

# NBEP Releases *Currents of Change*: Comprehensive Assessment of Narragansett Bay Ecosystem

~Tom Ardito

Narragansett Bay is a remarkable natural resource, providing a wealth of environmental values—from well-loved local beaches to multi-million dollar quahog, lobster and recreational fisheries. For thousands of years, residents of the Narragansett Bay Region have used the resources of the estuary, even as we've shaped the Bay and its watershed to suit the needs of our communities—first for agriculture; later for manufacturing; more recently to satisfy the residential, retail and transportation demands of a consumer society.

A new report provides the most comprehensive assessment to date of Narragansett Bay's ecosystem—its ability to support our uses of its resources, and the effect of land-based activities on its waters and wildlife. *Currents of Change* was developed by the Narragansett Bay Estuary Program, working with more than 70 experts: university and agency scientists; state and federal managers; municipal officials; and representatives of non-governmental organizations in both Rhode Island and Massachusetts.

In order to understand all of the influences on the Bay ecosystem, the report focuses on the Narragansett Bay Region: an area of more than 2000 square miles, home to more than two million people in 100 cities and towns in Rhode Island and Southeastern Massachusetts. All of the fresh water which flows into Narragansett Bay—two billion gallons per day, on average, from rivers, streams, waste-water treatment plants, run-off and groundwater—originates in this area. Human activities throughout the region, therefore, have the potential to affect the Bay's environmental quality.

A central conclusion of *Currents* is that they do. The report notes progress in reducing and treating “point sources” of pollution such as wastewater treatment plants and industrial discharges. Completion of new stormwater storage tunnels in Providence and Fall River, for example, are expected to reduce the closure of shellfish beds following rainstorms. *Currents* also finds, however, that uncontrolled stormwater runoff—from roads, parking lots, and other developed areas—is cause for concern and an increasing problem.

Since World War II, the pace of land development throughout the Narragansett Bay Region has outstripped population growth—in Rhode Island, for example, by a factor of nine from 1970-1995. As forests and farms were converted to housing developments, roads and shopping malls, the volume of storm water flowing into rivers, streams and the coastal waters increased—carrying tons of pollution into the Bay each year.

Scott Wolf, executive director of Grow Smart Rhode Island, noted the connection between land use and water pollution. “One of the most subtle and serious threats to Narragansett Bay's water quality is non-point source pollution,” he said, “a form of pollution exacerbated greatly by sprawl-style, auto-dependent, big-box-focused development.”

David Gregg, executive director of the R.I. Natural History Survey and a contributor to *Currents*, agreed. “Land is a non-renewable resource and we're consuming it like there's going to be more growing next season,” he said. “As I see it, this report is a strong endorsement for managed growth.”

More conclusions of *Currents of Change*:

- Hypoxia, or low-oxygen conditions, are prevalent in upper Narragansett Bay. Hypoxia can cause severe fish kills and degrades bottom habitat, with impacts to bottom-dwelling organisms such as winter flounder and shellfish. Hypoxia is caused by nutrient pollution from wastewater treatment plants and other land-based sources.
- Bacteria—an indicator of potential disease-causing organisms—is a problem in nearly half the region's rivers and in Narragansett Bay, leading to closures of shellfish beds and bathing beaches. Stormwater runoff from the land is a principal source of bacteria to waters.
- Rivers throughout the region exhibit low-flow conditions, harming fish and wildlife habitat. The condition is caused by drinking water withdrawals, irrigation, impervious surfaces and other impacts of development.
- Habitat restoration is an emerging technology which, increasingly, is being used to improve rivers, streams and wetlands throughout the Narragansett Bay Region.

Running throughout the report is the theme of climate change—one of the most significant factors influencing, directly and indirectly, conditions in Narragansett Bay and its watershed.

Though *Currents* provides the most rigorous ecosystem assessment to date of the bi-state Narragansett Bay Region, it also points to significant gaps in scientific information and the interpretation of data. For example, few studies or monitoring programs are coordinated across state lines, although more than half of the Bay watershed is in Massachusetts, and rivers and streams flow freely across the boundary.

David Gregg commented: “We need to come up with ways to ensure that we're collecting the data we need, and interpreting the data we collect.”

—Thomas Ardito is editor of the Narragansett Bay Journal.

## Go Deeper!

To download *Currents of Change* or for more information on Narragansett Bay and the Narragansett Bay Estuary Program, see our website, [www.nbep.org](http://www.nbep.org). Hard copies of the report are available on request.