FY 2011 National Water Program End of Year Performance by Subobjective

The following chapters provide a summary of the progress made toward accomplishing environmental and program goals for each subobjective described in the *FY 2011 National Water Program Guidance*. Each subobjective chapter includes the following information:

- A brief summary of overall performance in 2011 and the previous four years for measures under each subobjective.
- A description of performance highlights, including what commitments were met and what factors contributed to success.
- A description of management challenges, if appropriate, identifying key factors that led to measures not being met and next steps to improve performance for the future.

Each subobjective section focuses primarily on measures with FY 2011 commitments. Indicator measures are discussed where trends significantly differ from previous year's results. Annual Commitment System (ACS) measure codes (e.g., SP-1) are provided in the text in parentheses.

Key for Reading Performance Measure Charts and Tables

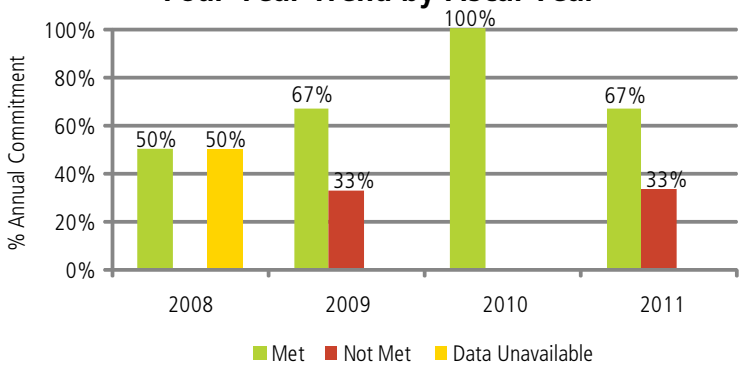
For all charts with national trend results, commitments are reflected by blue trend lines and results by vertical bars. For charts with regional FY 2011 results, a dotted line (in orange) indicates the national FY 2011 commitment for that particular measure. Although regions use the national commitment as a point of reference in setting their annual commitments, regional commitments may vary based on specific conditions within each region. Green bars in both national and regional charts identify commitments met, and red bars identify measures not met. A purple bar indicates that the Agency did not set a commitment for that year.

For the measure summary tables in each subobjective chapter, a green "up" arrow means that a measure met its FY 2011 commitment, and a red "down" arrow indicates that the annual commitment was not met. The letter "I" means that the measure is an indicator measure and did not have an annual commitment for FY 2011. Measures without data or not reporting in FY 2011 are indicated by "Data Unavailable." An "LT" symbol notes that the measure has a long-term goal and does not have an annual commitment. A gold star (★) in the past trends column highlights that the measure has met its annual commitment 100% of the time over the past four or five years. And finally, the appendix number represents the page in Appendix D (A-00) on the website where additional details about the measure can be found, and the figure number is the number of the chart in the chapter.

Subobjective: Long Island Sound

The Long Island Sound Program was successful in meeting two of its three commitments in FY 2011 (Figure 61).

Figure 61: Long Island Sound Subobjective Four-Year Trend by Fiscal Year



FY 2011 ACS Code	Abbreviated Measure Description	Commitment Met/Not Met (I = Indicator) (Data Unavailable = No Data/Not Reporting) (LT = Long-Term Target)	Past Trends: # of Years Met	Appendix Page Number (D-0)/ Figure Number
Subobjective 4.3.6 Long Island Sound				
SP-41	Reduce Long Island Sound nitrogen	▲	3/4	D-63
SP-42	Reduce Long Island Sound hypoxic zone	LT		D-64/Fig. 63
SP-43	Restore Long Island Sound coastal habitat	▲	4/4★	D-64
SP-44	Re-open river and streams for fish passage	▼	3/4	D-65

More than 20 million people live within 50 miles of the 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 the 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 2011 dollars, that equates to $9 billion. The 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 2011 Performance Highlights and Management Challenges

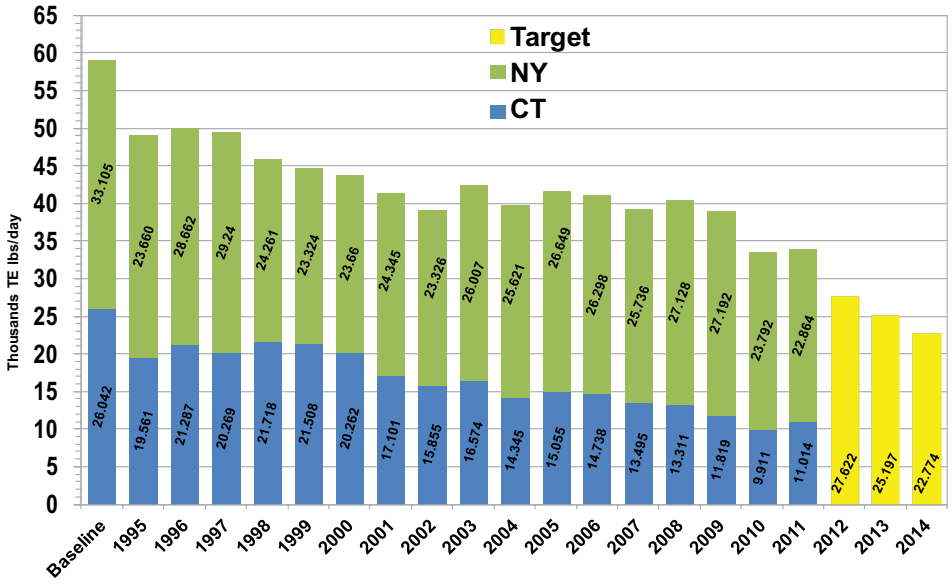
The Long Island Sound Program significantly exceeded its 2011 commitment (221 acres) by restoring or protecting 361 acres of coastal habitat, including tidal wetlands, dunes, riparian buffers, and freshwater wetlands (SP-43).

In 2011, the Long Island Sound Program achieved 72% of the Agency's 2014 goal for reopening river and stream miles to diadromous fish passage (13.1 miles in FY 2010 and 0.2 miles in FY 2011) (SP-44). This measure is an annualized estimate of a six-year long-term goal of the Long Island Sound Management Conference Partners to reopen 50 river miles to fish passage. Many factors affect the ability to initiate, continue, or complete projects, including coordination among landowners; easement and access issues; construction variables; coordination of equipment, supplies, and personnel; and weather and seasonal factors that may affect timing of onsite work.

The Long Island Sound Program has continued to make substantial progress in reducing point source nitrogen discharges to Long Island Sound and has exceeded the 2011 percentage target of reduction toward its 2014 goal (SP-41). States reported via EPA an average daily discharge of nitrogen of 33,878 Trade Equalized (TE) pounds, which was a reduction from the baseline discharge of 59,146 TE pounds and represents 69% of the final reduction target of 100% (Figure 62). This achievement was due substantially to New York City's Sewage Treatment Plant (STP) nitrogen reduction improvements. The 2011 percent reduction target was 55 percent.

Figure 62:

Long Island Sound
Point Source Nitrogen Trade-Equalized Loads
1995-2011
105 NY/CT STPs



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 total maximum daily load (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 level of DO in the Long Island Sound is the size and duration of its hypoxic zone. In 2011, the maximum area and duration of hypoxia in the Long Island Sound was 54 days and 130 square miles (SP-42) (Figure 63). Compared to the pre-nitrogen TMDL average of 56 days and 208 square miles, this is an improvement in water quality for DO. This environmental response appears to be partly the result of continued progress in nitrogen reduction in waters leading to the Sound, as well as wind-mixing events in early August that ventilated bottom waters (Figure 64). It should be noted, however, that the environmental response in coastal waters to reductions in anthropogenic nitrogen is generally not linear, and the response time and trajectory of recovery vary by system. This appears to be true for the Long Island Sound.

Figure 63: Reduce Long Island Sound Hypoxic Zone Trend by Fiscal Year (SP-42)

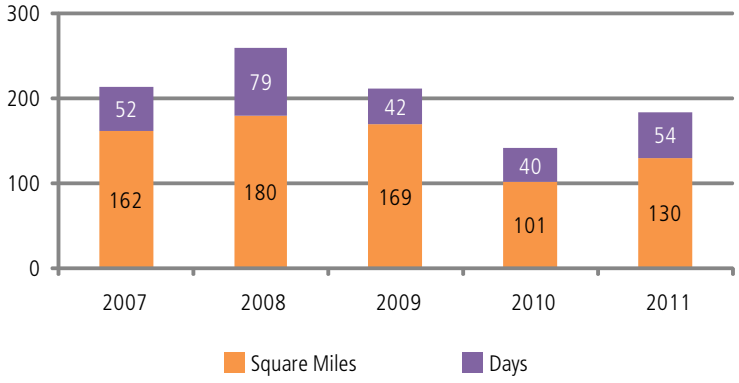


Figure 64:

DISSOLVED OXYGEN IN LONG ISLAND SOUND BOTTOM WATERS

August 15-17, 2011