

Ambient Water Monitoring Strategies in New Jersey: Headwaters to Near Shore Ocean

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ABSTRACT

New Jersey's cooperative water monitoring program extends from its stream headwaters to its near shore ocean waters. Physical, chemical, microbiological and biological characteristics of waters are measured to assess the various designated uses, including aquatic life, potable, recreational, and fish and shellfish consumption uses. Network and targeted sampling of non-tidal streams, rivers, lakes, tidal streams, estuaries, beaches and marine waters, as well as the state's shallow groundwaters is conducted. Somewhat unique features of NJ's monitoring strategy include the integration of the source trackdown, stormwater monitoring and alternate microbiological tests developed for NJ's Shellfish Sanitation Program into its freshwater monitoring programs, and the ongoing extension of the benthic ecological assessments integral to its freshwater programs into its coastal water sampling. Sampling designs have been developed to address various water resource information needs, including the CWA 303(d) and 305(b) evaluations for the state Integrated Water Monitoring and Assessment Reports. Sampling designs include fixed station, rotating basin, and probabilistic approaches.

The data generated by the statewide water monitoring networks operated by the New Jersey Department of Environmental Protection (NJDEP) are supplemented by results provided by key partners in the State's water monitoring community, including USGS's NJ Water Science Center cooperative monitoring program, two interstate organizations – the Delaware River Basin Commission and the Interstate Environmental Commission (NY-NJ Harbor), EPA Region 2, regional programs such as the Pinelands Commission, academia (e.g., Rutgers & Monmouth Universities), county monitoring programs, a vibrant Watershed Watch volunteer network, and the data for the NJ sites in the national EPA surveys such as the National Coastal Assessment (NCA) and the Wadeable Streams Assessment (WSA). The New Jersey Water Monitoring Council provides a coordinating vehicle to share monitoring information among these various partners. Despite the integration of data from a variety of monitoring partners, clear gaps exist in the State's capacity to assess the water quality status and trends for all of its waters and all designated uses. These gaps and the potential approaches to fill them are articulated in *NJ's Long-term Monitoring and Assessment Strategy (2005-2014)* found at <http://www.state.nj.us/dep/wms/>. NJDEP uses this long-term plan and periodic plan updates to guide the State's water monitoring programs and the allocation of resources for both federal 106 water grant funds and available state funds. Strategic planning is conducted jointly with EPA and other NJ Water Monitoring Council members. The water monitoring program delivers its water quality information to the public and water resource decision makers through a variety of web-based mechanisms, including state and federal data exchange systems.

KEYWORDS

State Water Monitoring, State Water Monitoring Council, New Jersey, Freshwater, Coastal Waters, Long-term Water Monitoring and Assessment Strategy