This document contains the National Water Quality Inventory: Report to Congress, 2002 Reporting Cycle: National Studies of Water Quality

The report can be downloaded from:

http://www.epa.gov/305b/

File 5 of 6

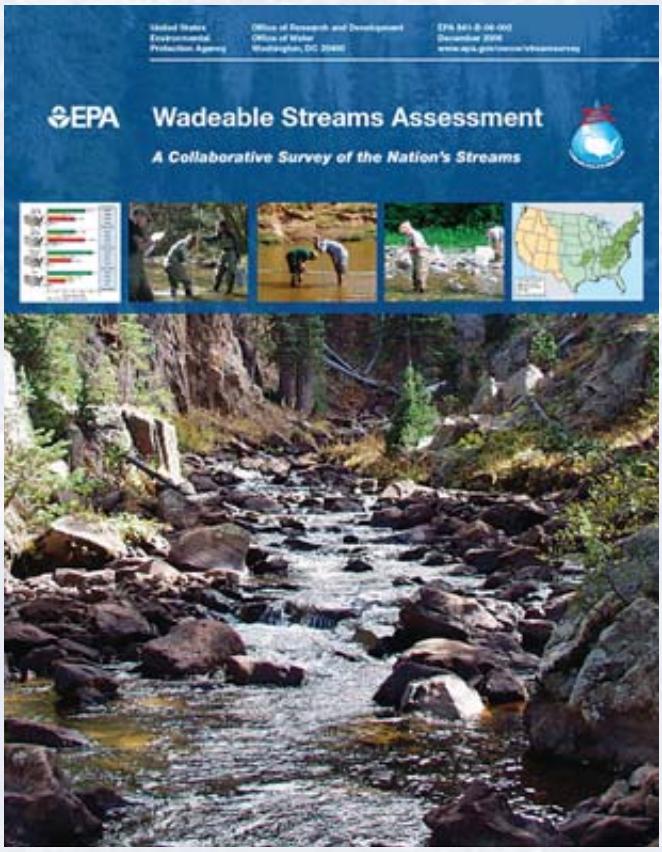
October 2007

National Study of Chemical Residues in Lake Fish Tissue

The National Study of Chemical Residues in Lake Fish Tissue (or the National Lake Fish Tissue Study) is nearing completion. This study includes the largest set of chemicals studied in fish and is the first national fish contamination survey to have sampling sites that were statistically selected. Agencies in 47 states, 3 tribes, and 2 other federal agencies collaborated with EPA for 4 years to collect fish from 500 lakes and reservoirs in the lower 48 states. Sampling teams applied consistent methods nationwide to collect samples of predator and bottom-dwelling species from each lake.

EPA is analyzing fish tissue samples for 268 chemicals, including mercury, arsenic, dioxins and furans, PCBs, and pesticides. A draft report is expected in the fall of 2007. This study will provide the first national estimates of mean concentrations of the 268 target chemicals in fish, as well as a national baseline to track the progress of pollution-control activities that limit release of these chemicals into the environment. For more information on the National Lake Fish Tissue Study, go to http://www.epa.gov/waterscience/fishstudy.

The National Lake Fish Tissue Study is analyzing fish tissue samples for 268 chemicals (Photo courtesy of EPA).



Wadeable Streams Assessment

The Wadeable Streams Assessment, a survey of the biological health of the nation's wadeable streams, was launched in 2004 by EPA and the states to provide a scientific baseline of stream water quality based on conditions at approximately 500 randomly selected sites across the central and eastern United States. With support from EPA, state water quality agencies sampled streams between June and October 2004 using the same types of methods at all sites. Crews collected macroinvertebrates, sampled water quality conditions, and evaluated physical habitat (i.e., the condition of the streambed, streambanks, and vegetation surrounding the stream site) at each site. Data from these sites were combined with data collected by EPA and western states in the Western Streams Pilot Study to draw conclusions about the condition of 100% of streams throughout each major ecological region of the contiguous United States (Figure 5).

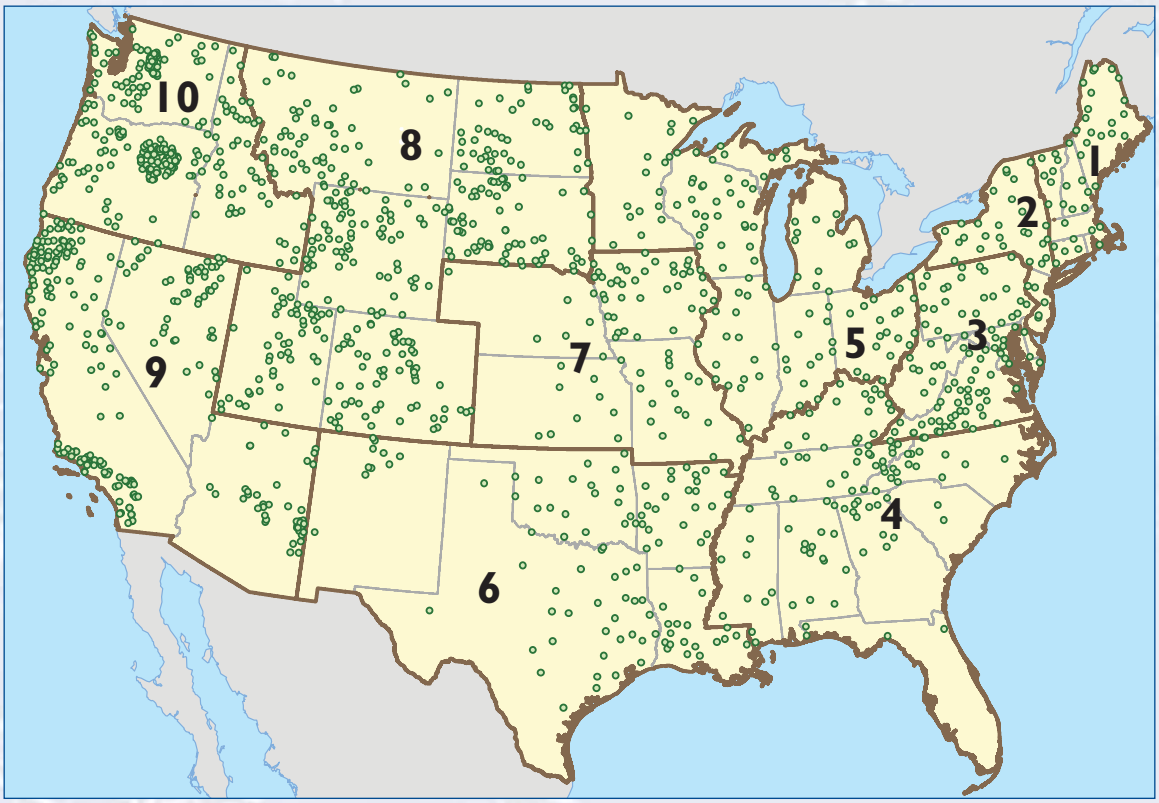


Figure 5. Wadeable Streams Assessment sampling sites (U.S. EPA/WSA).

The Wadeable Streams Assessment collected data at 1,392 wadeable, perennial stream locations, such as this one in Sawmill Creek, MA, in the Northern Appalachians ecoregion (Photo courtesy of Colin Hill, Tetra Tech, Inc.).

Key Findings of the Wadeable Streams Assessment

The Wadeable Streams Assessment found that 42% of U.S. stream miles are in poor condition compared to best-available reference sites in their ecological regions, 25% are in fair condition, and 28% are in good condition (Figure 6). The confidence level for these key findings of biological quality is + or -2.8%. Five percent of U.S. stream miles were not assessed.

Three major regions were outlined for this assessment: the Eastern Highlands, the Plains and Lowlands, and the West. Of these three groups, the West is in the best condition, with 45% of the length of wadeable, flowing waters in good condition. The Eastern Highlands region presents the most concerns, with only 18% of the length of wadeable streams and rivers in good condition and 52% in poor condition.

The study also found that the most widespread stressors observed across the country and in each of the three major regions are nitrogen, phosphorus, riparian disturbance, and streambed sediments. Increases in nutrients and streambed sediments have the highest impact on biological condition; streams scoring poor for these stressors are twice as likely to have poor biological condition as streams that score in the good range for the same stressors.

Future updates of this study will include work currently being conducted in Alaska, Hawaii, and Guam. The study will be repeated in future years to track national trends in stream condition. For more information on the assessment, go to http://www.epa.gov/owow/streamsurvey.

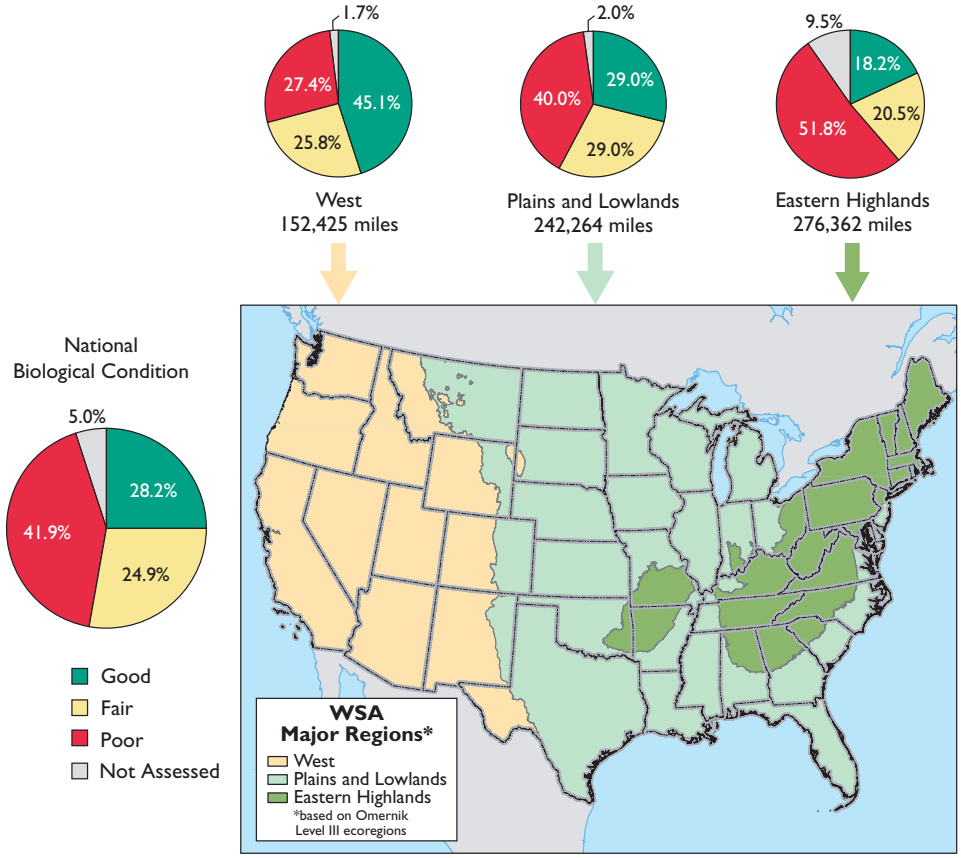


Figure 6. Biological condition of wadeable streams (U.S. EPA/WSA).

Assessing Lakes

EPA and the states are currently making preparations for a comprehensive assessment of the nation's lakes that will serve as a baseline of lake water quality against which future trends can be tracked. EPA has awarded National Lakes Assessment Planning Project grants to study which sampling designs, indicators, collection methods, and data-interpretation methods would best suit the many types and sizes of lakes and reservoirs in the United States. A national meeting was held in the spring of 2006 to share findings and to develop a consensus approach to a national assessment of lake water quality.

Through the institution of regular probability surveys of all waterbody types, EPA and its partners in the states and other federal agencies will be able to cost-effectively assess 100% of the water resources of the United States and track trends in water quality over time. This scientifically based data will assist in the evaluation of the effectiveness of pollution-control activities and will greatly improve our ability to manage the nation's water resources.

A total of 909 lakes, ponds, and reservoirs in the contiguous United States are included in the National Lakes Assessment Survey of the Nation's Lakes (Photo courtesy of Gene Alexander, National Resources Conservation Service).