

Efforts Under Way

As noted throughout this report, a number of serious environmental challenges face the Delaware Bay and Estuary, including depletion and contamination of aquifers, land use pressures, wetlands impacts and losses, watershed water quality impairment, air pollution, and threats to biodiversity and habitat.

Efforts under way in the basin to improve and protect the environment include initiatives spearheaded by partnerships comprised of the Partnership for the Delaware Estuary, the Delaware Department of Natural Resources and Environmental Control, the Delaware Estuary Program, the U.S. Environmental Protection Agency, the Delaware River Basin Commission, and many other state and non-profit agencies and conservation groups. Many efforts are ongoing. The following is a partial listing.

Partnership For The Delaware Estuary

The Partnership for the Delaware Estuary, Inc. is a regional, non-profit organization, based in Wilmington, Delaware, that is dedicated to the promotion and conservation of the Delaware Estuary. The Partnership promotes education on the importance of the estuary, both from within the formal school-based education structure and through hands-on educational initiatives directed to the general public. They also coordinate habitat restoration projects for corporations, and through their mini-grant program, provide funding and support for other non-profit organizations. The Partnership for the Delaware Estuary involves all of these groups in activities that reach thousands of individuals in building stewardship for the estuary and its natural resources.



Photo by NOAA

Tributary Action Teams

A Tributary Action Team program was initiated during the autumn of 1998 by the Center for the Inland Bays to bring together local stakeholders to develop strategies for reducing nutrients and restoring habitat in the bays. The goal is for the teams to develop a list of strategies that, when implemented, will help to control and reduce pollutants identified as causing impairments to the surface water quality and biological communities. These strategies are necessary to meet the **total maximum daily loads** (TMDLs) established for targeted pollutants for all of the state's impaired waterways.

The program has extended from the Inland Bays to other state watersheds. The Appoquinimink Tributary Action Team is working on a pollution control strategy to reduce **non-point source** nutrient loading by at least 60 percent for nitrogen and phosphorous. The Murderkill team continues to refine strategies to achieve a 30 percent reduction in nitrogen and 50 percent reduction in phosphorus loads from non-point sources. Both teams hold regular public forums.

Nutrient Management Commission

The Delaware Nutrient Management Commission was established in June 1999 after passage of the Delaware Nutrient Management Law. The Commission is tackling the task of managing nutrients with a comprehensive program addressing not just agricultural sources, but the entire spectrum of nutrient contributions, including golf-course landscape operations, residential inputs, and residential and commercial fertilizers. Current nutrient management plans are in place for more than 300,000 acres statewide.

The Commission, through their Nutrient Relocation Program, provides assistance to transport excess poultry litter to areas that can utilize the additional nutrients throughout Delaware, Maryland, New Jersey and Pennsylvania. Since 2001, the program has relocated over 200,928 tons of



Manure storage facilities limit nutrient runoff manure (figure includes 44,000 tons exported by Perdue AgriRecycle pellet-fertilizer plant).

Watershed Road Signs

As part of a statewide campaign to educate Delawareans and visitors about the state's four major drainage areas, watershed signs have been placed throughout the state to identify the Christina, Inland Bays, Chesapeake Bay and Delaware Estuary drainage areas. The watershed road-sign project is part of a comprehensive outreach program that includes a watershed curriculum taught in seventh grade science classes throughout the state.

The road sign initiative has been accomplished through a cooperative effort between DNREC, the state Department of Transportation and the University of Delaware's Water Resources Agency.

Northern Delaware Wetland Rehabilitation Plan

The Northern Delaware Wetlands Rehabilitation Program was established by the Department of Natural Resources and Environmental Control to bring together civic and business leaders, scientists, resource managers and property owners to develop strategies to restore nearly 10,000 acres of wetlands – 31 distinct sites along the Christina and Delaware rivers in New Castle County.

These marshes once contained some of the state's richest waterfowl populations. They served as important nursery grounds and breeding habitat for a wide variety of fish and other wildlife. They also helped filter pollutants and sediments out of river water and provided a buffer zone during storms, protecting properties from flooding. Many of these wetland marshes have been impacted, some as far

back as when the early settlers arrived. It is important to restore these marshes to improve water quality, increase wildlife populations, control and eradicate nuisance plants, and help sustain rare and threatened species.

Toxics Advisory Committee

The Delaware River Basin Commission's (DRBC's) Toxics Advisory Committee is helping to guide development of the overall TMDL for **polychlorinated biphenyls**, or **PCBs** – identified as a contaminant of concern in water, sediment and fish of the Delaware Estuary. Elevated levels of PCBs in fish tissue have caused Delaware, Pennsylvania and New Jersey to recommend that people limit or curtail their consumption of fish caught from the Delaware Estuary. A listing of Delaware fish advisories that apply to the main stem of the Delaware Estuary and tributaries can be found in the Delaware Fishing Guide brochure or at the following web site: <http://www.dnrec.state.de.us/fw/advisory.htm>

A Stage 1 TMDL for PCBs in the Delaware Estuary was established on December 15, 2003 by the EPA on behalf of Delaware, New Jersey and Pennsylvania for the area from the head of tide at Trenton, NJ to Liston Point, DE. A Stage 2 PCB TMDL is currently under development and is scheduled to be established by December 15, 2006. The Stage 2 TMDL will refine the work done in Stage 1 for the area from Trenton to Liston Point, plus will add the additional area of the Estuary from Liston Point to the mouth of the Delaware Bay. Further details of the overall PCB TMDL effort can be found at the DRBC web site (<http://www.state.nj.us/drbc/drbc.htm>). The DRBC is serving to coordinate the technical activities associated with the PCB TMDL.

Environmental Indicators

The Delaware Estuary Program has established nine environmental indicators for the Delaware Estuary that will help to measure progress toward improvements. The initial indicators are: American Shad Abundance; Dissolved Oxygen; Suitability of Estuary Waters for Swimming; Geographic Extent of Approved Shellfish Harvesting Areas; Developed Land and Population; Agriculture in the Delaware Estuary; Acres of Parkland; Water Use Efficiency; and Contaminated Sediments in the Estuary.