

# Introduction

*Untitled*  
Holly Heuer  
Grade 5  
Santa Ynez Valley Family School  
Los Olivos, California



**Watershed:** the land area that drains to a body of water such as a stream, lake, wetland, or estuary

**W**e call the earth the water planet because water covers 70 percent of its surface. In the United States, rivers, lakes, estuaries, and wetlands are among the Nation's most precious resources. Americans depend on clean water to drink, to irrigate their crops, and to run their industries. Water resources provide opportunities for recreation such as fishing and swimming, and wetlands even provide protection from floods. Rivers, lakes, estuaries, and wetlands also provide critical habitat for both aquatic and land-based wildlife. For example, estuaries serve as birthplace and nursery for most saltwater fish and shellfish.

The nation's water resources have immeasurable value. However, in monetary terms, clean water plays a staggering role in the nation's economy. Each year, nearly \$200 billion of food and fiber, \$60 billion of manufactured products, and over \$40 billion of tourism depend on clean water and healthy watersheds.

The nation has improved the quality of its water resources in recent decades, but it has not sufficiently protected and restored all waters. Today, approximately 40 percent of the nation's major watersheds have water quality and habitat-related problems. The sources of these problems are widespread and complex.

Our nation cannot solve the majority of these problems by further regulating discharges from factories and sewage treatment plants. Existing programs and regulations have greatly improved the nation's water—industries and municipalities have cleaned their pollutant discharges at great expense with technological solutions. These long-standing programs will continue to be a critical element of watershed management. Newer requirements that address other pollutant sources (e.g., stormwater runoff) will further improve conditions. However, the government does not regulate or control many ongoing activities that impact watersheds.



*Clean water is a critical component of food production.*

To address the water quality problems that remain, our nation has needed a more comprehensive approach—one that considers all threats to a watershed. The “watershed approach” addresses natural resource issues that cross jurisdictions and political boundaries. It integrates concerns about water quality and water quantity and coordinates insights from the natural and social sciences. A successful watershed approach includes the support, participation, and leadership of local stakeholders and land users. Their decisions and lifestyles profoundly impact the nation's waters. In recent years, governments, non-profit organizations, businesses, and citizens have used a watershed approach to refocus their efforts to protect and restore the nation's waters. These refocused efforts have brought widespread positive results.

This report considers challenges to watershed health, recent successes of the watershed approach, and obstacles that remain. It was developed by a federal interagency

team that worked with local, state, and tribal partners. The report's descriptions and recommendations represent the opinions of local watershed practitioners, combined with suggestions from studies and reports by academic evaluators and governments. These stakeholders presented their views in roundtable discussions held throughout the country in 1999 and 2000. These Regional Watershed Roundtables, building blocks to a National Watershed Forum in the summer of 2001, provided opportunities for dialogue about issues, an exchange of information, and collaboration on watershed protection and restoration projects. As of December 31, 2000, more than 1,000 people had participated in regional roundtable discussions at more than 20 locations.

The report will explore the advantages of a watershed approach in greater detail in the next section, “Why Watersheds?” The third section of the report, “How are Watersheds Impaired?” identifies major threats to the nation's watersheds. For example, it discusses how toxic chemicals, invasive species, runoff with excessive levels of nutrients and sediments, and habitat loss and modification harm watersheds. Most importantly, this third section describes how human activities generate these threats. Automobile use contributes to polluted runoff from roads and the deposition of airborne pollutants in watersheds. Environmentally insensitive housing developments and farming techniques can compromise wetlands and forests and increase sediment delivery to rivers. Demands for energy and minerals have blocked rivers with dams, polluted waters with mine tailings, and fouled air and water with pollutants released from coal-burning power plants. These examples suggest that watershed health will only improve significantly with changes to individual land use and lifestyles and the implementation of cleaner technologies.

The fourth section of this report, “How is the Watershed Approach Working?” discusses local, state, tribal, and federal efforts to address the threats identified in the previous section. This section highlights the successes and shortcomings of these efforts. The watershed approach



*Power generation and many other industries depend on large volumes of useable water.*

has addressed many threats to watersheds, but the nation has not fully committed to its use. The fifth section, “What Can be Done to Improve Progress?” recommends refinements to the implementation of the watershed approach. Table 1 summarizes these recommendations, the most important feature of this report. Both the fourth and fifth sections reflect input from local watershed practitioners, academic researchers, and local, state, tribal, and federal partners. Their input can guide efforts to improve the watershed management process.

The discussion in the fourth and fifth sections of this document is organized by seven key themes of the watershed approach. These themes—education and awareness; partnerships and coordination; monitoring and research; planning and prioritization; funding and technical assistance; implementation; and evaluation—provide a useful framework for considering watershed management. A glossary and links to relevant websites at the end of the document should help readers understand and use the report.

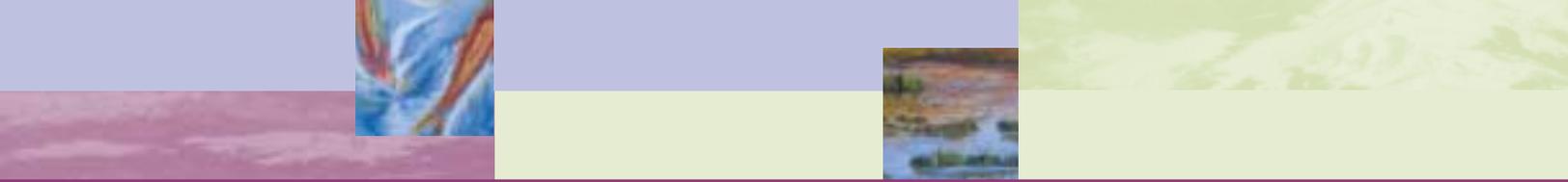
Watershed protection and restoration efforts will take time. Population growth, organizational inertia, limited financial resources, gaps in knowledge, and natural

events impede effective and lasting solutions. However, this document can move watershed efforts in promising directions—it identifies successes that watershed efforts should emulate and obstacles that they must overcome. As watershed practitioners develop detailed plans of action to address weaknesses in the nation’s watershed management, the recommendations in this report can influence their work. Local citizens can explore how they can provide better leadership and support for watershed management efforts. Governments can explore how they can better coordinate and enhance their technical and financial support of local watershed efforts.

The federal government will need to continue to advance watershed management. For example, federal agencies’ expertise and resources will improve watershed monitoring practices across the country. Federal agencies will also facilitate and fund many state and local watershed-related activities. Effective federal actions will be a critical ingredient for successful watershed protection and restoration. Working together, citizens, businesses, watershed organizations, and government agencies can address their shared responsibility for protecting and restoring our nation’s waters.

*Future generations will enjoy the benefits of healthy watersheds.*





**TABLE 1: RECOMMENDATIONS FROM WATERSHED PRACTITIONERS**

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**Education and Awareness**

- Ensure that key groups receive environmental education, especially local decision-makers
- Use modern technology, multi-media campaigns, and person-to-person approaches to enhance education and awareness programs

**Partnerships and Coordination**

- Continue to develop broad partnerships for watershed protection and restoration
- Foster greater coordination across government agencies by implementing the Unified Federal Policy on Watershed Management
- Continue supporting regional and local watershed partnerships with Federal Coordination Teams (also known as Regional Watershed Coordination Teams)
- Improve the delivery of information and support to local watershed efforts

**Monitoring and Research**

- Increase coordination of existing and new watershed monitoring programs
- Ensure data consistency amongst all monitoring groups
- Incorporate new indicators, such as indices of biological integrity, into watershed monitoring programs
- Provide meaningful and timely watershed information to decision-makers and the public
- Expand research in watershed management, especially efforts that evaluate environmental outcomes and improve predictive models

**Planning and Prioritization**

- Encourage consideration of watershed health in local planning and decision-making
- Refine and coordinate national watershed assessments by integrating new and enhanced monitoring and assessment data and by prioritizing actions and assistance programs

**Funding and Technical Assistance**

- Increase financial and technical assistance from all sources to watershed protection and restoration efforts
- Enhance program flexibility by expanding funding eligibilities, relaxing grant-making requirements, and addressing priority needs
- Develop education campaigns that inform watershed groups about financial and technical assistance tools

**Implementation**

- Pursue both watershed protection and restoration activities
- Ensure that watershed plans lead to action
- Follow up projects with appropriate monitoring, maintenance, and evaluation activities
- Provide adequate enforcement of watershed laws and regulations

**Evaluation**

- Establish science-based indicators for watershed programs and projects
- Incorporate outcome-oriented measures into assistance programs
- Develop common federal indicators for assessing watershed health and common measures for tracking and reporting performance
- Track results at local, regional, and national watershed scales