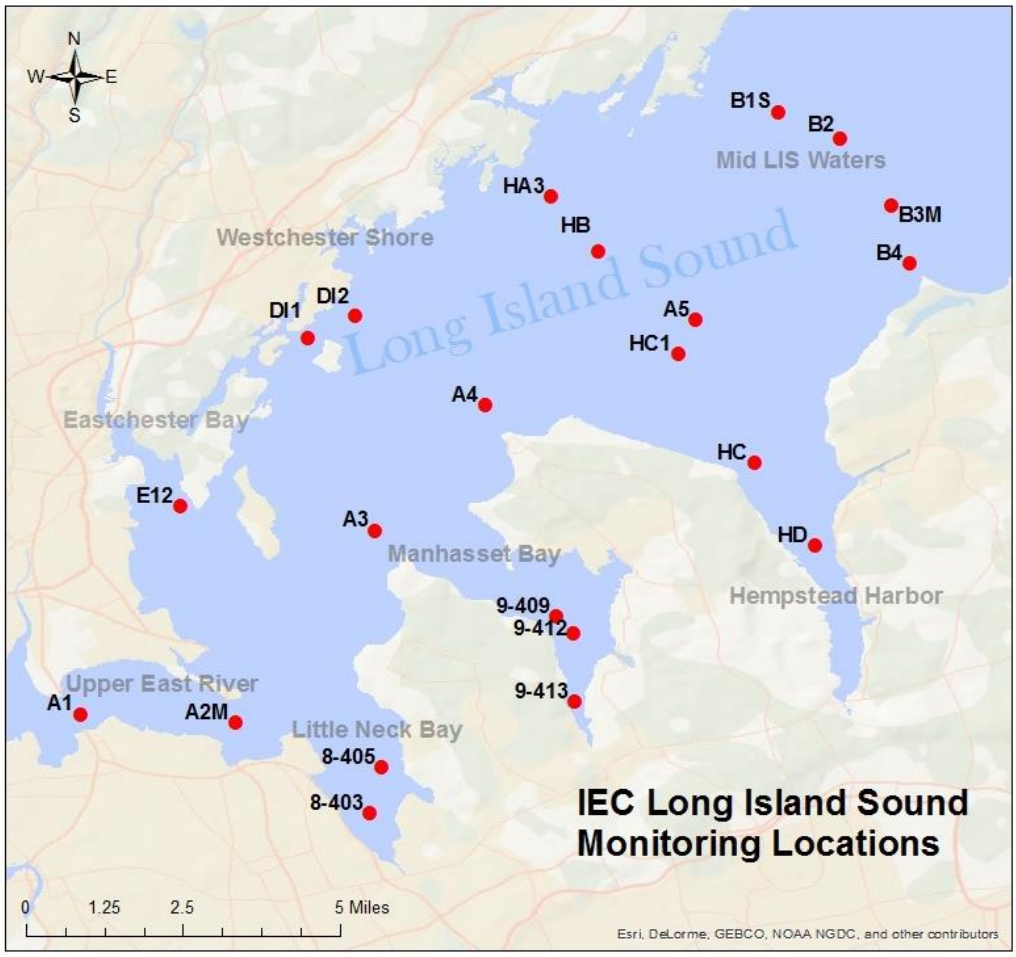
Interstate Environmental Commission
NY · NJ · CT

Western Long Island Sound Monitoring
2020 Summer Survey Summary
Weekly Surveys 1 through 6
Survey Dates: June 30th through August 6th, 2020



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 30th consecutive summer of weekly ambient monitoring surveys in western Long Island Sound and the upper East River on Tuesday, June 30th, 2020

Throughout summer 2020, 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. Measurements at each station are taken one meter below the surface, at mid-depth, and one meter above the bottom. Biweekly (beginning 8/6), 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.

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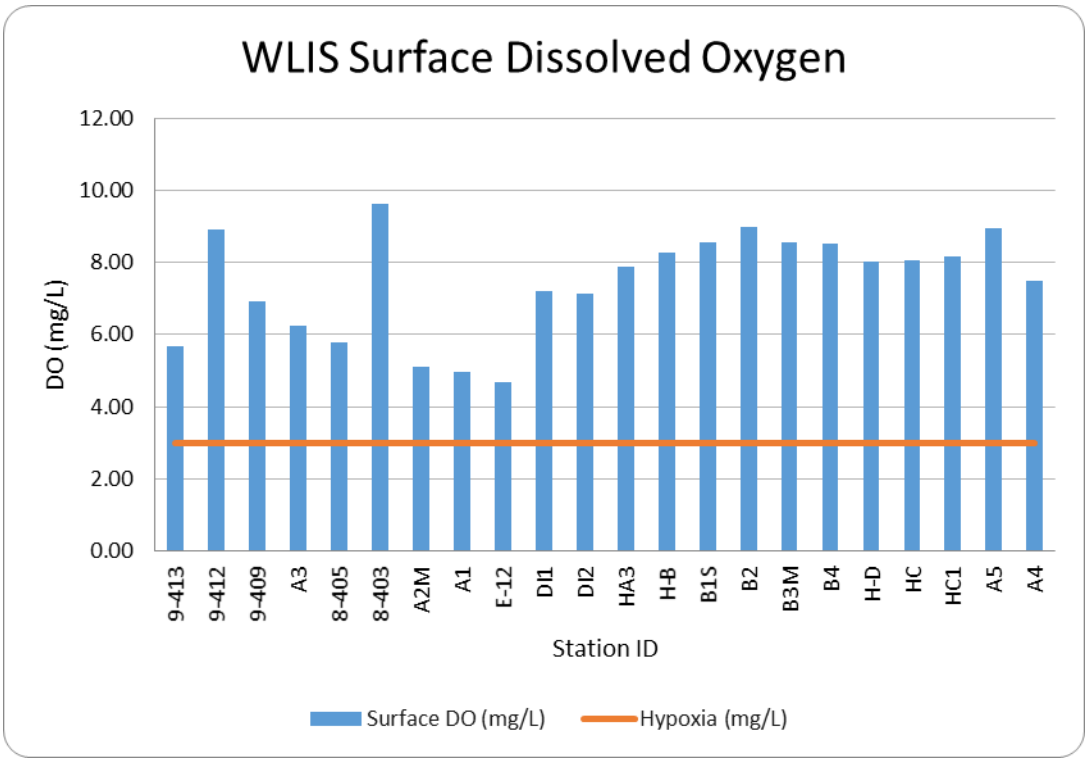
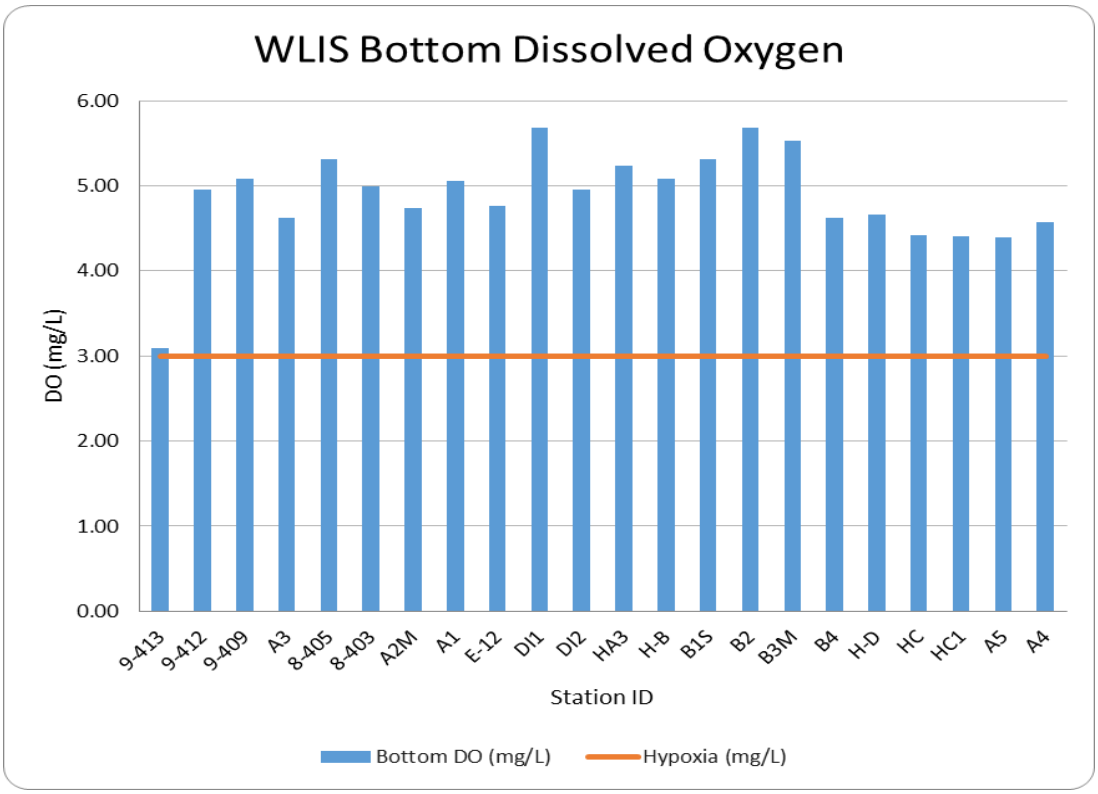
Nutrient parameters that will be analyzed include Ammonia, Nitrate+Nitrite, Particulate Nitrogen, Orthophosphate/DIP, Total Dissolved Phosphorus, Particulate Phosphorus, Dissolved Organic Carbon, Particulate Carbon, Dissolved Silica, and Biogenic Silica.

Proposed Summer Schedule		
Date	**Survey Number**	**Parameters**
6/30/2020	1	*In situ* parameters only
7/7/2020	2	*In situ* parameters only
7/14/2020	3	*In situ* parameters only
7/20/2020	4	*In situ* parameters only
7/28/2020	5	*In situ* parameters only
8/6/2020	6	*In situ*, nutrients, chlorophyll a, BOD, TSS
8/12/2020	7	*In situ* parameters only
8/19/2020	8	*In situ*, nutrients, chlorophyll a, BOD, TSS
8/26/2020	9	*In situ* parameters only
9/1/2020	10	*In situ*, nutrients, chlorophyll a, BOD, TSS
9/9/2020	11	*In situ* parameters only
9/15/2020	12	*In situ*, nutrients, chlorophyll a, BOD, TSS

SURVEY # 1 AT A GLANCE 06/30/2020

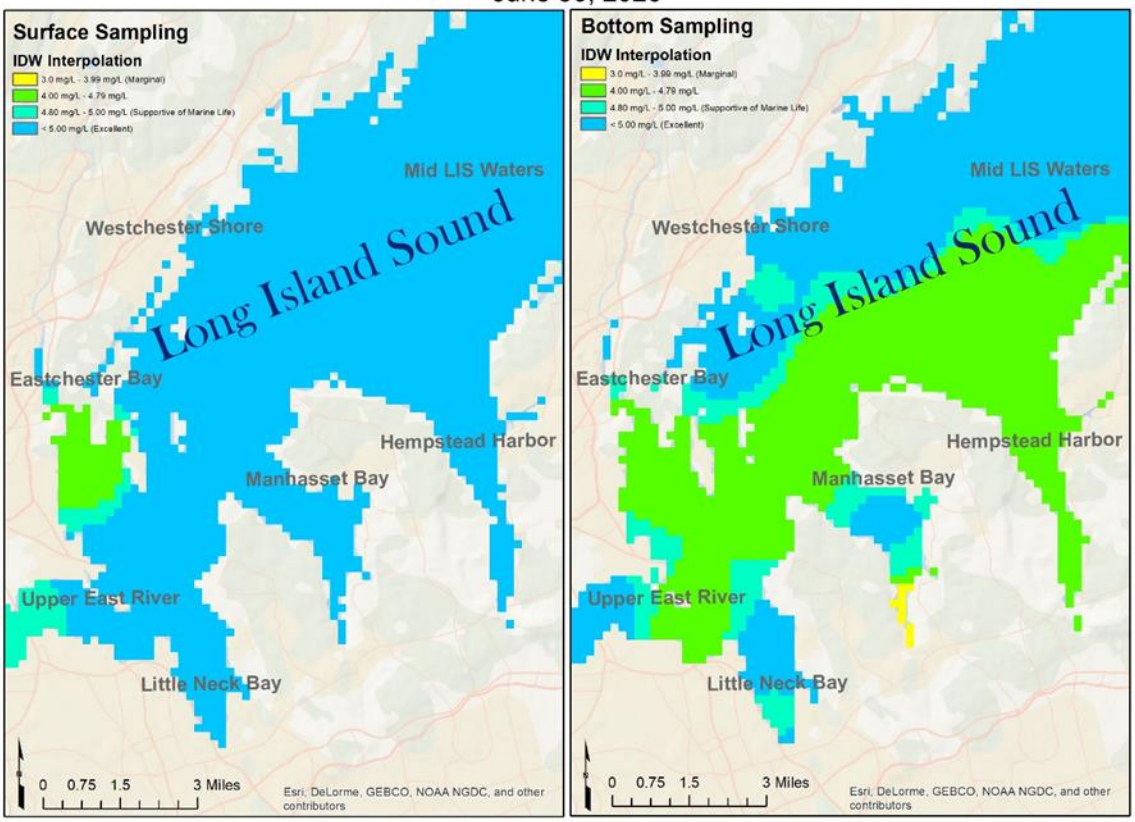
Hypoxia (DO <3.00 mg/L)	**No stations exhibited hypoxia.**
Lowest surface DO concentration	**4.67 mg/l (E-12 Eastchester Bay)**
Lowest bottom DO concentration	**3.09 mg/L (9-413 Manhasset Bay)**
Average surface DO concentration	**7.44 mg/L**
Average bottom DO concentration	**4.87 mg/L**
Average surface water temperature	**19.5º C**
Average bottom water temperature	**16.4º C**
Average water column ΔT	**3.07º C**
Average surface salinity	**26.06 ppt**
Average bottom salinity	**24.50 ppt**





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

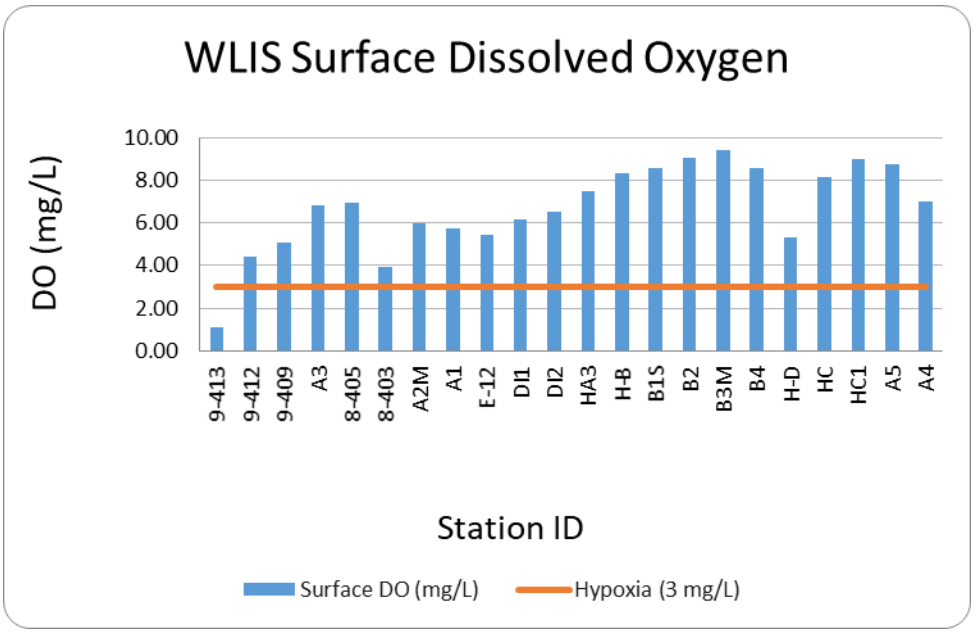
Interstate Environmental Commission Western Long Island Sound Sampling
June 30, 2020

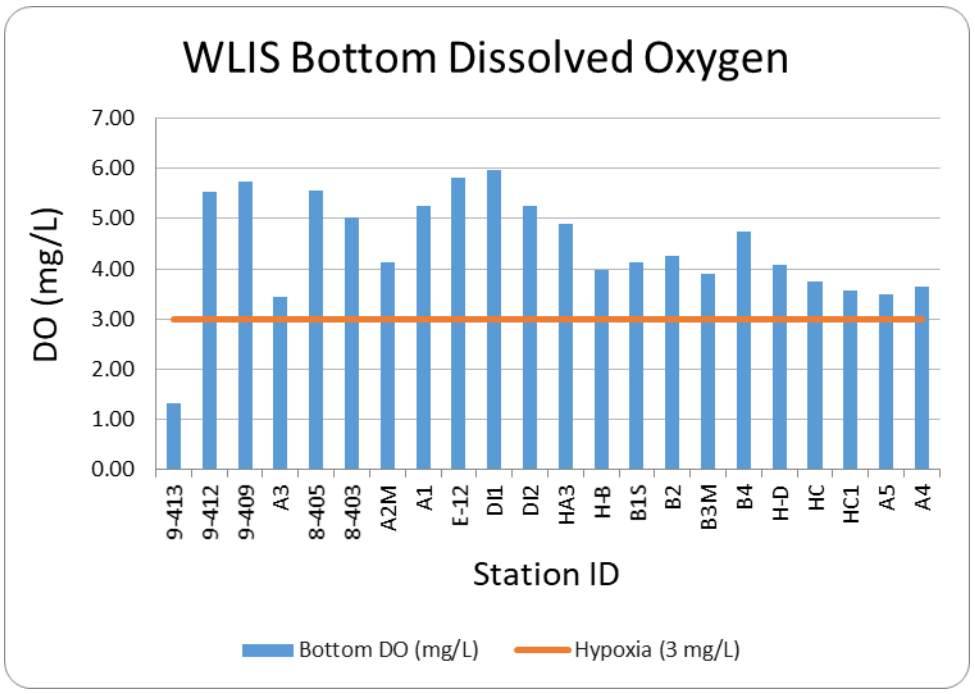


Map by: Jessica Bonamusa Interstate Environmental Commission Map Made: 8/3/20

SURVEY # 2 AT A GLANCE 07/06/2020

Hypoxia (DO <3.00 mg/L)	**One station (9-413 Manhasset Bay) exhibited hypoxia.**
Lowest surface DO concentration	**1.07 mg/L (9-413 Manhasset Bay)**
Lowest bottom DO concentration	**1.31 mg/L (9-413 Manhasset Bay)**
Average surface DO concentration	**8.20 mg/L**
Average bottom DO concentration	**5.26 mg/L**
Average surface water temperature	**19.4º C**
Average bottom water temperature	**16.6º C**
Average water column ΔT	**2.79ºC**
Average surface salinity	**24.67 ppt**
Average bottom salinity	**25.35 ppt**





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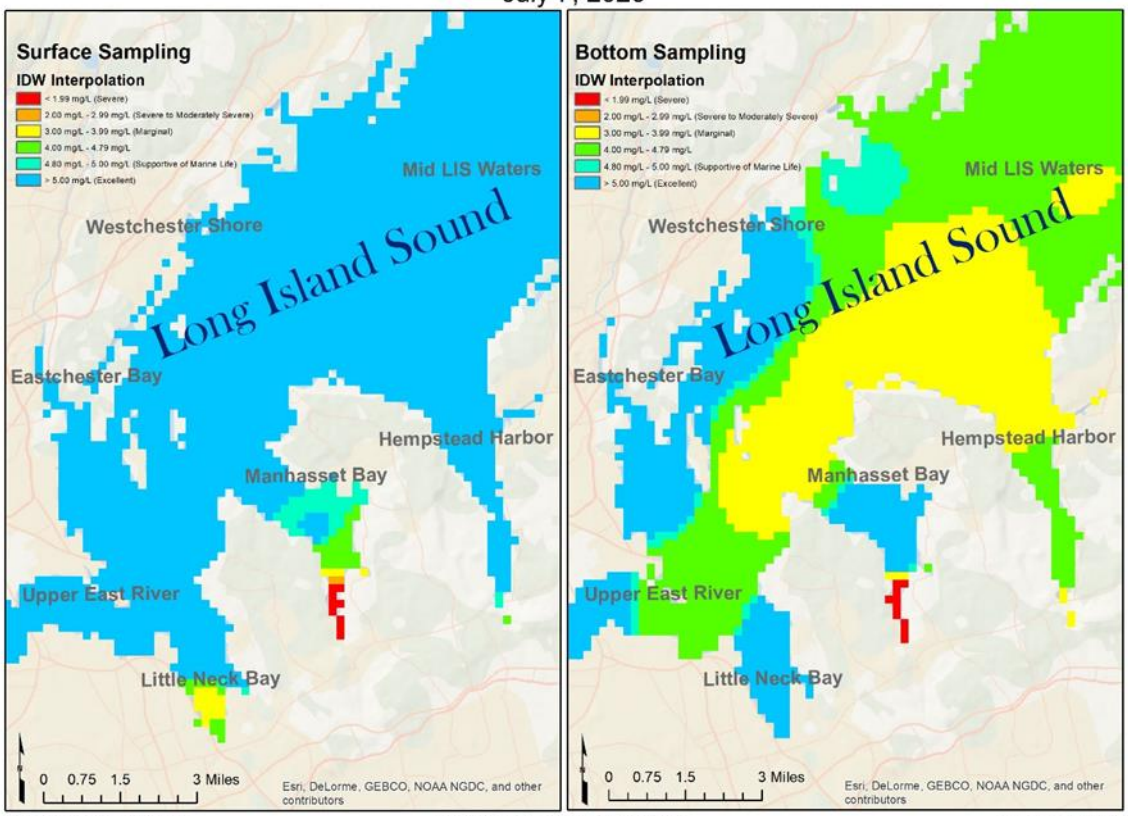
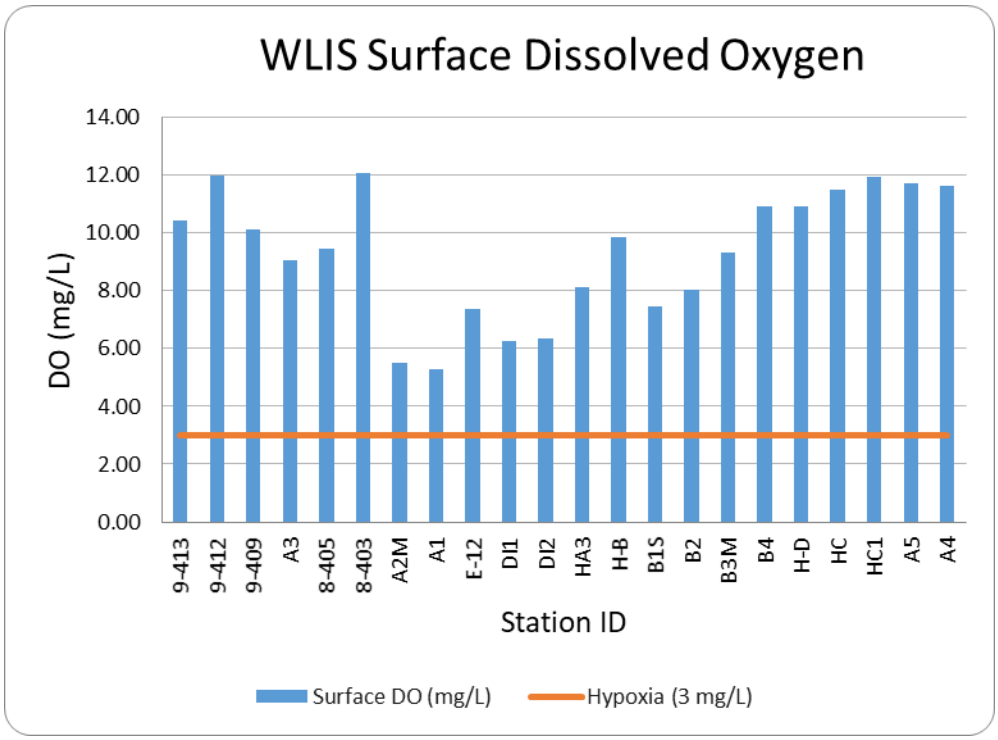
Interstate Environmental Commission Western Long Island Sound Sampling
July 7, 2020

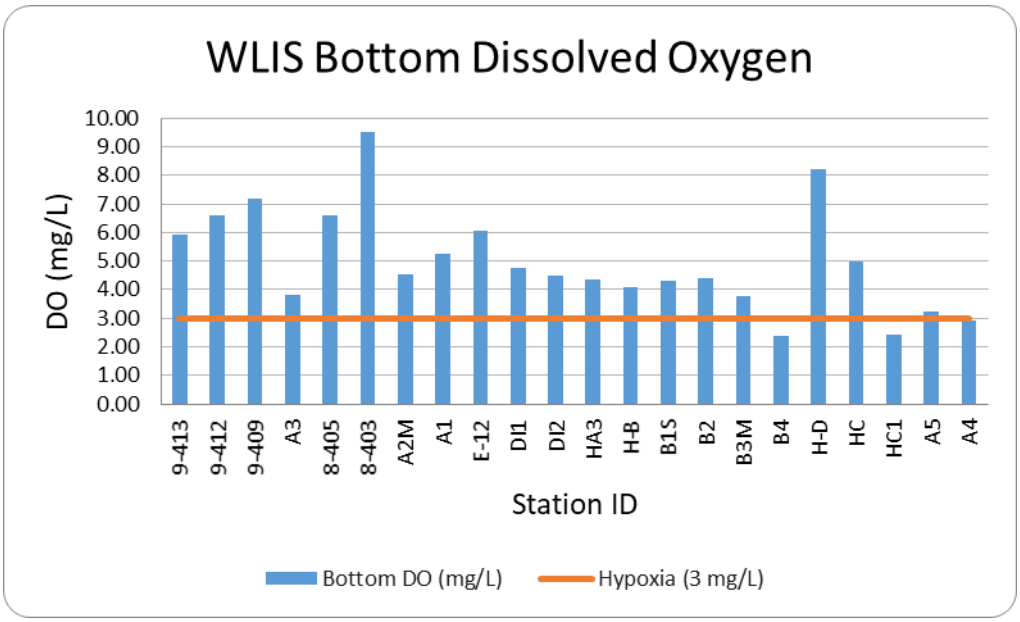


Map by: Jessica Bonamusa Interstate Environmental Commission Map Made: 8/3/20

SURVEY # 3 AT A GLANCE 07/14/2020

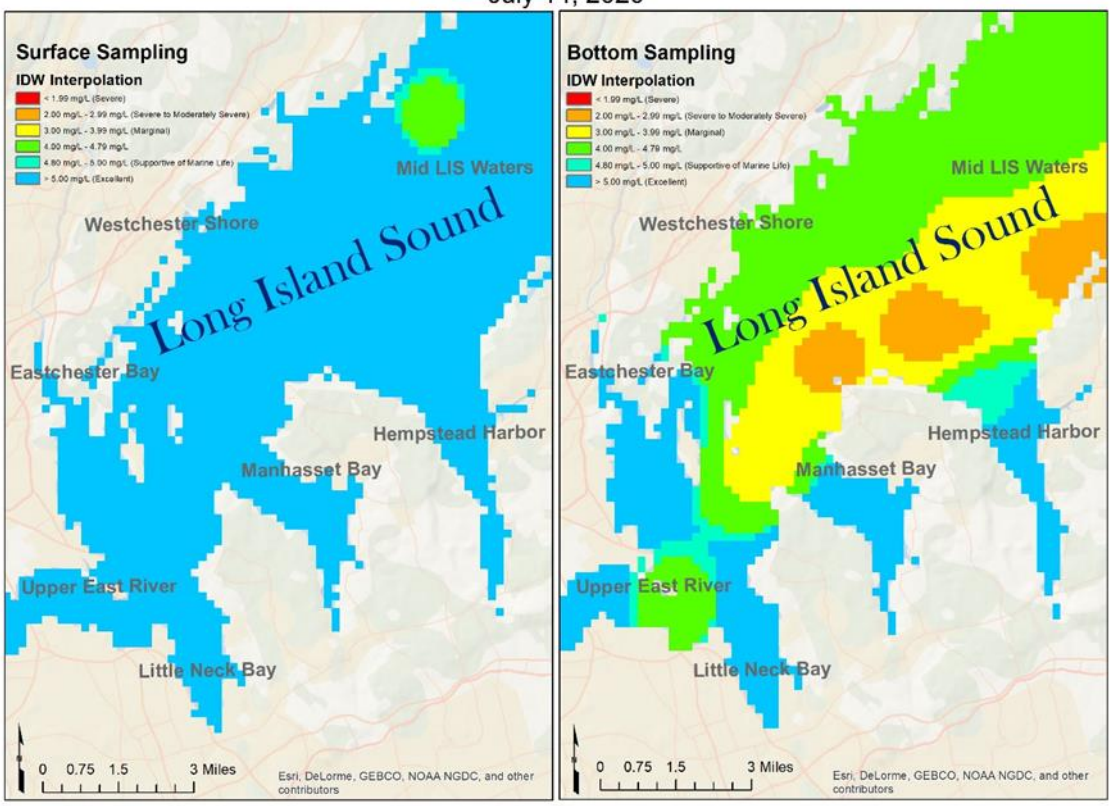
Hypoxia (DO <3.00 mg/L)	**Three stations (B-4, HC1, A4) exhibited hypoxia**
Lowest surface DO concentration	**5.30 mg/L (A1 Upper East River)**
Lowest bottom DO concentration	**2.37 mg/L (B4)**
Average surface DO concentration	**9.34 mg/L**
Average bottom DO concentration	**4.99 mg/L**
Average surface water temperature	**22.3º C**
Average bottom water temperature	**20.0º C**
Average water column ΔT	**2.32º C**
Average surface salinity	**25.24 ppt**
Average bottom salinity	**25.88 ppt**





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

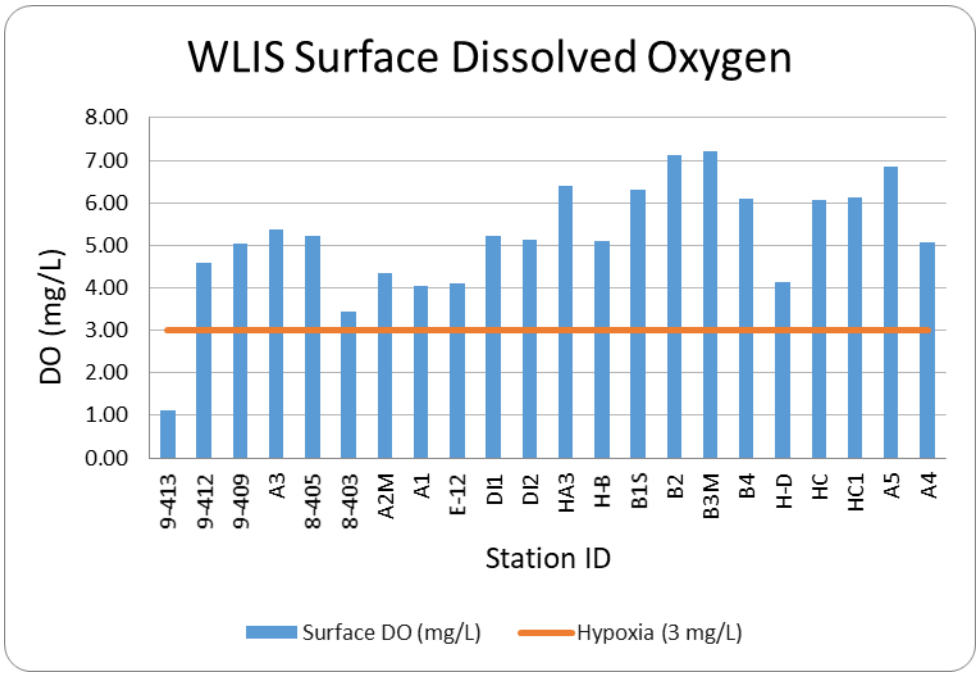
Interstate Environmental Commission Western Long Island Sound Sampling
July 14, 2020

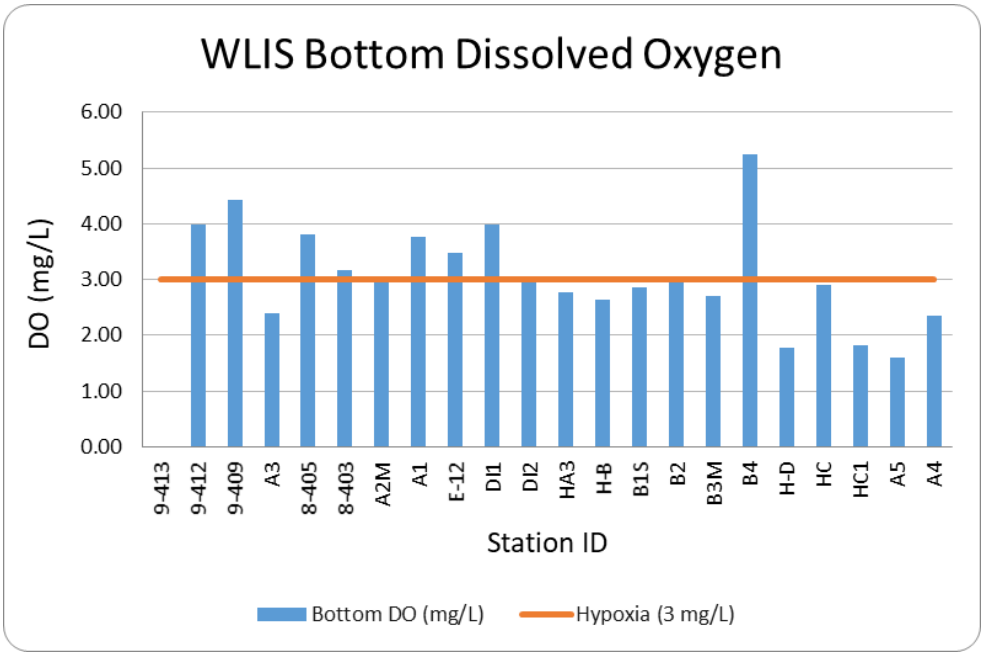


Map by: Jessica Bonamusa Interstate Environmental Commission Map Made: 8/3/20

SURVEY # 4 AT A GLANCE 07/20/2020

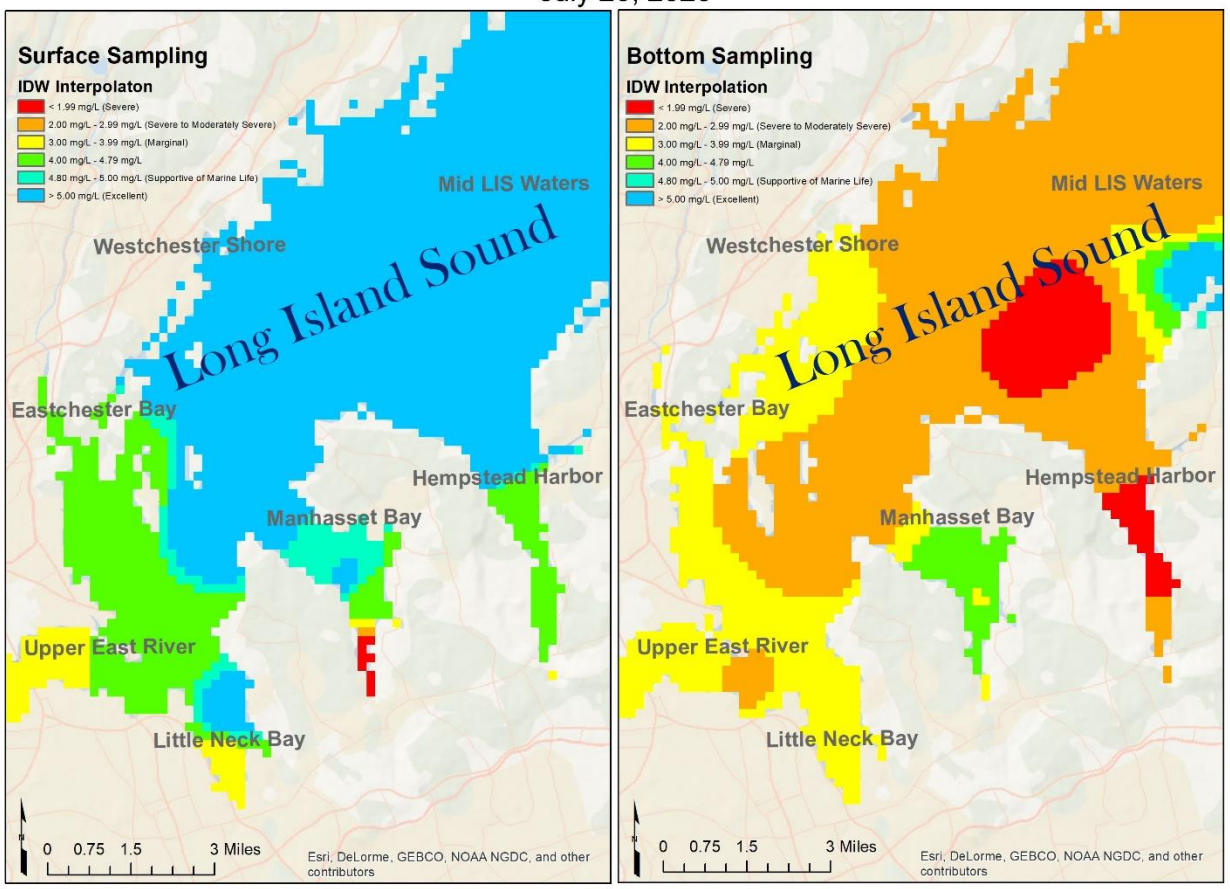
Hypoxia (DO <3.00 mg/L)	**13 stations (9-413, A3, A2M, HA3, HB, B1S, B2, B3M, HD, HC, HC1, A5, A4) exhibited hypoxia.**
Lowest surface DO concentration	**1.12 mg/L (9-413, Manhasset Bay)**
Lowest bottom DO concentration	**1.59 mg/L (9-413, Manhasset Bay)**
Average surface DO concentration	**5.19 mg/L**
Average bottom DO concentration	**3.08 mg/l**
Average surface water temperature	**22.3º C**
Average bottom water temperature	**19.7º C**
Average water column ΔT	**3.44º C**
Average surface salinity	**25.72 ppt**
Average bottom salinity	**26.36 ppt**





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

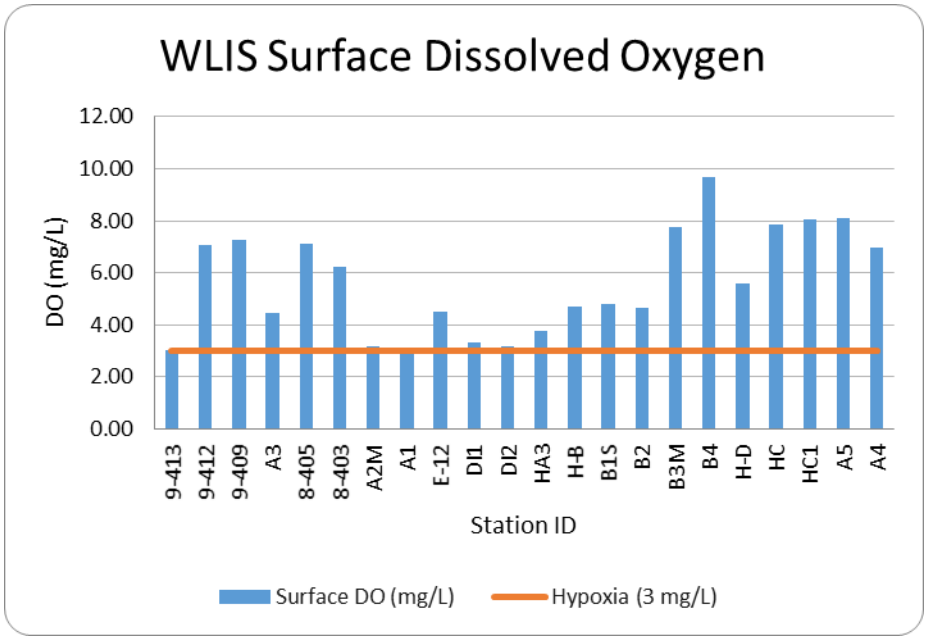
Interstate Environmental Commission Western Long Island Sound Sampling
July 20, 2020

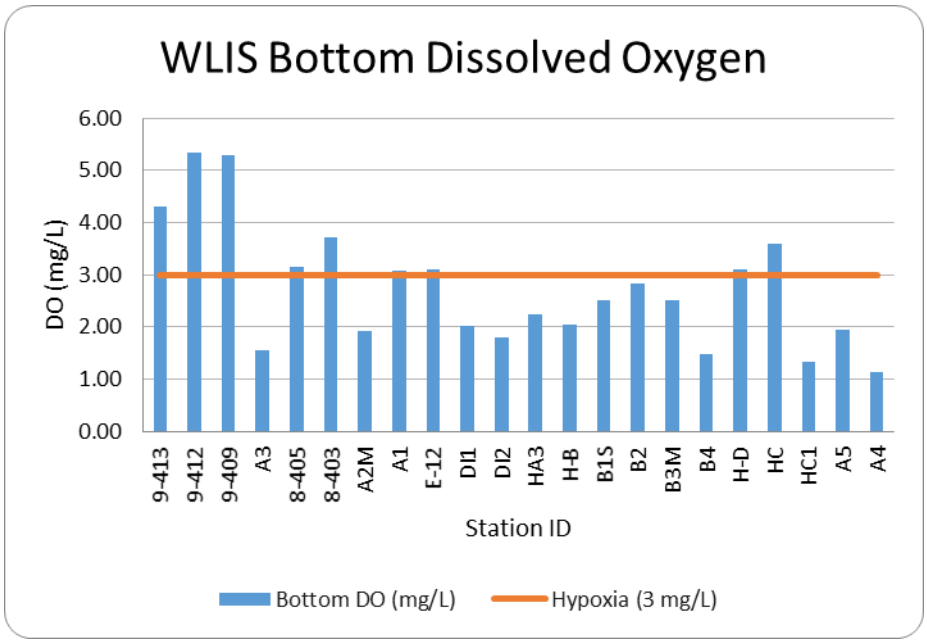


Map by: Jessica Bonamusa Interstate Environmental Commission Map Made: 8/13/20

SURVEY # 5 AT A GLANCE 07/28/2020

Hypoxia (DO <3.00 mg/L)	**12 stations (A3, A2M, DI1, DI2, HB, HA3, B1S, B2, B3M, B4, HC1, A5, A4) exhibited hypoxia**
Lowest surface DO concentration	**3.04 mg/L (9-413 Manhasset Bay)**
Lowest bottom DO concentration	**1.14 mg/L (A4 Execution Rocks)**
Average surface DO concentration	**5.66 mg/L**
Average bottom DO concentration	**2.73 mg/L**
Average surface water temperature	**22.4º C**
Average bottom water temperature	**20.2º C**
Average water column ΔT	**2.28º C**
Average surface salinity	**26.01 ppt**
Average bottom salinity	**26.53 ppt**





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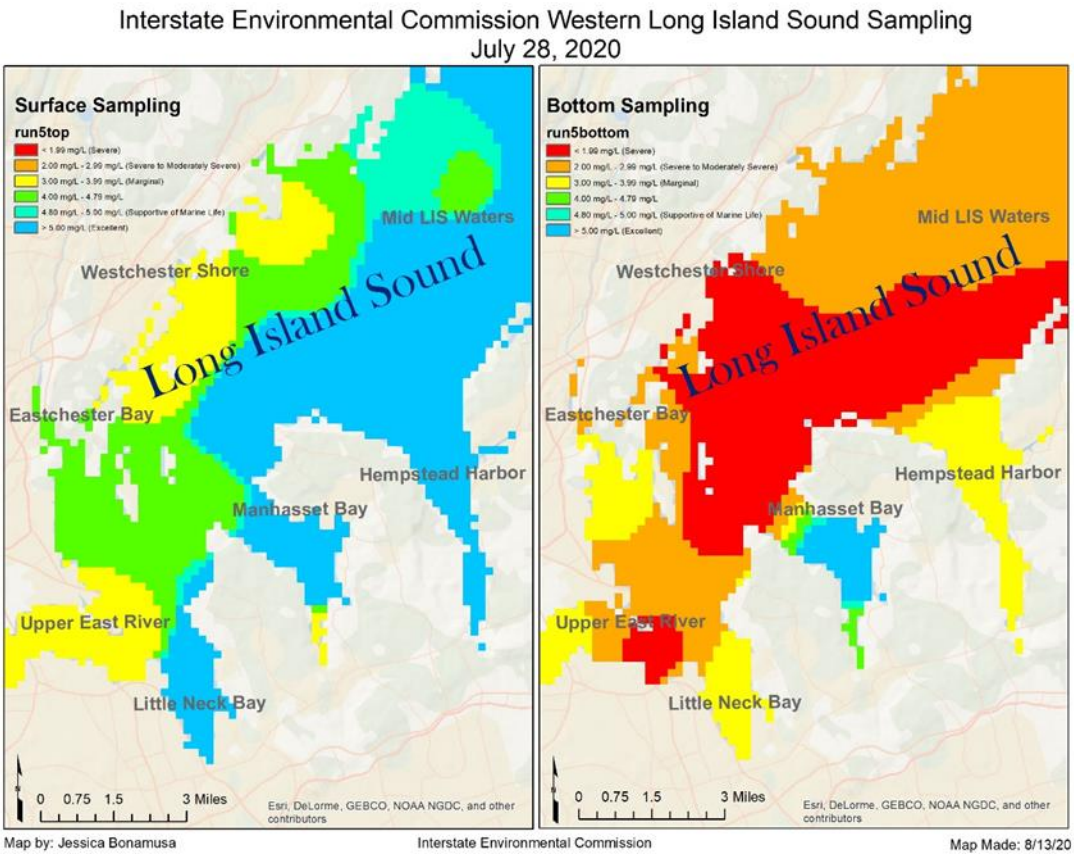
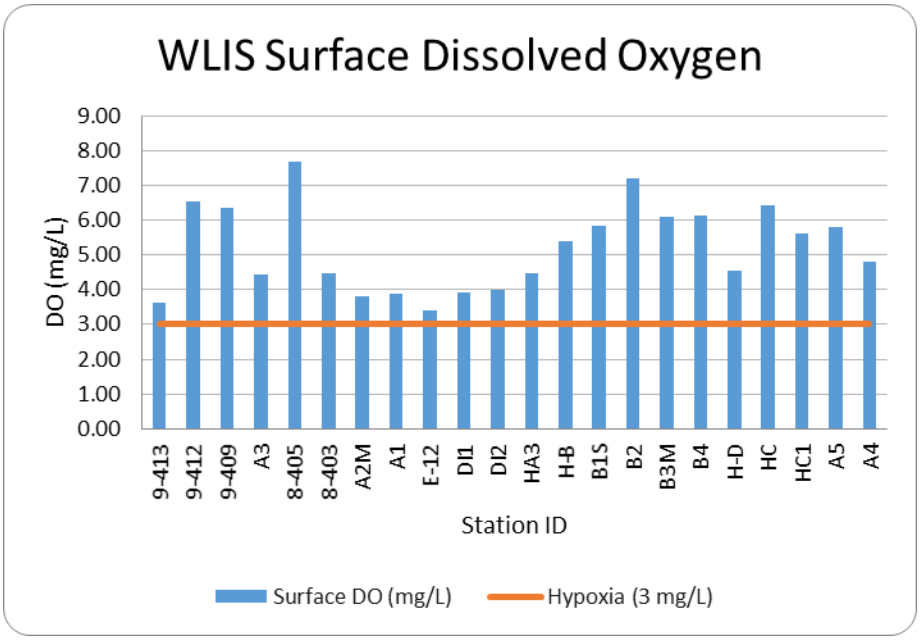
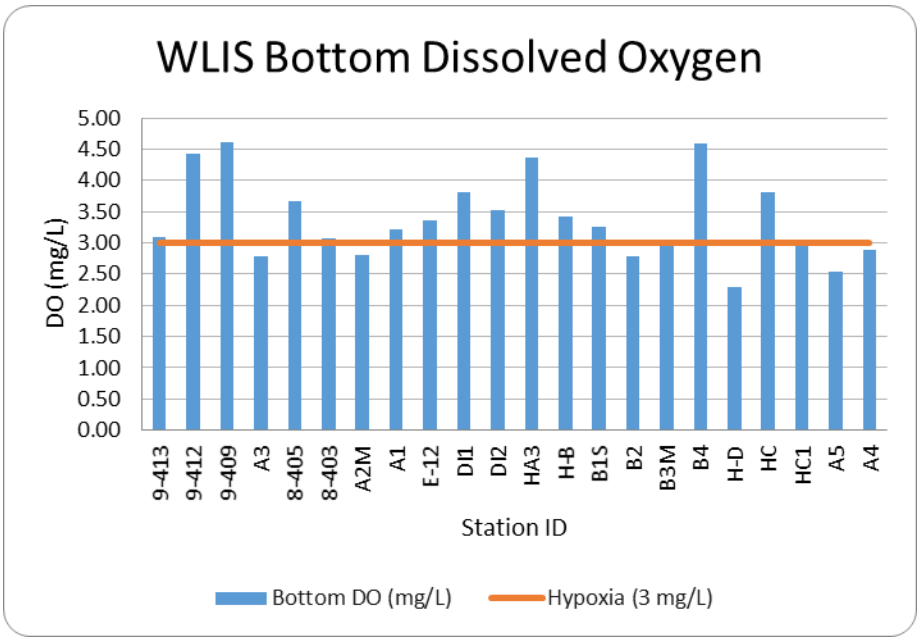


SURVEY # 6 AT A GLANCE 08/06/2020

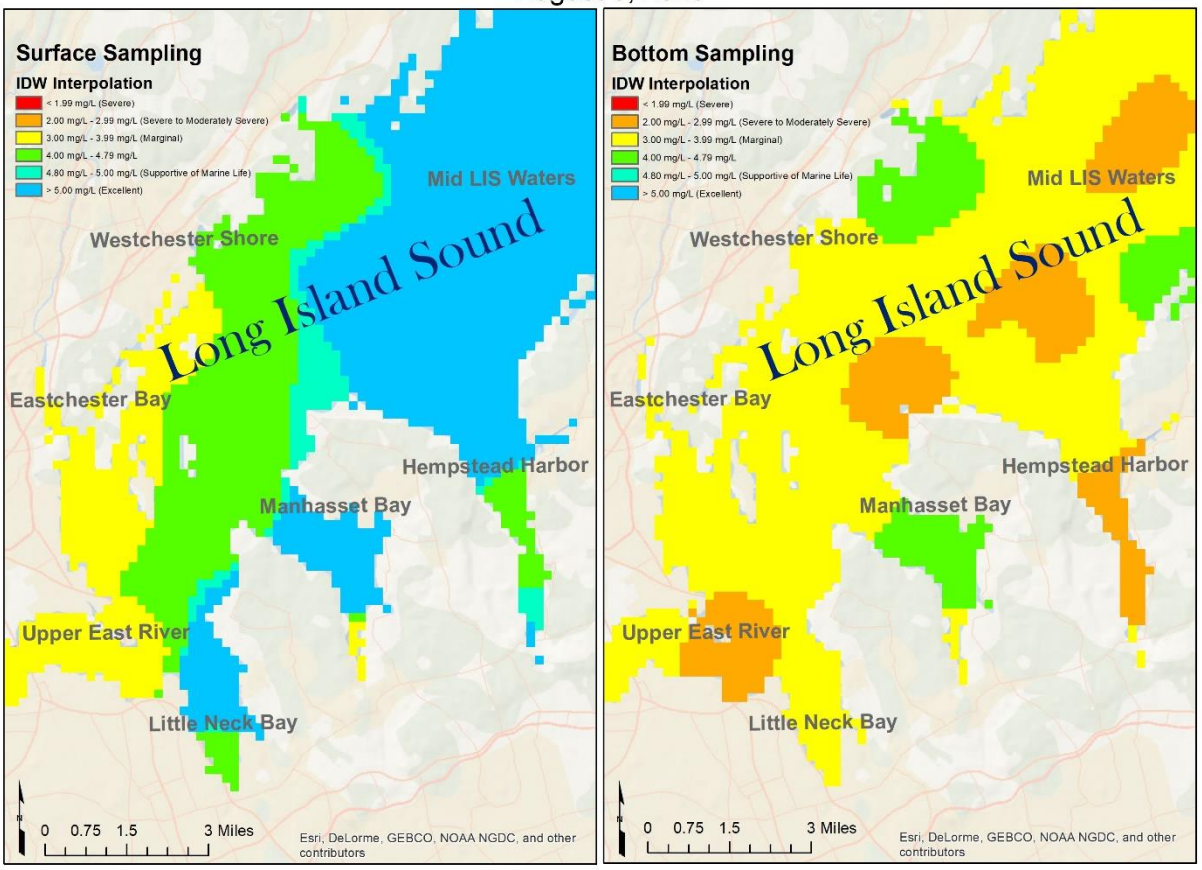
Hypoxia (DO <3.00 mg/L)	**Six stations (A3, A2M, B2, H-D, A5, A4) exhibited hypoxia.**
Lowest surface DO concentration	**3.40 mg/L (E-12)**
Lowest bottom DO concentration	**2.30 mg/L (H-D)**
Average surface DO concentration	**5.20 mg/L**
Average bottom DO concentration	**3.38 mg/L**
Average surface water temperature	**21.9° C**
Average bottom water temperature	**21.2° C**
Average water column ΔT	**0.75° C**
Average surface salinity	**26.22 ppt**
Average bottom salinity	**26.58 ppt**





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

Interstate Environmental Commission Western Long Island Sound Sampling
August 6, 2020



Map by: Jessica Bonamusa | Interstate Environmental Commission | Map Made: 8/31/20