

LONG-TERM WATER QUALITY MONITORING PROGRAM FOR THE NEW YORK/NEW JERSEY HARBOR

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ABSTRACT

The New York/New Jersey Harbor is a complex tidally-influenced estuary with multiple bays, tributaries and associated wetlands. Over the years, the waters of the Harbor have received large quantities of both treated and untreated industrial and municipal waste discharges, which affected water quality in the Harbor. Subsequent to the implementation of the Clean Water Act in the 1970s however, a number of the key water quality indicators have shown improvement. Because of the importance of improving water quality from the ecological, human health, recreational and aesthetic perspectives, the New York-New Jersey Harbor Estuary Program (HEP) worked with the New York City Department of Environmental Protection (NYCDEP), the New Jersey Harbor Dischargers Group (NJHDG) and others to develop a collaborative Harbor-wide monitoring program. Through this program NYCDEP and NJHDG are collecting samples from a total of 68 sites throughout the Harbor, and in the important tributaries. Samples are collected and analyzed throughout the year, with a greater sampling frequency in the summer months. The parameters which are being measured include dissolved oxygen, pH, Secchi depth, coliforms (fecal and Enterococcus), salinity, total suspended solids, CBOD-5 day, dissolved organic carbon, temperature, nitrogen (NO₂, NO₃, Kjeldahl nitrogen, ammonia) and phosphorus (total phosphorus and ortho phosphorus) chlorophyll a and precipitation. The information is being used by the States of New York and New Jersey, as well as by HEP to evaluate long-term trends in water quality in the Harbor, and to assess compliance with water quality standards. The data generated by NYCDEP and NJHDG has also been useful for developing and calibrating mathematical water quality models for the waters of the Harbor.

KEYWORDS

New York/New Jersey Harbor, water quality, long term water quality monitoring