DEP FOCUS
New Jersey Department of Environmental Protection
Jon S. Corzine, Governor
Lisa P. Jackson, Commissioner

Fall 2008 • Volume 1 Issue 2

New Technologies Improve Water Quality Monitoring For New Jersey's Coast

With its 127 miles of Atlantic Ocean coastline and 83 miles of shore along the Raritan and Delaware Bays, DEP's Water Monitoring and Standards Program is ever vigilant to safeguard the integrity of New Jersey's coastal resources and marine environment. This is achieved through comprehensive policies, substantive programs and cutting edge research that looks at new technologies to improve water quality monitoring.

The ability to track sources of pollution is key to identifying water-quality problems. All along the coast, there are areas in which microbial pollution forces restrictions on bathing or shellfish harvesting. In areas with chronic problems, the DEP conducts sampling (often during storms) to identify the principal pollution sources, which can include wildlife, domestic animals and people. Knowing the source can go a long way toward guiding the solution.

Determining a human or animal source is now possible with new tests that the DEP's water monitoring and assessment laboratories are prepared to perform. Tests such as Multiple Antibiotic Resistance testing, coliphage viral analysis and optical brightener analysis give DEP scientists clues as to human or non-human sources, enabling them to pinpoint pollution sources and develop remediation strategies.

New Jersey uses both real-time water quality monitors and aircraft remote sensing for chloropyll a to assess potential human and ecological health impacts in New Jersey's estuarine and near shore ocean waters.

New technologies are also making it feasible for the DEP to significantly enhance the information available for making critical water-quality decisions. New Jersey now uses both real-time water quality monitors and aircraft remote sensing for *chlorophyll a* to assess potential human and ecological health impacts in New Jersey's estuarine and nearshore ocean waters.

Chlorophyll a is the plant pigment that makes leaves green, and it occurs in microscopic plants in coastal waters. An overabundance of nutrients in the water causes these microscopic plants to grow excessively, causing blooms. Certain species of these plants produce toxins that can render seafood unfit to eat or irritate bathers' skin. The DEP has specifically monitored for these toxin-producing plants for many years. These new

DEP FOCUS
New Jersey Department of Environmental Protection
Jon S. Corzine, Governor
Lisa P. Jackson, Commissioner

Fall 2008 • Volume 1 Issue 2

New Technologies Improve Water Quality Monitoring For New Jersey's Coast *(cont.)*

technologies make monitoring more efficient and effective by targeting the sampling to the areas where blooms are likely occurring.

For public health protection, high chlorophyll a concentrations prompt the DEP to do intensive sampling for potential algal species blooms that may be harmful to people through recreational contact or shellfish consumption. The DEP deploys four real-time water quality monitors in the state's estuarine waters to watch for such occurrences. Every 15 minutes, these monitors measure *chlorophyll a* levels, as well as several other parameters, and provide the data to the DEP every hour. In 2007, DEP outfitted the plane it uses for coastal surveillance with a sensor that records *chlorophyll a* concentrations in the ocean surface. This information will further enhance the Department's ability to track down and correct water quality problems.

The Water Monitoring and Standards Program is continually evaluating ways to track down water quality problems and determine solutions to water pollution. For more on the DEP's Water Monitoring and Standards Program, visit **www.nj.gov/dep/wms/**