

REAL-TIME WATER QUALITY MONITORING NETWORK IN NEW JERSEY COASTAL WATERS

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ABSTRACT

Real-time water quality monitoring of New Jersey's coastal bays has been established through a coordinated effort of federal and state government and academia. With initial funding from USEPA, the NJ Department of Environmental Protection established four real-time water quality monitoring buoys in 2001 in the State's southern inland bays. Subsequently, the Barnegat Bay National Estuary Program (with support from Rutgers University) added two more land-based monitoring installations in Barnegat Bay, just north of the original 4 units. In 2007-2008, Monmouth University will be adding 6 more land-based installations in the State's bays north of Barnegat Bay. These units are measuring temperature, dissolved oxygen, salinity, pH, turbidity and chlorophyll a at 15-minute intervals. A base station maintained by NJDEP polls each installation every hour, downloads the data, plots the recent data and posts the information to a web site. Cell phone telemetry was found to be the most cost effective means of transmitting data from the field to the base station. Data is archived in a web-accessible MySQL database. Data collected is used by researchers to observe development of phytoplankton blooms, study stormwater impacts to coastal water quality and to measure the occurrence and duration of low oxygen conditions in these coastal bays. The public uses salinity and temperature readings from these sites for fishing conditions and winter icing conditions. The information can be accessed at <http://www.nj.gov/dep/bmw/sensorhome.htm>.

KEYWORDS

water quality, real-time monitoring, dissolved oxygen, telemetry