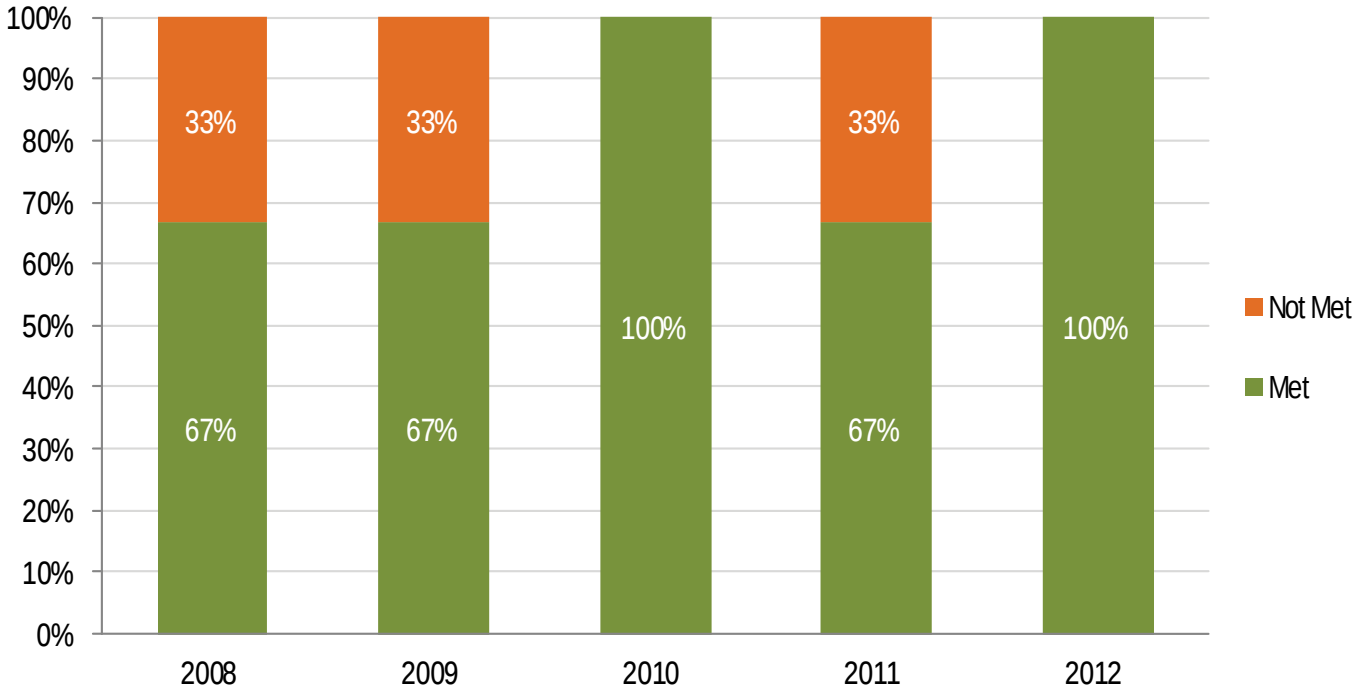
Subobjective: Long Island Sound

The Long Island Sound Program was successful in meeting all three of its commitments in FY 2012 (Figure 80).

Figure 80: Long Island Sound Subobjective Five-Year Trend



FY 2012 ACS Code	Abbreviated Measure Description	Results and Commitment Status: = Met; = Not Met; = Data Not Available; = Indicator/Long-Term (No Commitment); = Measure Did Not Exist	2007	2008	2009	2010	2011	2012	Appendix Page Number (D-0)/ Figure Number
Subobjective 2.2.7 Restore and Protect the Long Island Sound									
LI-SP41	Percent reduction Long Island Sound nitrogen			40,440	39,011	70%	69%	83%	D-59/Fig.83
LI-SP42.N11	Reduce Long Island Sound hypoxic zone (sq miles)			180	169	101	130	289	D-59/Fig.81
LI-SP43	Number acres Long Island Sound coastal habitat restored			1,199	1,614	7.4	8.9	537	D-60
LI-SP44	Number miles river and streams for fish passage reopened			124.3	147.0	72%	72%	72.3	D-60

More than 20 million people live within 50 miles of Long Island Sound's shores, and more than 1 billion gallons per day of treated effluent enter the Long Island Sound from 106 treatment plants. A study conducted in 1990 estimated that Long Island Sound contributes more than $5.5 billion annually to the regional economy from clean water-related activities alone—recreational and commercial fishing and shellfishing, beach-going, and swimming. In 2013 dollars, that equates to $9.5 billion. Long Island Sound is a breeding ground, nursery, feeding ground, and habitat to more than 170 species of fish and 1,200 species of invertebrates that are under increasing stress from development and competing human uses.

FY 2012 Performance Highlights and Management Challenges

The Long Island Sound Program significantly exceeded its 2012 commitment (218 acres) by restoring or protecting 537 acres of coastal habitat, including tidal wetlands, dunes, riparian buffers, and freshwater wetlands (SP-43).
In 2012, the Long Island Sound Program significantly exceeded its annual goal of reopening 28 miles of rivers and streams to diadromous fish passage. More than 72 miles of river and stream corridors were reopened by the removal of dams and barriers or by installing bypass structures. More habitat restoration (and riverine corridor) projects were completed in 2012 because some of them had been delayed by Hurricane Irene in August 2011. Resources were diverted to storm cleanup and recovery at that time. In 2012, work resumed on these projects, which otherwise would have been completed in 2011. This contributed to the measure being significantly exceeded.

The states of Connecticut and New York have listed Long Island Sound as impaired for dissolved oxygen (DO) under Section 303(d) and have developed a TMDL to control nitrogen deposition to the Sound as a means of improving DO. The TMDL calls for a 58.5% reduction in anthropogenic nitrogen deposition from baseline levels over a 15-year period commencing in 2000 and ending in 2014. Nitrogen from sewage treatment plants has been reduced by more than 76,000 pounds per day from baseline loads.

A key measure for assessing the states' progress in restoring water quality standards for DO in the Sound is the annually measured size of its maximum area of hypoxia. In 2012, the maximum area of hypoxia in Long Island Sound measured 288 square miles (SP-42) (Figure 81). Summer 2012 was one of the warmest for water temperatures in the Sound. The five-year rolling average maximum area of hypoxia is 173.6 square miles, or a 16.5% percent reduction from the 208 square mile pre-TMDL average maximum area of hypoxia, thereby exceeding the 15% target in the Strategic Plan for 2012. Figure 82 shows the locations of dissolved oxygen levels in Long Island Sound bottom waters.[28]

[28] Data from the state of Connecticut water quality monitoring program.

Figure 81: Reduction in Size (Square Miles) of Long Island Sound Hypoxic Zone by Fiscal Year (LI-SP42.N11)

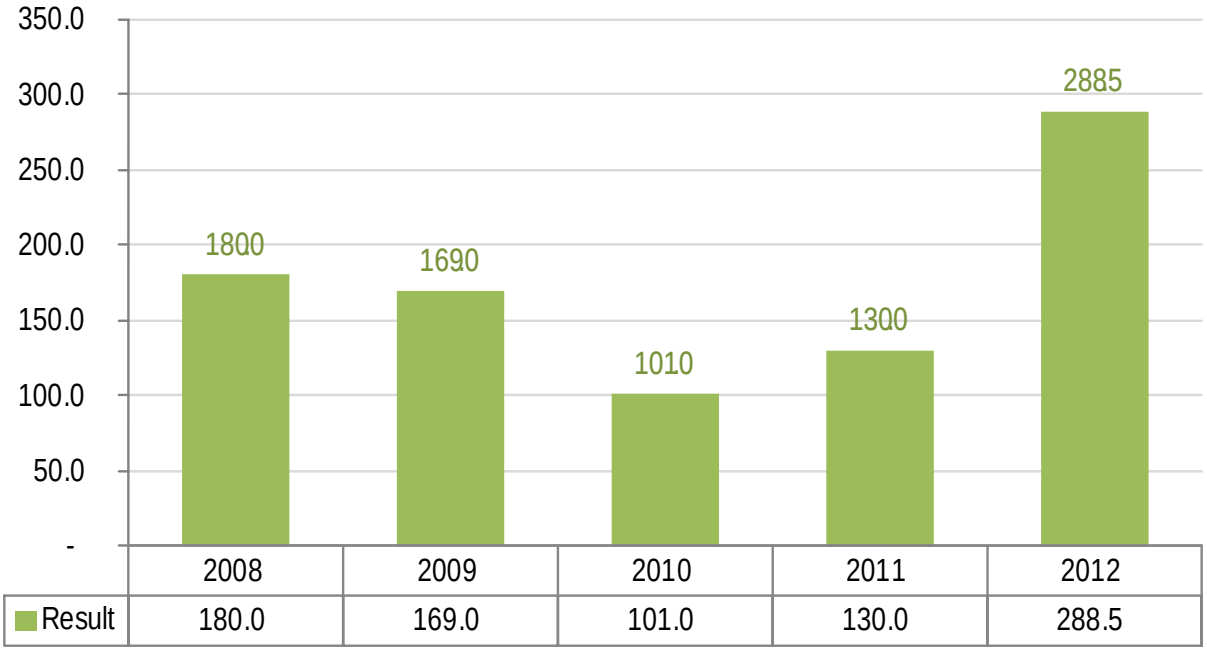
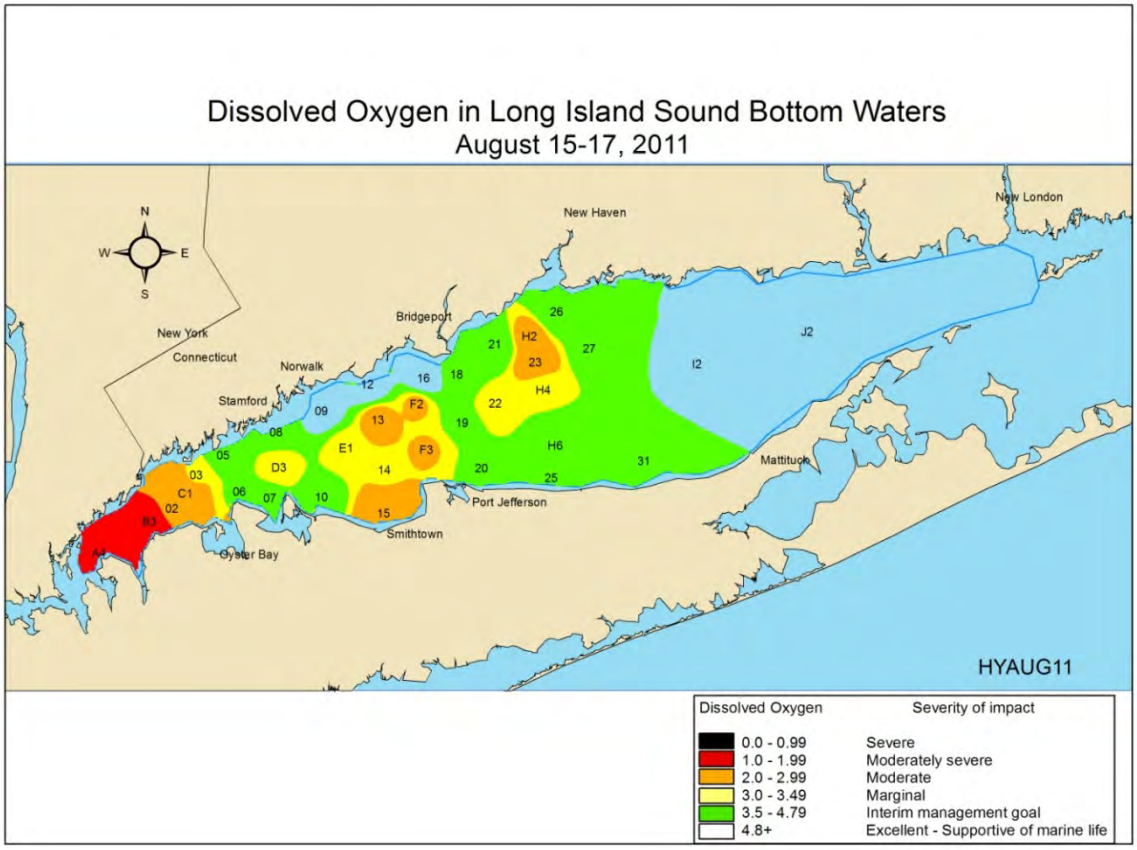
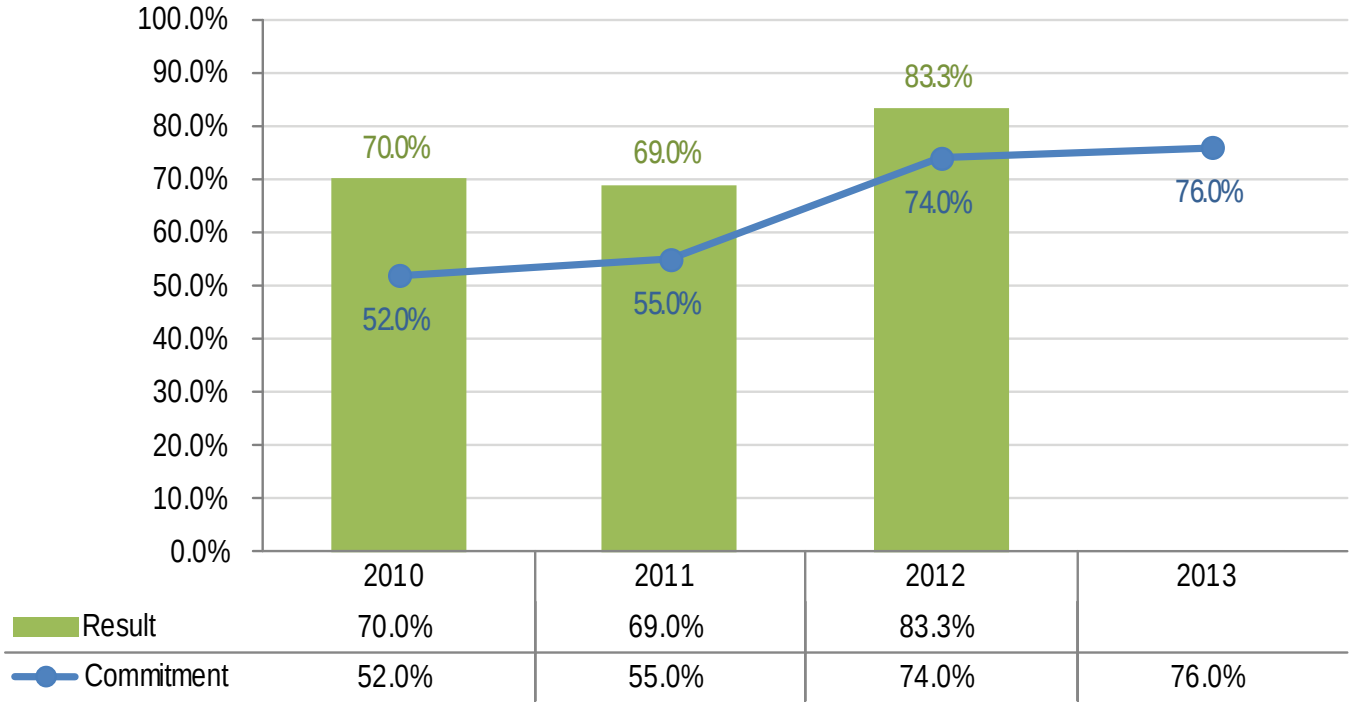


Figure 82: Dissolved Oxygen in Long Island Sound Bottom Water August 15-17, 2011



Long Island Sound program's measurement on reduction in nitrogen discharges (SP-41) from sewage treatment plants was 83.3 percent compared with the target of 74 percent in 2012. Data is collected on a calendar year basis. This ensures that the full seasonal variation in biological treatment methods is accounted for in the results (e.g., colder winter temperatures slow down biological nitrogen removal processes, wet spring weather can inhibit biological controls at treatment plants).

Figure 83: Percent of Goal to Reduce Long Island Sound Nitrogen by Fiscal Year (LI-SP41)



	2010	2011	2012	2013
Result	70.0%	69.0%	83.3%	
Commitment	52.0%	55.0%	74.0%	76.0%