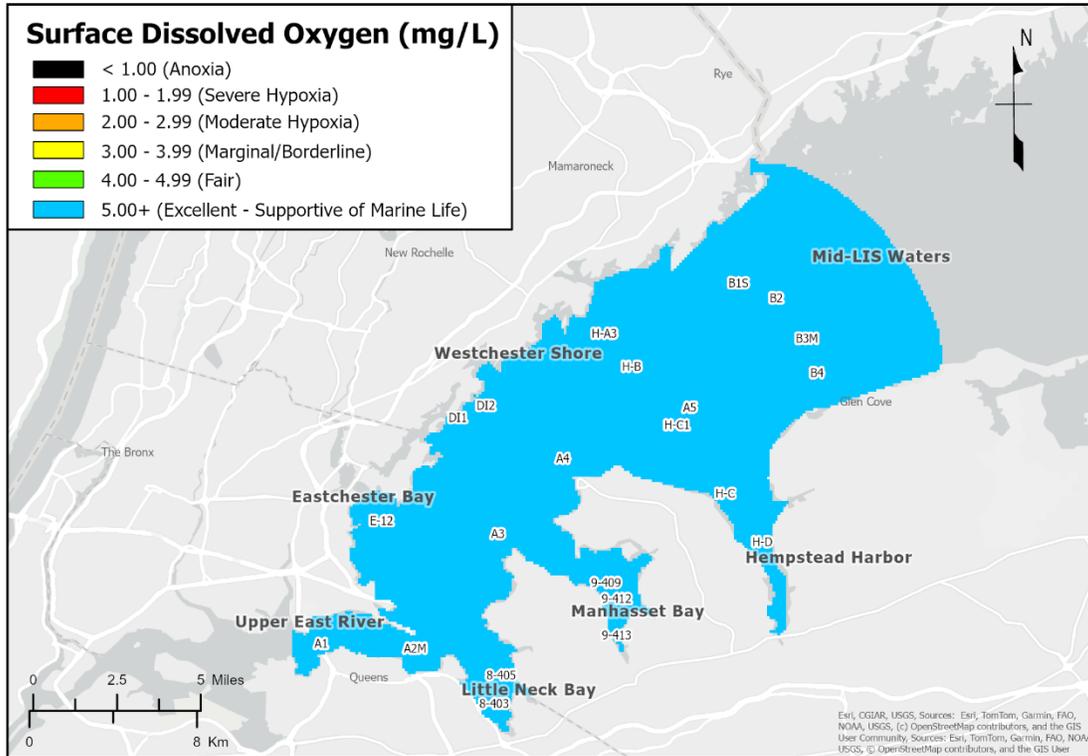
WLIS Bottom Dissolved Oxygen, Survey #11 09/02/25



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 #11: September 2, 2025



IDW Interpolation, Power 10

Map by: Samantha Wilder

Map made: 09/11/2025

SURVEY #12 AT A GLANCE 09/09/2025

| | |
|---|--|
| Hypoxia (DO < 3.00 mg/L) | No stations exhibited hypoxia at surface or bottom depths |
| Lowest surface DO concentration | 4.44 mg/L (Stations A1 in the Upper East River) |
| Lowest bottom DO concentration | 3.57 mg/L (Station H-B on the Westchester Shoreline) |
| Average surface DO concentration | 5.76 mg/L |
| Average bottom DO concentration | 4.66 mg/L |
| Average surface water temperature | 21.87 °C |
| Average bottom water temperature | 21.97 °C |
| Average water column ΔT (Surface-Bottom) | -0.10 °C |
| Average surface salinity | 26.05 ppt |
| Average bottom salinity | 26.43 ppt |
| Lowest surface pH | 7.26 S.U. (Station 9-413 in Manhasset Bay) |
| Lowest bottom pH | 7.26 S.U. (Station 9-413 in Manhasset Bay) |
| Average surface pH | 7.47 S.U. |
| Average bottom pH | 7.37 S.U. |

Survey #12 Narrative Summary

The survey began at 06:54 and ended at 10:41, with the most recent low tide at 06:37 and 06:55 at New Rochelle, NY and Kings Point, NY, respectively. Weather conditions were partly cloudy, with 0% cloud coverage over the study area throughout the survey. Air temperatures increased from 61°F to 67°F. The weather station at LaGuardia Airport reported a total of 0.00" and 0.38" of precipitation during the 24- and 48-hour period prior to the start of the survey, respectively. Secchi disk measurements ranged from 0.25 meters to 1.75 meters.

No stations exhibited hypoxia at surface or bottom depths. Average surface and bottom DO concentrations were *lower* during this survey compared to Survey #12 in 2024. Average Surface DO: 5.76 mg/L in 2025 vs 5.81 mg/L in 2024. Average Bottom DO: 4.66 mg/L in 2025 vs 5.62 mg/L in 2024.

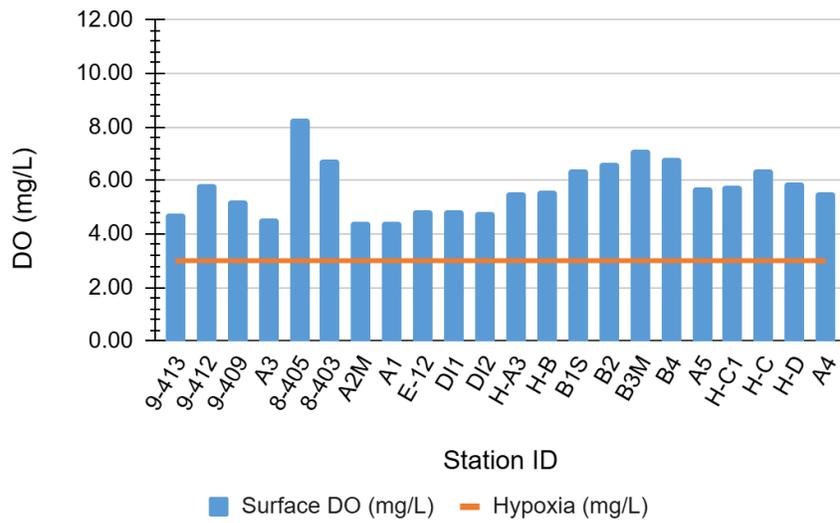
The average surface and bottom water temperatures were *higher* during this survey compared for Survey #12 in 2024. Average Surface Temperature: 21.87 °C in 2025 vs 21.82 °C in 2024. Average Bottom Temperature: 21.97 °C in 2025 vs 21.93 °C in 2024.

Average surface and bottom salinity were *higher* during this survey compared to Survey #12 in 2024. Average Surface Salinity: 26.05 ppt in 2025 vs 25.48 ppt in 2024. Average Bottom Salinity: 26.43 ppt in 2025 vs 25.74 ppt in 2024.

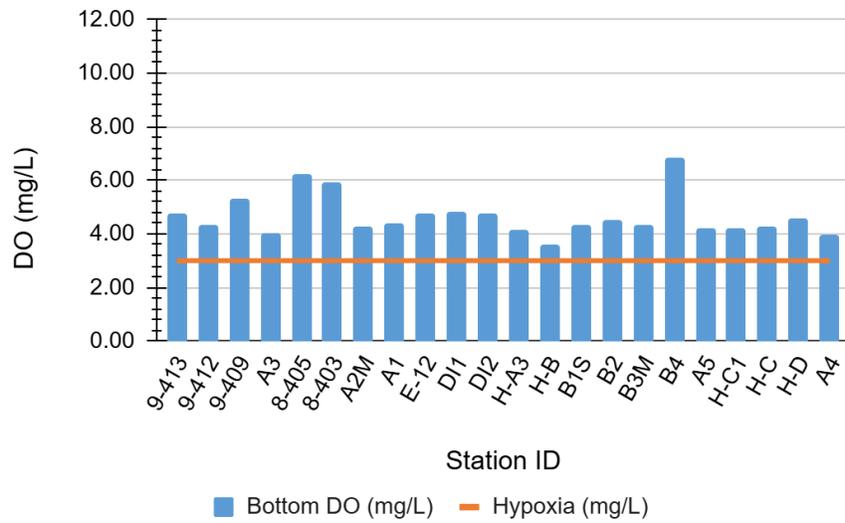
Average surface and bottom pH were *lower* during this survey compared to Survey #12 in 2024. Average

Surface pH: 7.47 in 2025 vs 7.50 in 2024. Average Bottom pH: 7.37 in 2025 vs 7.51 in 2024.

WLIS Surface Dissolved Oxygen, Survey #12 09/09/25



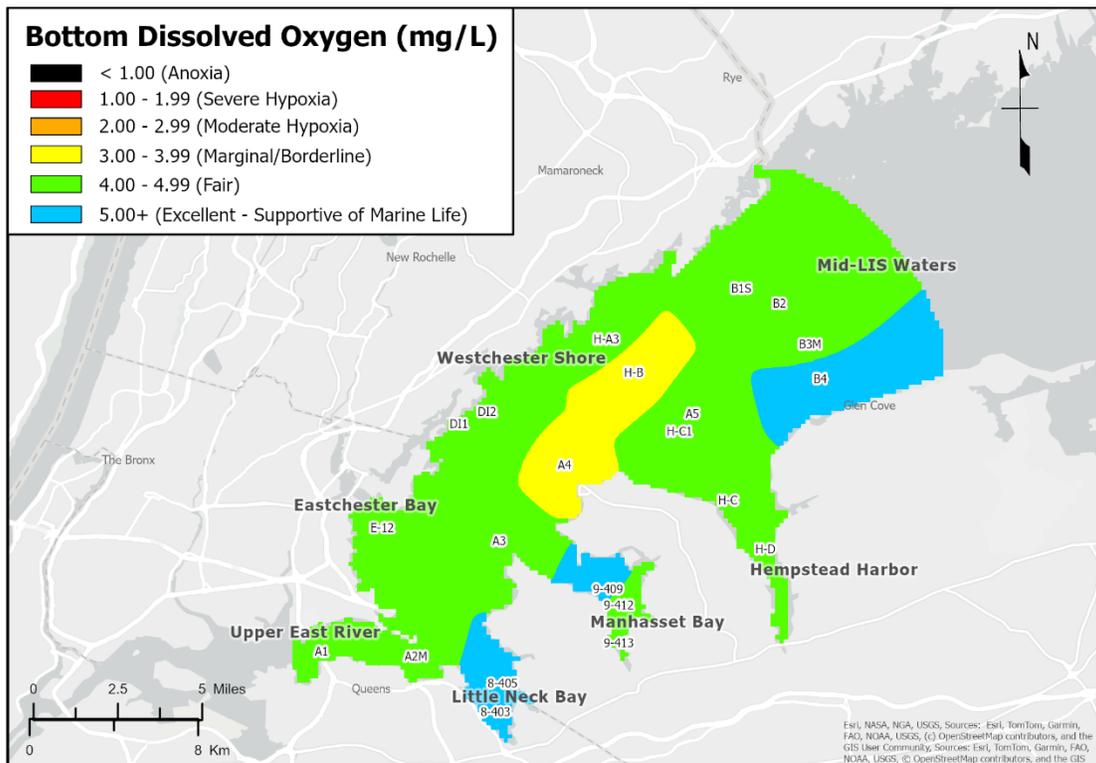
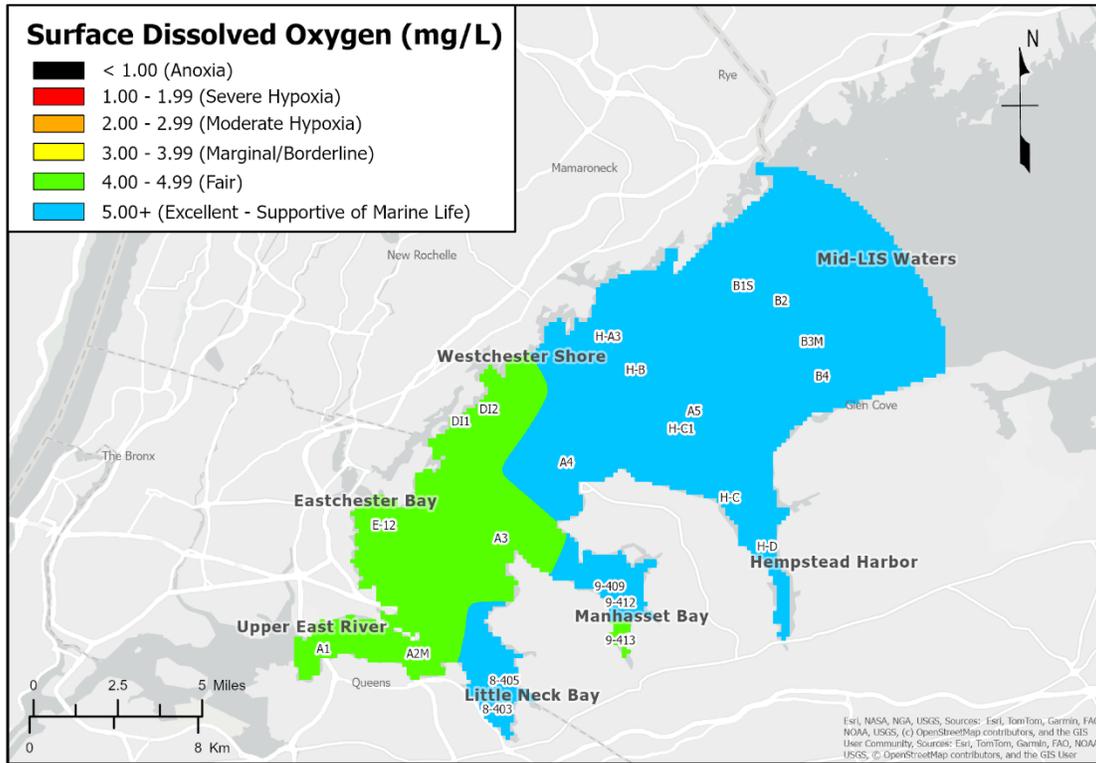
WLIS Bottom Dissolved Oxygen, Survey #12 09/09/25



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 #12: September 9, 2025



IDW Interpolation, Power 10

Map by: Samantha Wilder

Map made: 09/09/2025