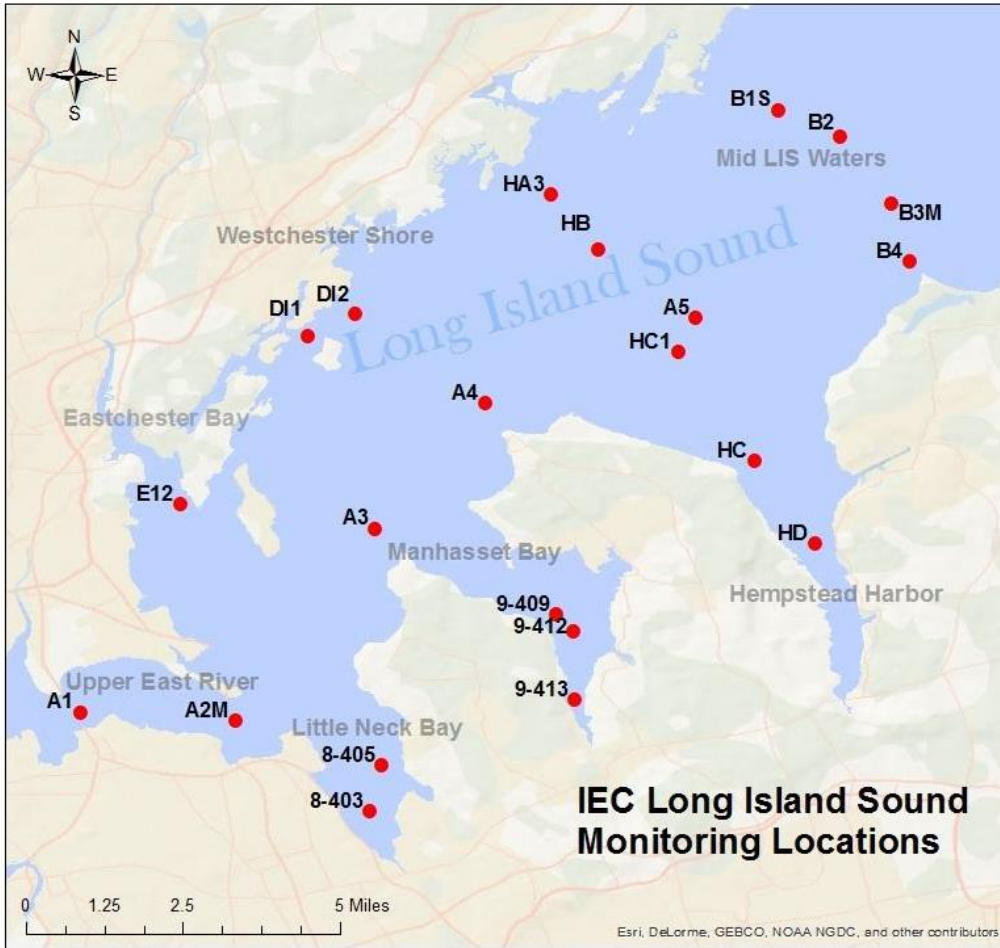




**Western Long Island Sound Monitoring
2022 Summer Survey Bi-Weekly Summary
Surveys #1 & #2
Survey Dates: June 28, 2022 & July 6, 2022**



STATION	LATITUDE DD	LONGITUDE DD
E-12	40.8487	-73.8045
A1	40.8013	-73.8268
A2M	40.7992	-73.7913
8-403	40.7778	-73.7608
8-405	40.7888	-73.7582
A3	40.8433	-73.7590
9-409	40.8240	-73.7175
9-412	40.8200	-73.7135
9-413	40.8041	-73.7133
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
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

As part of the Long Island Sound Study’s ongoing water quality monitoring program, IEC started its 32nd consecutive summer of weekly ambient monitoring surveys in western Long Island Sound and the upper East River on Tuesday, June 28th, 2022.

Throughout summer 2022, IEC staff will perform 12 weekly surveys to each of 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, and Secchi disk depth. This summer, the additional *in situ* parameter of turbidity was included as an intercomparison with 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.

Interstate Environmental
Commission
www.iec-nynjct.org
710 Parkside Ave.
Brooklyn, NY 11226
kyap@iec-nynjct.org

Biweekly surveys will include collection of additional samples for parameters relevant to hypoxia at 11 of the 22 stations (stations listed in **bold** on table, upper right). 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, Orthophosphate/DIP, Total Dissolved Phosphorus, Particulate Phosphorus, Dissolved Organic Carbon, Particulate Carbon, Dissolved Silica, and Biogenic Silica.

Proposed 2022 Summer Schedule		
Date	Survey Number	Parameters
6/28/2022	1	<i>In situ</i> parameters only
7/6/2022	2	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS
7/12/2022	3	<i>In situ</i> parameters only
7/19/2022	4	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS
7/26/2022	5	<i>In situ</i> parameters only
8/2/2022	6	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS
8/12/2022	7	<i>In situ</i> parameters only
8/16/2021	8	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS
8/24/2022	9	<i>In situ</i> parameters only
8/30/2022	10	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS
9/7/2022	11	<i>In situ</i> parameters only
9/13/2022	12	<i>In situ</i> , nutrients, chlorophyll <i>a</i> , BOD, TSS



Kimarie Yap, Environmental Analyst II



Manhasset Bay at sunrise

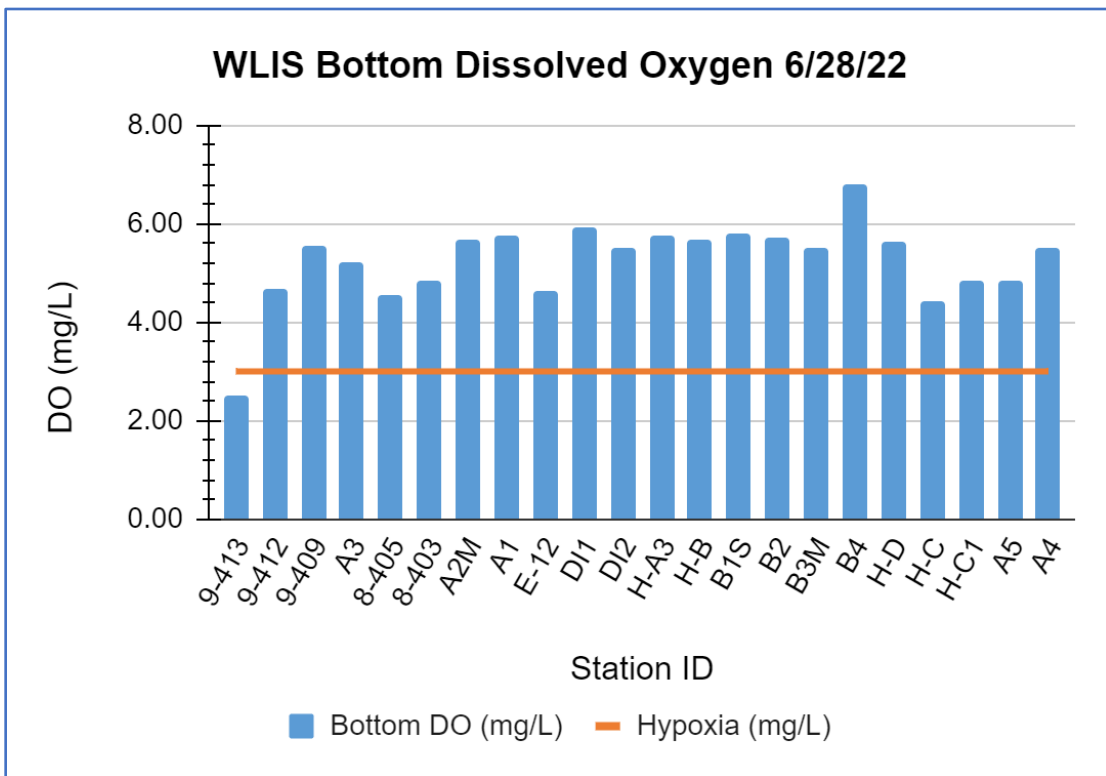
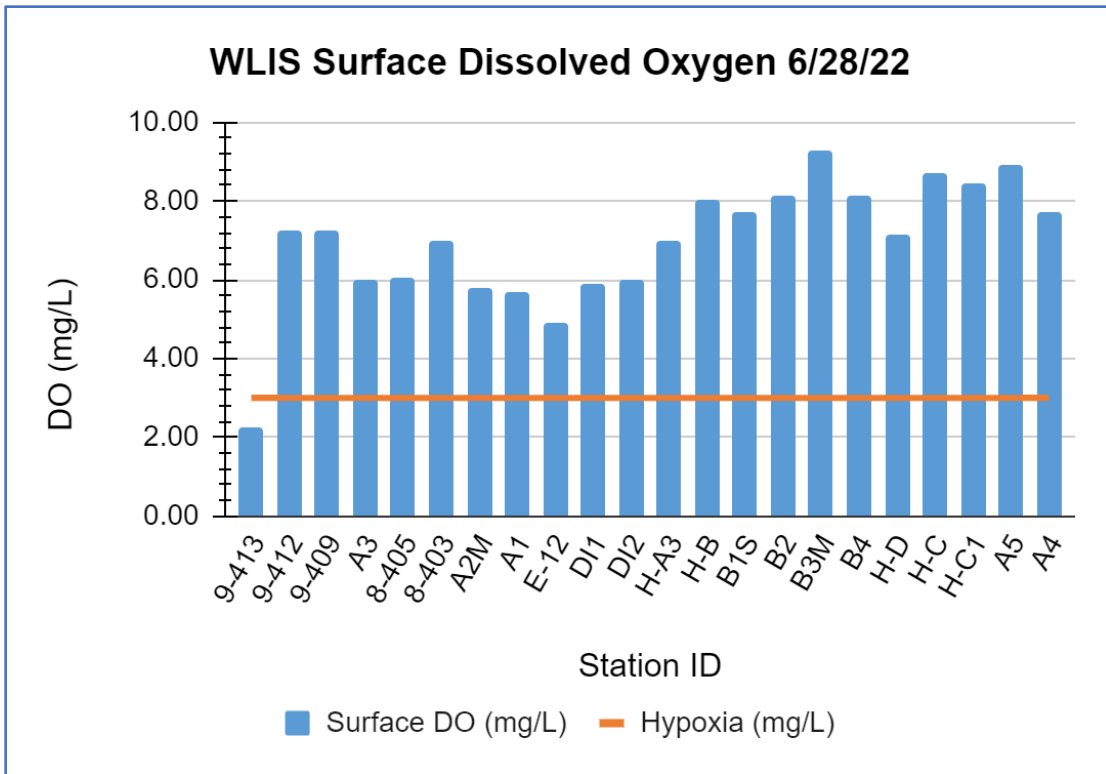
SURVEY # 1 AT A GLANCE 06/28/2022

Hypoxia (DO < 3.00 mg/L)	One station was hypoxic at both surface and bottom depths: Manhasset Bay – 9-413
Lowest surface DO concentration	2.24 mg/L (Station 9-413 in Manhasset Bay)
Lowest bottom DO concentration	2.52 mg/L (Station 9-413 in Manhasset Bay)
Average surface DO concentration	6.97 mg/L
Average bottom DO concentration	5.24 mg/L
Average surface water temperature	18.89 °C
Average bottom water temperature	17.35 °C
Average water column ΔT	1.54 °C
Average surface salinity	25.31 ppt
Average bottom salinity	26.03 ppt
Lowest surface pH	7.03 (Station 9-413 in Manhasset Bay)
Lowest bottom pH	7.09 (Station 9-413 in Manhasset Bay)
Average surface pH	7.68
Average bottom pH	7.50

Survey #1 Narrative Summary

This survey began at 05:48 and ended at 08:42, with low tide at 06:13 and 06:31 at New Rochelle, NY and Kings Point, NY, respectively. The weather conditions were mostly cloudy throughout the survey with percent cloud cover ranging from approximately 50 to 80% across all stations. The average air temperature was 78 °F and we experienced calm waters. The weather station at LaGuardia Airport reported 0.47” and 0.48” of precipitation for the 24- and 48-hour period prior to the start of the survey. Secchi disk measurements ranged from 2.0 ft in Manhasset and Little Neck Bays to 7.0 ft in the Mid-LIS waters near Glen Cove, NY.

The only station that exhibited hypoxia (DO < 3 mg/L) was 9-413 in inner Manhasset Bay at both surface and bottom depths. In comparison, no stations exhibited hypoxia during survey #1 last year (July 1, 2021).



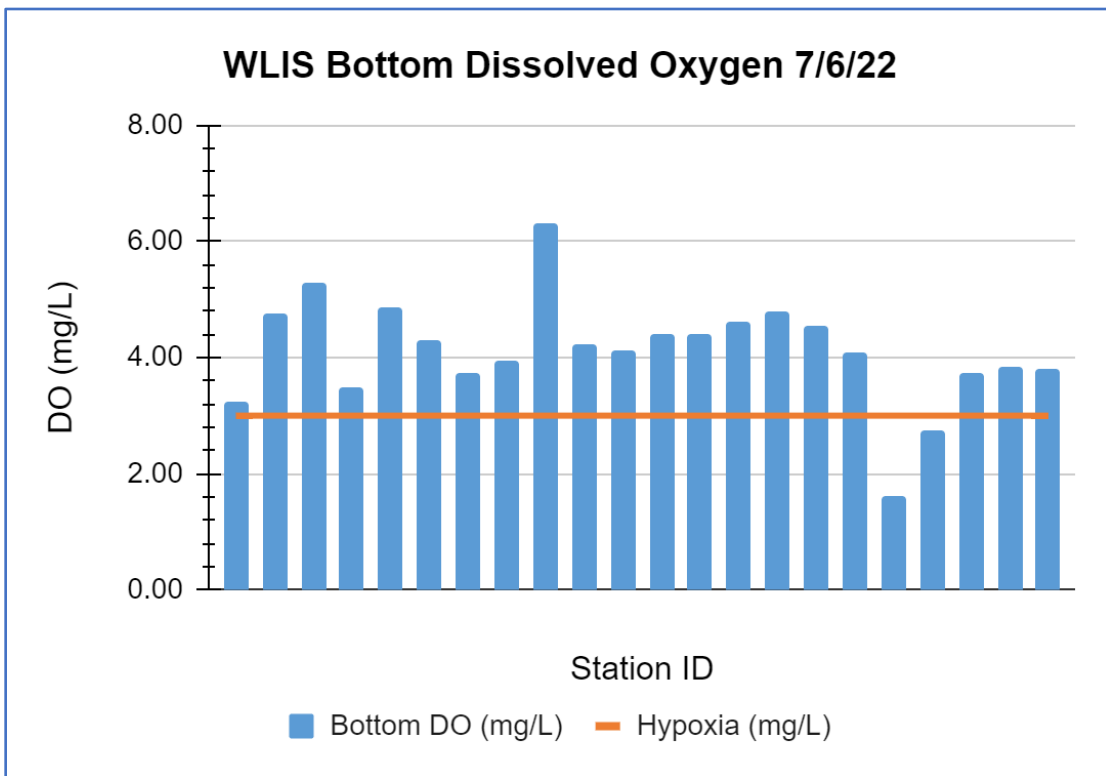
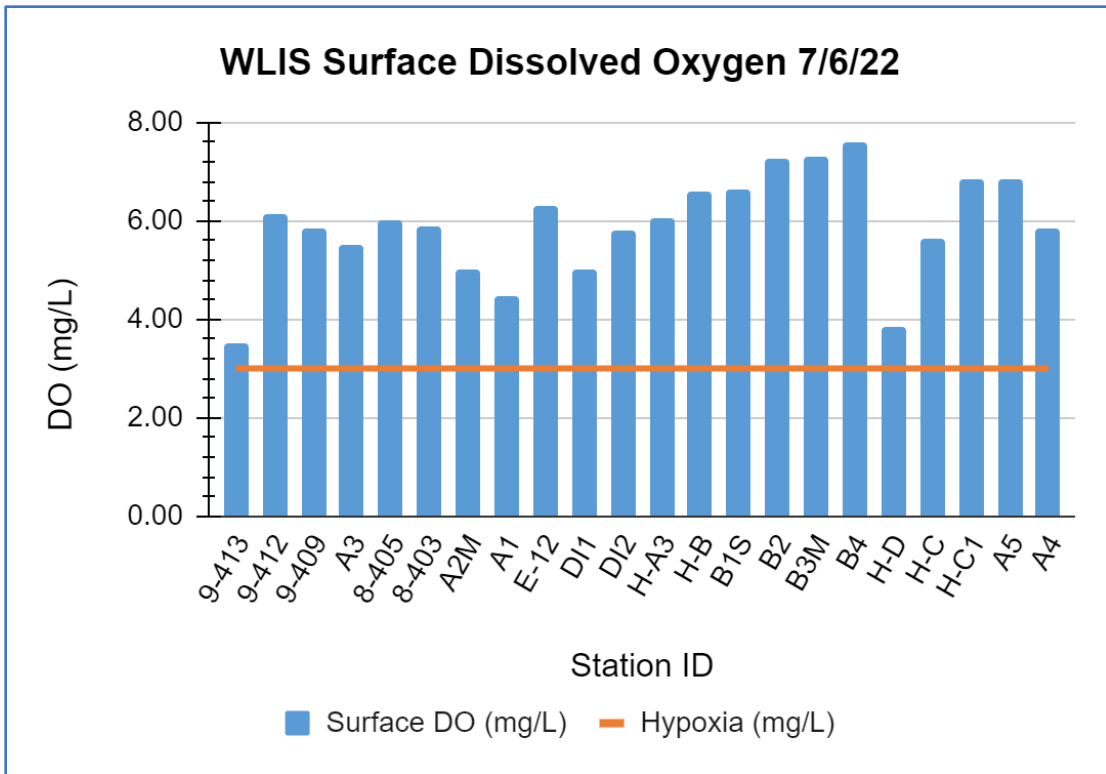
The Long Island Sound Study defines hypoxia as DO values which are below a concentration of 3.00 mg/L.

SURVEY # 2 AT A GLANCE 07/06/2022

Hypoxia (DO < 3.00 mg/L)	Two stations exhibited hypoxia at bottom depths: Hempstead Harbor – H-C and H-D
Lowest surface DO concentration	3.50 mg/L (Station 9-413 in Manhasset Bay)
Lowest bottom DO concentration	1.61 mg/L (Station H-D in Hempstead Harbor)
Average surface DO concentration	5.91 mg/L
Average bottom DO concentration	4.13 mg/L
Average surface water temperature	19.63 °C
Average bottom water temperature	17.49 °C
Average water column ΔT	2.15 °C
Average surface salinity	26.18 ppt
Average bottom salinity	26.72 ppt
Lowest surface pH	7.19 (Station 9-413 in Manhasset Bay)
Lowest bottom pH	7.17 (Station H-D in Hempstead Harbor)
Average surface pH	7.58
Average bottom pH	7.41

Survey #2 Narrative Summary

The survey began at 06:18 and ended at 09:41, with high tide at 04:10 and 04:26 at New Rochelle, NY and Kings Point, NY, respectively. The weather was mostly cloudy throughout the survey, average air temperature was 79 °F, and percent cloud cover measured approximately 5 to 90% across all stations. The weather station at LaGuardia Airport reported 0.08” of precipitation for the 24- and 48-hour period prior to the start of the survey. Secchi disk measurements ranged from 2.5 ft in Manhasset Bay to 8.0 ft in the Mid-LIS waters. **Both stations in Hempstead Harbor exhibited hypoxia (DO < 3 mg/L) at bottom depths – Stations H-C and H-D. No stations exhibited hypoxia at surface depth.**



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