CONTAMINANT REDUCTION

Toxics contamination is considered one of the most serious and challenging problems facing the New York-New Jersey Harbor Estuary Program. Contaminants such as mercury, PCBs, dioxins, and polycyclic aromatic hydrocarbons made their way into the estuary years ago, accumulating and settling in estuarine sediments.

Despite some progress made to clean past contamination and reduce or prevent more deposits, contaminants still enter the estuary via a variety of sources such as erosion of historically contaminated sediments, combined sewer overflows, atmospheric deposition, and tributary runoff. Scientists are still studying the full range of contaminant effects to the ecosystem; however, sediment toxicity and impaired benthic community structure are apparent and persistent problems.

THE NATIONAL ESTUARY PROGRAM IN ACTION

New York-New Jersey Harbor Estuary Program

Reducing point and non-point sources of contaminants entering the harbor is one of many goals HEP has defined in its action plan to address contaminated sediment. Multi-partner efforts are taking place to help reduce toxicity levels in new sediment deposits as well as finding ways port operators can safely dredge and reuse sediment. In a similar vein, HEP is taking a lead role in developing Total Maximum Daily Loads (TMDLs) for toxics in the harbor. Of particular focus and concern are efforts to dredge the harbor and increase the depth of the channel to accommodate increasingly bigger container ships. With much of the harbor sediment already contaminated, a large dredging project could have serious impacts on habitat and water quality. Dredging contaminated sediment requires proper treatment and/or disposal of the material—a complex and expensive responsibility that no single entity is equipped to undertake alone.

To determine the origins of contamination and to assess the va-

Photo Credit: NY-NJ Harbor Estuary Program

riety of actions needed to reduce inputs, the states and PANYNJ embarked on a 10-year, $30-million-dollar project collecting field data to develop a state-of-the-art model to identify areas with the greatest threat to different water body uses and set the groundwork for developing effective management strategies.

A consortium of agencies and institutions evaluated contaminant levels in water, biota, and sediments and studied numerous contamination sources, such as tributaries, legacy sediments, sewage treatment plants, landfills, wastewater, combined sewer overflow, and stormwater discharges. In 2007, the group completed the Assessment Phase of the Contamination Assessment and Reduction Project (CARP)—considered by many experts to be the largest and most advanced effort of its kind.

The team also developed sediment decontamination processes and considered various options for implementing management programs. The U.S. Environmental Protection Agency (EPA) plays an important role, as two of the largest sources of sediment contamination to the harbor are designated Superfund sites. HEP also facilitates and supports research, mathematical modeling, and assessments to inform regulatory actions taken by the states and the EPA.

HEP's Toxics Work Group is currently developing a technical analysis for attainment of standards for toxics and any necessary reduction targets. HEP is using the CARP model to assist with creating the new TMDL for toxics, which they plan to finish in early 2010, along with new TMDLs for pathogens and nutrients. And since one contaminant can impact another, HEP is studying the interrelationships and impacts of all categories to help enable states to roll out all the TMDLs simultaneously. As a result, treatment plant operators and others will be able to implement the necessary load reduction programs more efficiently and cost-effectively. Meanwhile, managers can access the CARP tool and evaluate different scenarios in order to assess their potential contribution to the quality of the Harbor Estuary.

Visit **www.harborestuary.org** to learn more about this and other HEP efforts.

EPA's National Estuary Program (NEP) is a unique and successful coastal watershed-based program established in 1987 under the Clean Water Act Amendments. The NEP involves the public and collaborates with partners to protect, restore, and maintain the water quality and ecological integrity of 28 estuaries of national significance located in 18 coastal states and Puerto Rico.

For more information about the NEP go to www.epa.gov/owow/estuaries.