National Aquatic Resource Surveys: An Update

January 2011

Working with state, tribal, and other federal agency partners, the U.S. Environmental Protection Agency (EPA) is conducting statistical surveys of the nation's streams and rivers, lakes and reservoirs, coastal waters, and wetlands.

Introduction

- **States, tribes, federal agencies and other organizations collect water quality data to respond to many Clean Water Act requirements. Because they use differing monitoring designs, indicators, and methods, EPA cannot combine their information to effectively answer questions about the quality of the nation's waters or track changes over time.**

- **EPA and its state, tribal, and federal partners are implementing a series of aquatic resource surveys to address this national information gap.**

These National Aquatic Resource Surveys (NARS) use randomized sampling designs, core indicators, and consistent monitoring methods and lab protocols to provide statistically-defensible assessments of water quality at the national scale. Additionally, the national surveys are helping build stronger monitoring programs across the country by fostering collaboration on new methods, new indicators and new water quality research. EPA plans to implement the surveys on a five year rotation. As the surveys repeat, we will be able to track changes over time and advance our understanding of important regional and national patterns in water quality.

Streams and Rivers

- **A 2006 water quality survey, the Wadeable Streams Assessment, found that 28% of the nation's small streams support healthy biological communities, a key goal of the Clean Water Act.**

- **The survey reported that nutrients and excess sedimentation are at high levels in 30% of the nation's streams. Streams with high levels of these pollutants have twice the risk of degraded biological communities as streams with low levels.**

- **Data from the next of these surveys — the 2008-2009 National Rivers and Streams Assessment — are now being analyzed for release in 2012.**

The 2006 streams survey highlighted significant problems affecting streams and established a nationally consistent baseline against which we can track water quality changes in the future.

In 2008 and 2009, EPA, states, tribes and other partners sampled approximately 2,300 National Rivers and Streams Assessment (NRSA) sites. Data are now being validated and analyzed, and the final NRSA report is expected in 2012. The results from this survey will allow us to compare more recent water quality conditions in small streams with the findings of the 2006 Wadeable Streams Assessment.

Lakes, Ponds and Reservoirs

- **A 2007 survey of the nation's lakes, the National Lakes Assessment (NLA), found that 56% of our lakes are in good biological condition.**

- **The survey reported that more than one-third of our lakes exhibit poor shoreline condition. Poor biological health is 3 times more likely in lakes with poor lakeshore habitat.**

- **The NLA found that nearly 20% of lakes have high levels of nutrients. Lakes with excess nutrients are 2.5 times more likely to have poor biological health.**

- **Microcystin — an algal toxin that can harm humans, pets and wildlife — was found to be present in about one-third of U.S. lakes.**

In 2007, EPA, states, tribes and other partners sampled over 1,150 lakes for the NLA. State, USGS and other national labs analyzed tens of thousands of samples. The NLA provides data on the extent of lakes that support healthy biological communities and information on recreational indicators of lake condition. EPA and our partners continue to analyze data from the NLA, including creating a lake macroinvertebrate index, conducting regional or state specific assessments, and finalizing the results of the pathogen data.

A technical steering committee comprised of EPA, state, tribal, and various federal agencies is now planning the next NLA. The committee is reviewing the 2012 design and indicators, and will decide on final indicators by spring 2011.

Coastal Waters

- **The National Coastal Condition Assessments (NCCA) are documenting slight improvements in the quality of coastal waters, in spite of increasing development.**

- **The 2010 NCCA's sampling season concluded in October with state and other partners collecting data at more than 1,300 sites.**

- **To address the oil spill in the Gulf of Mexico, additional analyses of oil-related constituents are being conducted at a number of sites in the Gulf.**

The National Coastal Condition Reports (NCCR) describe the ecological condition of the coastal waters of the United States based on five indicators: a water quality index, a sediment quality index, a benthic index, a coastal habitat index, and a fish tissue contaminants index. The most recent report released in December 2008, the NCCR III, reported that the overall condition of the nation's coastal waters is fair based on an aggregation of the five indicators and has improved slightly since the 1990s.

In 2010, EPA, States, and other partners conducted sampling for the next NCCA. Field crews sampled over 1,300 marine and Great Lakes sites. State and contract labs across the country are analyzing and validating data for this survey. A final report is expected by December 2012.

Wetlands

- **In 2011, EPA and the states will be conducting a groundbreaking survey of the condition of the nation's wetlands, with a report planned for 2013.**

- **Planning and research for this survey has already moved the science of wetlands monitoring forward and has re-engaged many states in this effort.**

EPA is collaborating with the U.S. Fish and Wildlife Service (FWS) to design the National Wetland Condition Assessment to ensure that it effectively complements the FWS Status and Trends reports, which focus on the distribution of wetlands rather than their condition. EPA, states and tribes are coordinating a number of regional pilot projects to test design approaches, field protocols, and indicators for use in the survey. Lessons learned from these pilot projects are informing the final preparations for field and lab manuals, quality assurance, and other aspects of the survey.

To learn more about the National Aquatic Resource Surveys, visit www.epa.gov/aquaticsurveys