

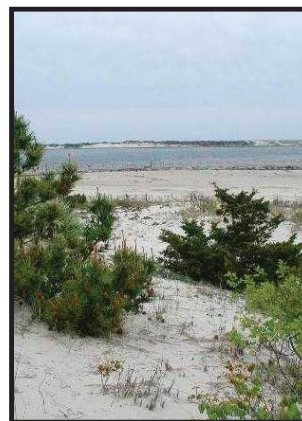
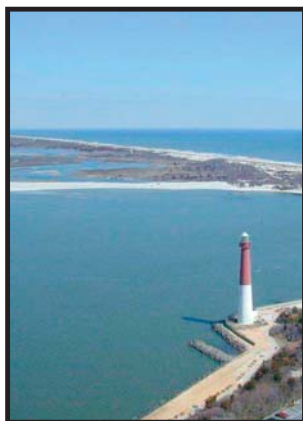


Strengthening a Key Partnership to Protect and Improve Water Quality in the Barnegat Bay

Data collected by state and federal scientists and their colleagues in the academic community have provided compelling evidence that the Barnegat Bay estuary is experiencing ecological decline. Last June, the New Jersey Department of Environmental Protection (DEP) initiated a strategic action plan in partnership with the Barnegat Bay National Estuary Program (BBNEP) and its stakeholders to address this decline.

The BBNEP is a partnership of federal, state, and local government agencies, academic institutions, and other organizations which work together on diverse research, management, and education efforts to address water quality and other issues throughout the Barnegat Bay watershed. Established as a National Estuary Program in 1996, the BBNEP is one of 28 such programs nationwide.

The 75-square mile Barnegat Bay-Little Egg Harbor watershed supports an incredible diversity of unique uplands, including a portion of the world's largest expanse of Pine Barrens which is home to distinctive plants (e.g., dwarf pitch pines) and dozens of rare butterflies and moths. The watershed's unique lowlands include fringing bands of Atlantic white-cedar forests, which are home to high-bush blueberry and the federally endangered swamp pink. The bay contains the State's largest population of eelgrass, which provide essential habitat for important species such as flounders, crabs and clams. On its seaward edge, the bay is fringed by two barrier islands with the region's most beautiful beaches that are visited by millions of people and sustain a multi-billion dollar tourism industry.



Unfortunately, as more people have moved into this incredible watershed to live, work and play, the natural landscapes surrounding the bay continues to be developed at rapid rates. Buffer areas - those areas which are immediately adjacent to water bodies and are essential to maintaining water quality - are being lost rapidly from the watershed despite existing legal protections. This vital watershed now shows increasing signs of strain from everyday activities such as boating, lawn maintenance and washing cars. The collective impacts of these and other activities now threaten the ecological integrity of the entire watershed and the very qualities that attracted us to the region and sustain our quality of life.



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To begin the strategic action partnership, DEP conducted an assessment of the water quality information generated by the BBNEP's continuously operating and recording water quality monitors, or data-loggers, and reviewed other research by federal, state and academic partners on the ecological conditions of the Barnegat Bay. DEP's analysis of the oxygen data, which revealed daily decreases in the summer to levels that would not sustain aquatic life, led to the upper Barnegat Bay being listed as "impaired" in the State's Integrated Water Quality Report.



Important species of the Barnegat Bay Estuary: eelgrass; hard clams; crabs; and swamp pink

In addition, to better understand the casual mechanisms of these declines and how to address them, DEP is funding the development of a benthic index, which is a set of biological indicators. This index will provide a more accurate and responsive measure of conditions in the bay, and will be included in the regulatory framework used by the DEP to assess the health of the bay. The DEP has also developed a technical group, which includes representatives of the fertilizer industry and other key stakeholders, to reduce the amount of nutrients going into the bay from fertilizers. DEP is developing model fertilizer ordinances and will work with the BBNEP and its partners to encourage municipalities to pass ordinances to reduce nutrients in the bay. Finally, DEP is working with the BBNEP and its stakeholders to develop public education programs about how runoff from fertilizers and other nonpoint source pollution is affecting the bay, and what can be done to prevent it.

Preventing habitat loss and restoring habitats is another goal of the partnership. Working with the partners in the Barnegat Bay watershed, especially the Ocean County Natural Lands Trust Fund Program (OCNLT) and the Trust for Public Land (TPL), has been essential to prioritizing and protecting the remaining open space in the watershed. The 1995 publication of TPL's *The Century Plan* highlighted land conservation as a water-protection strategy for the Barnegat Bay watershed and paved the way, in 1997, for the passage of an Ocean County tax to establish and fund the OCNLT. Today, the funding program raises an average of \$10 million a year, with which the county has acquired more than 7,200 acres.

Recently, TPL worked with many partners throughout the watershed, including DEP and the BBNEP, to use a GIS-based approach to prioritize lands for acquisition in the Barnegat Bay watershed. A new publication based



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on this work, *Barnegat Bay 2020: A Vision for the Future of Conservation*, makes a case for land conservation as a water-quality protection tool and identifies the highest-priority parcels to protect.

In addition to supporting land acquisition, DEP and the BBNEP are working together to enhance riparian habitats to improve water quality on a number of public properties throughout the watershed. Many of these projects include outreach and education components to educate the public about the value of these riparian projects.

Addressing fisheries declines is also a critical component of this effort. The Barnegat Bay ecosystem contains most of New Jersey's remaining eelgrass beds. Eelgrass provides essential habitat for fish and invertebrates, including the blue crab and hard clam, which historically have supported large commercial and recreational fisheries in the bay. DEP, the BBNEP and others have been working together via a Fishery Workgroup to prioritize data gaps and other information needs to better manage the bay's major fisheries.

The Barnegat Bay is one of the jewels of New Jersey, which is critical to the economic and ecological well-being of our state. The Barnegat Bay is also a harbinger of the challenges and opportunities facing other coastal watersheds in New Jersey. Thus, a strong partnership between DEP, the BBNEP and other stakeholders is central to developing new strategies and approaches to addressing the sustainability of our coastal communities and their supporting ecosystems. DEP and its partners are committed to ensuring that Barnegat Bay will remain a viable and healthy multi-use ecosystem that all can enjoy for many years to come.