

# The Quality of Our Nation's Water

This National Water Quality Inventory, prepared under Section 305(b) of the Clean Water Act, summarizes water quality reports submitted by all 50 states, the District of Columbia, and 5 territories; 4 interstate commissions; and 5 Indian tribes in 2000.

## How Do States and Other Jurisdictions Assess Water Quality?

Water quality assessment begins with water quality standards. States and other jurisdictions adopt water quality standards for their waters. EPA must then approve these standards before they become effective under the Clean Water Act.

Water quality standards have three elements: the designated uses assigned to waters (e.g., swimming, the protection and propagation of aquatic life, drinking); the criteria or thresholds that protect fish and humans from exposure to levels of pollution that may cause adverse effects; and the antidegradation policy, intended to prevent waters currently in degraded condition from further deteriorating, and minimizing deterioration of high quality waters.

After setting standards, states assess their waters to determine the degree to which these standards are being met. To do so, states may take biological, chemical, and physical measures of their waters; sample fish tissue and sediments; and evaluate land use data, predictive models, and surveys.

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## How Many of Our Waters Were Assessed for 2000?

This report does not describe the health of all waters of the United States because states have not yet achieved comprehensive assessment of all their waters. For this biennial report, states assessed 19% of the nation's total river and stream miles; 43% of its lake, pond, and reservoir acres; 36% of its estuarine square miles; and 92% of Great Lakes shoreline miles.

## What Is the Status of Our Assessed Waters?

States focused the majority of their assessment activities on rivers and streams; lakes, ponds, and reservoirs; estuaries; and Great Lakes shoreline. States reported that 61% of assessed river and stream miles, 54% of assessed lake acres, 49% of assessed estuarine square miles, and 22% of assessed Great Lakes shoreline miles fully support the water quality standards evaluated. In the remaining assessed waters, one or more designated uses are impaired.

States assessed very small amounts of ocean and marine resources, wetlands, and ground water. This is due in part to a lack of assessment tools for these resources and, in the case of wetlands, lack of water quality standards. EPA and states are working to improve characterization of these resources.

## What Do States Identify as the Leading Causes and Sources Affecting Impaired Waters?

For the subset of assessed waters identified as impaired, this report presents the leading pollutants and sources of pollution reported by states, territories, commissions, and tribes. Across all waterbody types, states and other jurisdictions reported that:

- Siltation, nutrients, bacteria, metals (primarily mercury), and oxygen-depleting substances are among the top causes of impairment.
- Pollution from urban and agricultural land that is transported by precipitation and runoff (called nonpoint source or NPS pollution) is the leading source of impairment.

It is important to understand the difficulties in identifying causes and, in particular, sources of pollution in impaired waters. For many waters, states and other jurisdictions classify the causes and sources as unknown. EPA and states are working to develop methodologies for both determining the causes and sources of impairment and describing the level of confidence in the classification.

## How Does Impaired Water Quality Impact Public Health and Aquatic Life?

Water pollution threatens public health both directly through the consumption of contaminated food or drinking water, and indirectly through skin exposure to contaminants present in recreational or bathing waters. Contaminants that threaten human health include toxic chemicals and waterborne disease-causing pathogens such as viruses, bacteria, and protozoans.

Some of the problems caused by toxic and pathogen contamination include fish, wildlife and shellfish consumption advisories, drinking water closures, and recreational (e.g., swimming) restrictions. Reporting on these impacts in the state Section 305(b) reports is often incomplete because of jurisdictional and technical monitoring concerns. EPA's National Listing of Fish and Wildlife Advisories (NLFWA) database listed 2,838 advisories in effect in 2000; mercury, polychlorinated biphenyls (PCBs), chlordane, dioxins, and dichlorodiphenyltrichloroethane (DDT) (with its byproducts) were responsible for 99% of all the fish consumption advisories in effect. Ten of 28 coastal states reported prohibited, restricted, or conditionally approved shellfish harvesting in 1,630 square miles of estuarine waters. Thirty-nine states, tribes, or territories submitted drinking water use data in

their reports, and reported that the majority of waterbodies assessed—86% of river and stream miles and 84% of lake and reservoir acres—are considered to be supporting their drinking water use. Thirteen states and tribes identified 233 sites where contact recreation was restricted at least once during the reporting cycle.

## What Do the States and Tribes Recommend to Improve Water Quality?

A considerable variety of challenges and recommendations were discussed in the 2000 reports. Many pressing problems seem to have root causes in resource constraints, lack of adequate monitoring data, or lack of coordination among multiple agencies responsible for the same issue areas.

The states and other governing entities recommended that Congress address financial/resource problems so that, at the minimum, basic and priority activities can be implemented. The reports also indicated the need for proper coordination and data integration among different programs to improve efficiency and fully use scarce resources. The states recommended flexibility in developing programs tailored to individual conditions and needs, especially for issues that can vary widely between regions, such as ground water and NPS pollution management. And finally, the importance of wider public involvement was a common theme, especially for dealing with complex problems like NPS pollution, where control options are difficult or expensive.



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