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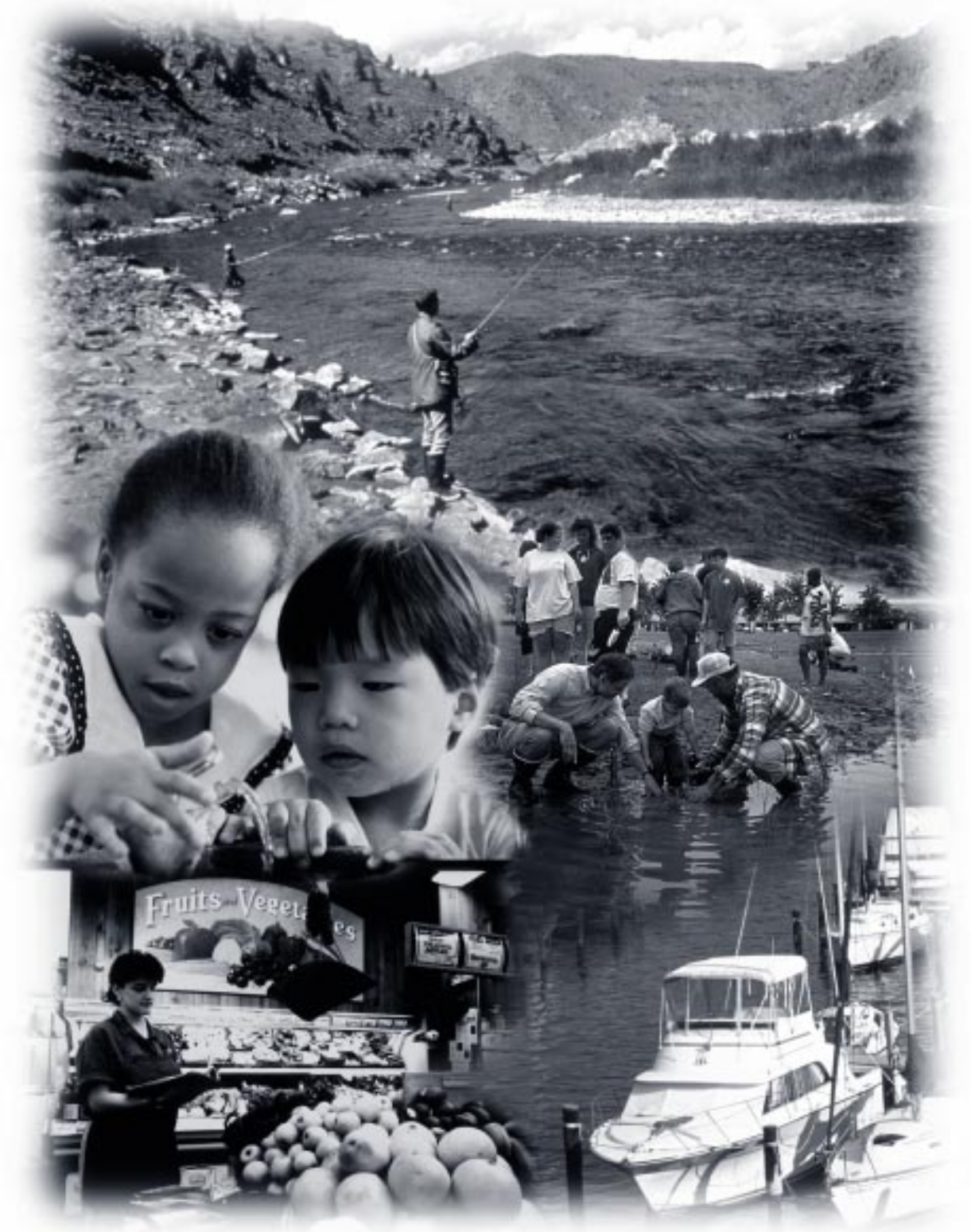
Liquid Assets 2000:

America's Water Resources at a Turning Point



In Memory...

John H. Chafee
1922 - 1999

This report is dedicated to the memory of John H. Chafee, who served as state legislator, Governor of Rhode Island, Secretary of the Navy, and U.S. Senator. During his long and distinguished Senatorial career, Senator Chafee was a champion of the Clean Water Act and the Safe Drinking Water Act. His energy, commitment, courage, and statesmanship continue to inspire all Americans.

"We need to bring alive the necessity for clean water so all Americans act as stewards of their water resources; whether it is Narragansett Bay or just the local puddle, every citizen must do his part. For safe, clean, abundant water—in our homes, rivers, lakes, and streams—is one of our planet's greatest treasures."

– Senator John H. Chafee, introducing the Estuary Habitat Restoration Partnership Act

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Executive Summary

Each summer millions of Americans head to the water—a lake, an oceanfront, or their favorite river—for a few days of relaxation and recreation. Billions of dollars will be spent this summer on food, lodging, and fuel, as well as special equipment, licenses, and services, so people can enjoy themselves on and around the water. But throughout the country, our economy and our summertime traditions are affected by closed beaches, fewer fish to catch, and other casualties of dirty water.

We have made tremendous progress cleaning up America's waters over the past 30 years. The nation's significant investment to upgrade sewage treatment plants and minimize industrial discharges has removed billions of pounds of pollutants from our waterways and doubled the number of waters safe for fishing and swimming.

Despite this resounding success, we still face significant challenges. An overwhelming majority of Americans—218 million—live within 10 miles of a polluted lake, river, stream, or coastal area. States have identified almost 300,000 miles of rivers and streams and more than 5 million acres of lakes that do not meet state water quality goals. Many of these waters are not considered safe for swimming and are unable to support healthy fish or other aquatic life.

The U.S. Economy Depends on Clean Water

- A third of all Americans visit coastal areas each year, making a total of 910 million trips while spending about $44 billion.
- Water used for irrigating crops and raising livestock helps American farmers produce and sell $197 billion worth of food and fiber. Farmers understand the importance of water, especially in the drought conditions many are facing this year. Conversely, farmers in North Carolina were confronted with severe Hurricane Floyd floods that overran manure lagoons on hundreds of North Carolina hog farms.
- The commercial fishing and shellfishing industries need clean wetlands and coastal waters to stay in business. Every year, the Great Lakes, Gulf of Mexico, and coastal areas produce more than 10 billion pounds of fish and shellfish.
- A *Money* magazine survey found that clean water and clean air are two of the most important factors Americans consider in choosing a place to live.
- Manufacturers use about nine trillion gallons of fresh water every year. The soft drink manufacturing industry alone uses more than 12 billion gallons of water annually to produce products valued at almost $58 billion.

The Costs of Dirty Water

Our economy depends on clean water; we all pay when it is polluted. Contamination of drinking water sources means higher health risks and increased treatment costs. Closed beaches and contaminated rivers mean lost revenue for local businesses that serve tourists, anglers, and recreationists. Swimmers at polluted beaches and lakes face possible threats from viruses and bacteria.

Each year Americans pay for dirty water:

- In 1998 about one-third of the 1,062 beaches reporting to the U.S. Environmental Protection Agency (EPA) had at least one health advisory or closing.
- In 1998 2,506 fish consumption advisories or bans were issued in areas where fish were too contaminated to eat.
- Seventeen states reported 37 recreational water outbreaks caused by microorganisms in the latest (1995-1996) available data from the Centers for Disease Control.
- Currently EPA estimates that at least a half-million cases of illness annually can be attributed to microbial contamination in drinking water.

Achieving Cleaner Waters Across America

Over the next decade, we must continue efforts to reduce pollution from industry, sewage treatment plants, and polluted runoff. The goal of clean, safe water will require state and locally led efforts to identify and clean up the lakes, rivers, and streams that are still polluted. Using flexible, common-sense guidelines backed by tough state water quality standards and driven by partnerships between government and private sector organizations at every level, this generation of Americans can be the first in more than a century to enjoy fishable, swimmable, and drinkable water in every community.

Liquid Assets 2000: America's Water Resources at a Turning Point provides a snapshot of the economic value of clean water, the problems we face in the new millennium, and the actions we must take to protect and restore the nation's water resources. This report explores the current condition of the nation's water resources and demonstrates the link between clean water and a strong economy by focusing on specific businesses and activities that rely on clean water.

There are a myriad of exciting efforts under way to help improve water quality in communities throughout the country. America's water resources are at a turning point. The choice of clean water for all Americans is ours.

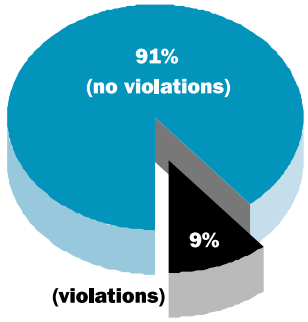
"Every child deserves to grow up with water that is pure to drink, lakes that are safe for swimming, rivers that are teeming with fish. We have to act now to combat pollution challenges with new protections to give all our children the gift of clean, safe water in the 21st century."

— President William J. Clinton

Good News, Bad News

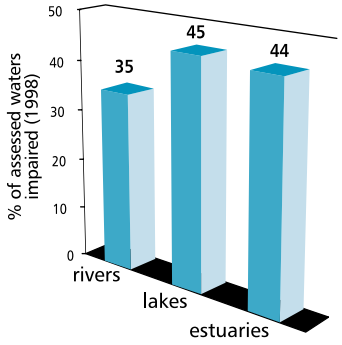
The Current Condition of Our Nation's Water Resources

Our drinking water supply is one of the safest in the world, but...



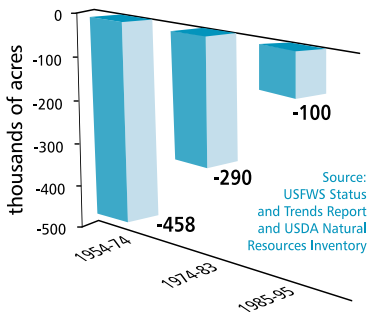
...one out of every ten people is served by a community water system reporting a health standard violation (1999).

Our rivers, lakes, and coastal waters are cleaner today than 25 years ago, but...



...many assessed waters are still too polluted for safe fishing or swimming.

Wetland losses have been significantly reduced, but...

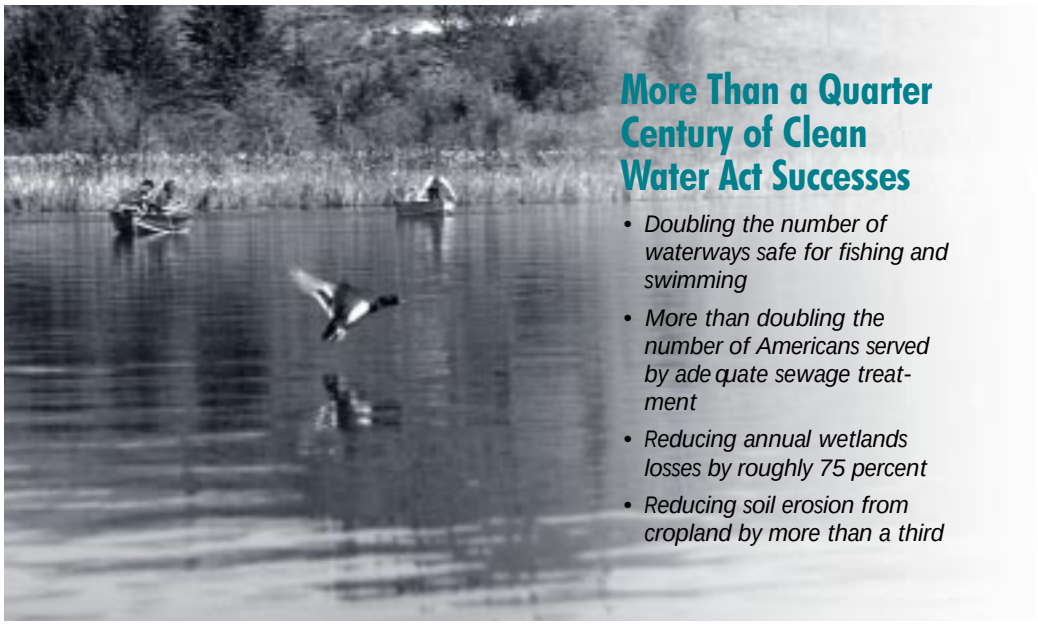


...less than half of the wetlands in the contiguous states remain, and annual losses continue to exceed gains.

On June 22, 1969, a stray spark ignited oil and debris on Ohio's Cuyahoga River, engulfing the river in flames. The burning of the Cuyahoga came to symbolize for this country a century of industrialization with little or no regard for environmental consequences. It also was one of the seminal events that gave rise to the environmental movement, the creation of EPA, and the passage of a series of laws designed to safeguard our environment, including the enactment of the Clean Water Act in 1972.

In the 30 years since the Cuyahoga blaze, citizens, industries, states, and local governments, along with the federal government, have banded together to improve the quality of the nation's waters. Over a trillion dollars, much of it authorized under the Clean Water Act, has been spent to upgrade and expand wastewater treatment facilities. This commitment to clean water continues as industrial facilities and state and local governments make investments to improve treatment and reduce water quality problems. EPA and the states have written and enforced more than 70,000 permits limiting pollutants. These efforts to control "point source" discharges from municipalities, industry, and sewage plants have yielded tremendous results. The number of Americans served by adequate sewage treatment has more than doubled. Toxic releases from industry continue to decline. Due to this national commitment, the Cuyahoga and other once severely polluted waters are now thriving centers of healthy communities.

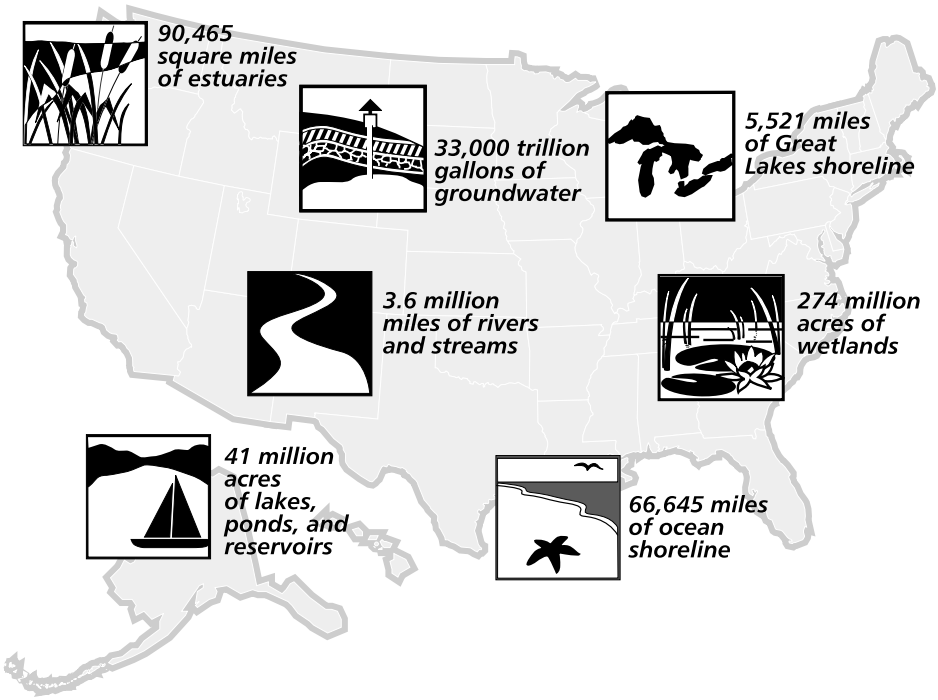
Despite tremendous progress, we still have much work to do. Nearly 40 percent of the nation's assessed waters are not meeting the standards states have set for them. Many of these problems will require expanded treatment of sewage or industrial discharges. But the majority of pollution problems are caused by runoff from city streets, rural areas, and other diffuse sources. As you will see in the pages that follow, polluted runoff poses a serious threat to the nation's liquid assets, including highly valued drinking water sources, beaches, recreational fisheries, coastal seafood nurseries, and popular vacation areas.



More Than a Quarter Century of Clean Water Act Successes

- *Doubling the number of waterways safe for fishing and swimming*
- *More than doubling the number of Americans served by adequate sewage treatment*
- *Reducing annual wetlands losses by roughly 75 percent*
- *Reducing soil erosion from cropland by more than a third*

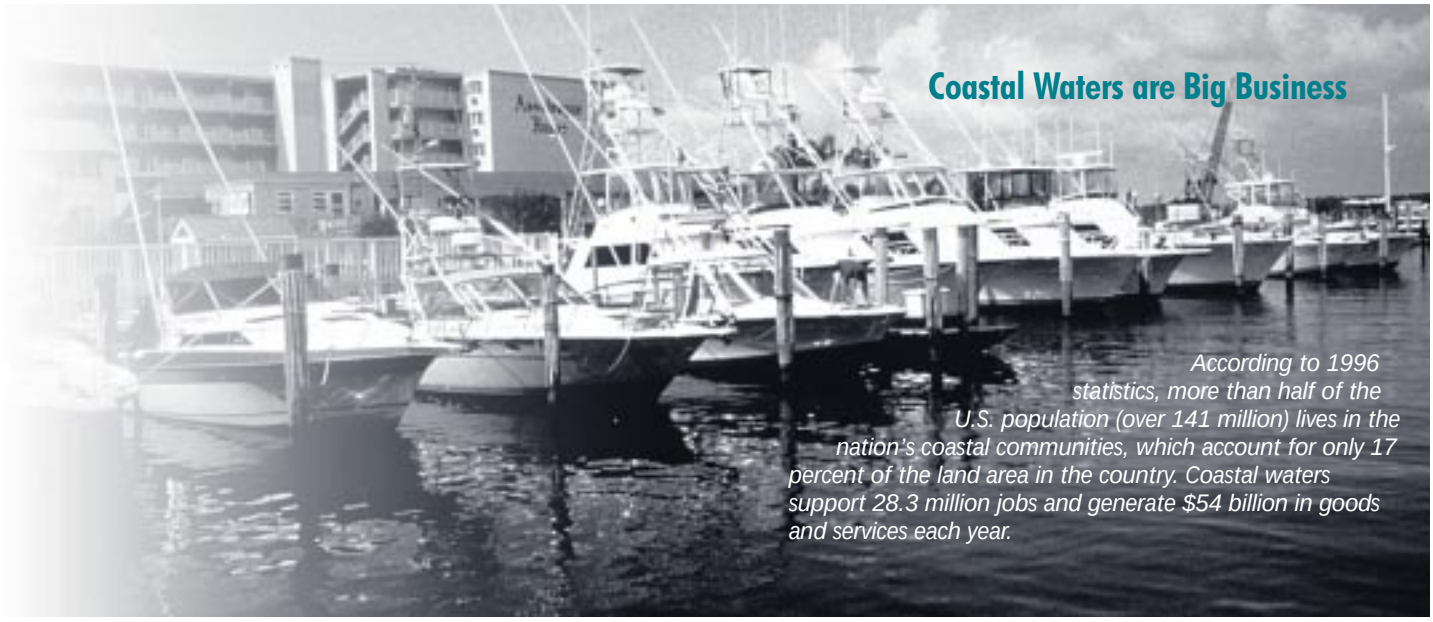
America's Water Resources: A Large and Diverse Portfolio



Source: National Water Quality Inventory, 1998

"For my entire career, I have believed very deeply that a strong economy and a clean environment go hand in hand."

—Vice President Al Gore

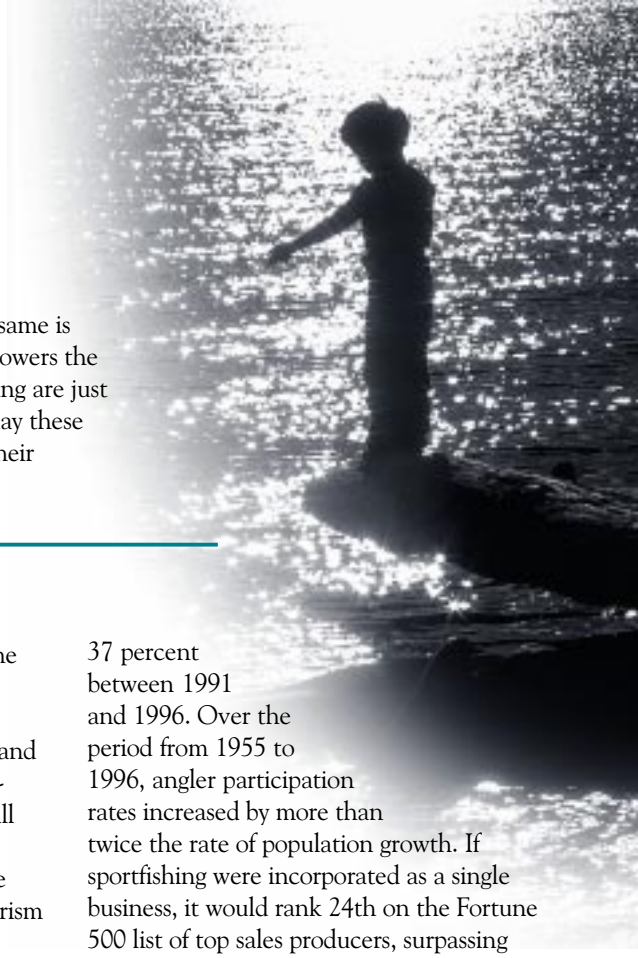


Coastal Waters are Big Business

According to 1996 statistics, more than half of the U.S. population (over 141 million) lives in the nation's coastal communities, which account for only 17 percent of the land area in the country. Coastal waters support 28.3 million jobs and generate $54 billion in goods and services each year.

The Business of Clean Water:

How Water Quality Affects Major Economic Sectors



The impact of clean water on the recreation and tourism industry is profound. But the same is true for many other sectors of our economy. In many ways clean water is the fuel that powers the nation's economic engine. Commercial fishing, agriculture, real estate, and manufacturing are just a few of the sectors that rely on clean water to operate and ensure productivity. Every day these and other sectors of the U.S. economy rely on clean water to grow, process, or deliver their products and services.

Recreation and Tourism Bring Jobs and Profits

Beautiful beaches, white-water rivers, and calm, cool lakes contribute to a flourishing recreation and tourism industry in this country. Water has a powerful attraction for people, which is translating into jobs and profits for our economy. The travel, tourism, and recreation industries supported jobs for more than 6.8 million people and generated annual sales in 1996 of more than $450 billion. Water-related recreation and tourism make for a large part of those jobs and revenue. Almost all Americans participate in water-based recreation and tourism and spend about 10 percent of their income on recreational activities.

PROFILE

Fishing Revenues Return to Lake Winnebago

Lake Winnebago in Fond Du Lac County, Wisconsin, is the host of many national fishing tournaments. When residents got tired of seeing summer algae blooms (sometimes so bad that they covered the entire lake, creating a foul smell) they formed the Lake Winnebago East Priority Watershed Project to save their precious lake and fishing tourism revenues. The project worked with local farmers to install manure storage facilities and fence cows from area streams. The Wisconsin Department of Trade and Consumer Protection and the Fond du Lac County Land Conservation Department joined to install a sediment control basin and grassed waterway. These efforts will keep an estimated 320 tons of sediment out of the water each year, preventing excess nutrients from polluting the lake.

Sales of kayaks and canoes in 1996 alone exceeded $99 million.

When people decide to plan vacations and travel for pleasure, there is a strong tendency to head to the water. A third of all Americans visit coastal areas each year, making a total of 910 million trips while spending about $44 billion. Coastal tourism supports businesses like hotels, resorts, restaurants, outdoor outfitters, chartered fishing services, cruiselines, and real estate and travel agencies. For many Americans, a day at the beach provides recreation, relaxation, and a chance to renew the spirit.

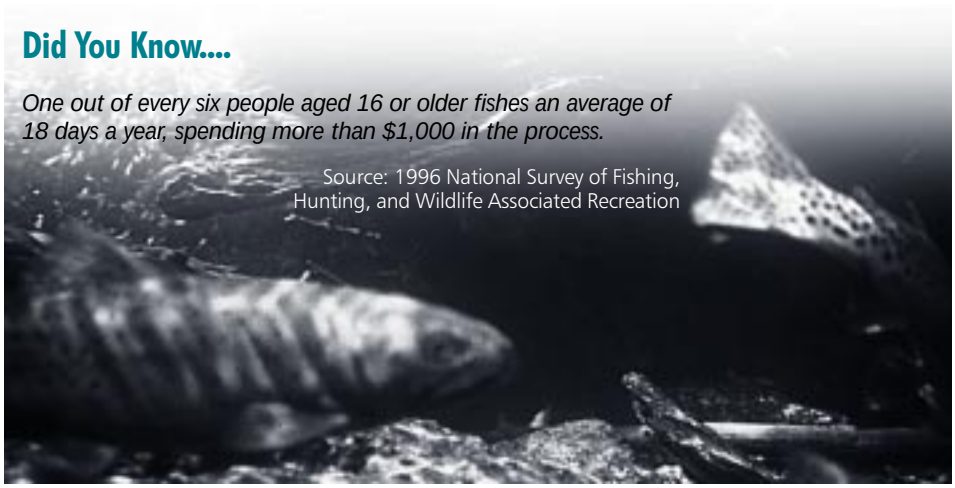
A significant portion of recreational spending is tied to fish and wildlife, both of which require high quality water and habitat (e.g., wetlands, vegetated stream banks, and silt-free streambeds) for survival. Thirty-five million American anglers, aged 16 or older, spent $38 billion in pursuit of their sport in 1996. Fishing expenditures increased by 37 percent between 1991 and 1996. Over the period from 1955 to 1996, angler participation rates increased by more than twice the rate of population growth. If sportfishing were incorporated as a single business, it would rank 24th on the Fortune 500 list of top sales producers, surpassing such giants as General Motors, Exxon, Mobil, and AT&T.

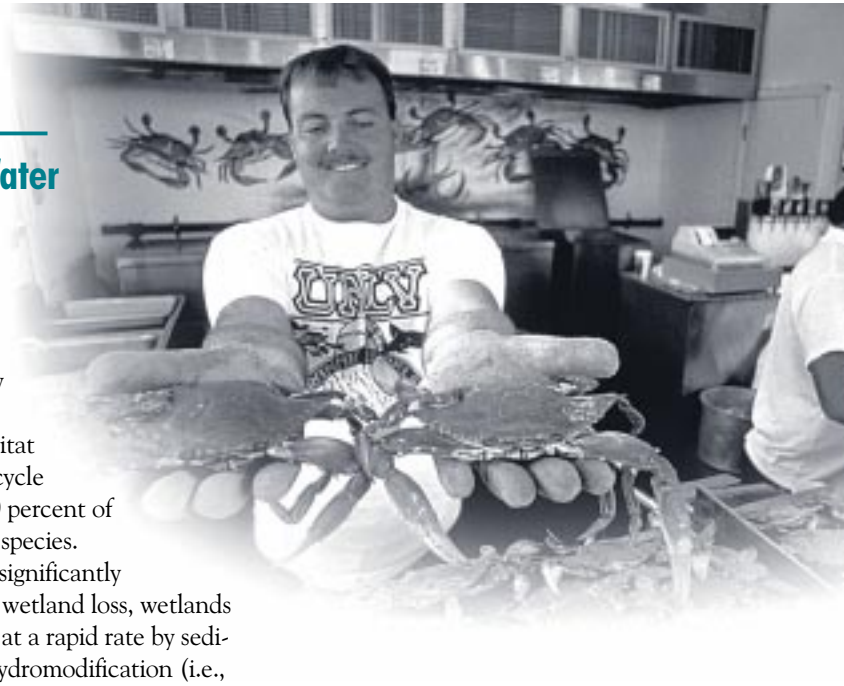
Big and small game and migratory birds that depend on clean water also generate economic activity for the recreation and tourism industry. In 1996 nearly 14 million people spent about $20 billion hunting game and migratory waterfowl. They made 223 million trips and spent $5.2 billion on trip-related expenses and $11 billion on equipment. Even more Americans watch and photograph wildlife. More than 62 million people participate in this relaxing—and sometimes exciting—pastime every year, spending more than $29 billion.

Did You Know....

One out of every six people aged 16 or older fishes an average of 18 days a year, spending more than $1,000 in the process.

Source: 1996 National Survey of Fishing, Hunting, and Wildlife Associated Recreation





Commercial Fishery Yields Depend on Clean Water

Baltimore journalist H.L. Mencken once described the Chesapeake Bay as a giant protein factory because of its incredibly productive fish and shellfish habitat. Every year our nation's protein factories—the Great Lakes, the Gulf of Mexico, and other coastal areas—produce more than 10 billion pounds of fish and shellfish. The seafood industry in California alone generates sales exceeding $800 million annually, according to the California Seafood Council. But profitable fisheries and a prosperous economy have come at a cost to fish populations in coastal waters, a situation only worsened by polluted waters.

Data from the National Marine Fisheries Service show declining populations for many species, including salmon, halibut, perch, cod, haddock, and flounder. These declines can be linked to a number of factors, including overfishing and habitat loss. Environmental degradation is a key factor. Wetlands provide critical habitat during various life cycle phases for about 70 percent of all commercial fish species. Although we have significantly reduced the rate of wetland loss, wetlands are being degraded at a rapid rate by sediments, nutrients, hydromodification (i.e., building of dams and channelizing streams), invasive species, and other causes. In the Clean Water Action Plan, the President set a goal of reversing the historic pattern of wetland losses in the United States and achieving a net increase of 100,000 acres of wetlands each year, beginning in 2005.

Clean Water Feeds America

Water is an absolute necessity for ensuring agricultural productivity. American farmers produce food and fiber products worth $197 billion a year. The sale of livestock and poultry makes up $98 billion of the total, with the cattle industry alone accounting for $40 billion of all meat sales. Water, in combination with rich agricultural lands and technological advancements, helps make all this productivity possible.

The agricultural industry uses 63 percent of all groundwater withdrawals, mostly for irrigation. An estimated 55 million acres were irrigated in 1997.

Profile

Using Partnerships to Solve Water Quality Problems in Farm Country

Ten years ago, Iowa's Bigalk Creek was not much more than a watering trough for cattle. The historical rainbow trout populations were virtually wiped out due to sedimentation and high bacteria levels. To reduce erosion in the watershed, the Iowa Department of Agriculture and Land Stewardship and the U.S. Natural Resources Conservation Service undertook an important water quality project. They fenced off an important section of the stream for trout reproduction and installed nose pumps to provide water to cattle while keeping them away from the stream bank. These actions have kept an estimated 12,285 tons of soil out of Bigalk Creek, reduced livestock manure loadings by 50 percent, and raised awareness regarding pesticide and fertilizer impacts in the watershed. Bigalk Creek is now one of only three streams in Iowa with documented reproduction of rainbow trout.

Source: Howard Soil and Water Conservation District, 2000

Real Estate Values Soar at the Water's Edge

PROFILE

Lake Residents Pay for Clean Water

West Boggs Lake in southern Illinois is owned and maintained by the Daviess and Martin Joint County Parks and Recreation Department. Upon observing poor water quality and a slump in new home sales, the department enacted a special-use permit fee for water-use activities that degrade water quality. In 1999 the Department collected more than $450,000 in user fees, which were deposited into a special park fund to improve lake water quality. Since the program's inception, West Boggs Lake's water quality and recreational fishing have dramatically improved. Lakeside residents have also seen an increase in real estate values and sales.

When it comes to real estate, a waterfront view is a prime selling feature—as long as the water is clean. Ocean, lake, and riverfront properties often sell or rent for several times the value of similar properties located inland.

Community and business leaders also understand the potential value of waterfront locations. Today waterfronts are often a focal point for urban renewal in many cities. Before passage of the 1972 Clean Water Act, many of our rivers and waterfronts were so polluted that no one wanted to go near them, much less invest in new development. But times are changing. Twenty-five years ago, the Connecticut River was considered a polluted nuisance. Today, this American Heritage River has become a source of beauty, recreation and economic revitalization. Along with the Clean Water Act, efforts by Riverfront Recapture, Inc. and state and local groups have paid off. In the shadow of the downtown Hartford skyline, people are fishing, rowing and water skiing. Outdoor sporting events like top-level bass tournaments are doing more than showcasing the river, they are generating millions for the local economy. With the emergence of riverfront parks, land near the river is becoming highly desirable again. Riverfront Plaza will soon be home to a convention center, hotel, retail and entertainment facilities, housing, and an aquarium or discovery center. With nearly a billion dollars worth of development planned for sites along the river, the Connecticut is reclaiming its role as the region's economic lifeline.

Manufacturing: Water Fuels the Nation's Industries

The size and nature of American industries vary widely, and yet nearly all of them share a common need—a reliable source of water to support operations. In 1995 the U.S. Geological Survey estimated that manufacturing companies used more than nine trillion gallons of fresh water per year, approximately four percent more than they had used in 1990. In many cases water is needed primarily for production purposes, such as in the manufacturing of computer chips or steel, and is treated and returned to a surface water or groundwater source. Proper treatment of this returned water is a vital component of the nation's water program under the Clean Water Act.

"Water has a psychological value.... People derive measurable pleasure from recreational activities like boating and fishing and find comfort in knowing that the water they drink is of the highest quality."

—The National Water Research Institute

Today's Challenges

Clean water is important to our health and our livelihood. Today's biggest threat to water quality is polluted runoff. During rainstorms or snowmelt, billions of pounds of dirt, manure, fertilizer, farm and lawn chemicals, oils and grease from city streets and parking lots, nutrient and toxic contaminants from the atmosphere, contaminants from tire and brake pad wear, contaminants from abandoned mines, and other pollutants are carried into the nation's waters. Runoff from sprawling developments, hydromodification, and some farming and forestry operations that lack conservation measures continue to contribute significantly to degraded conditions nationwide. According to the 1998 National Water Quality Inventory, states report that polluted runoff is the leading cause of water quality problems nationwide and pollution from agriculture, including cropland erosion, animal waste (e.g., chicken, hog, and beef farms), and fertilizers, is the leading cause of polluted runoff.

Some of today's other water quality threats include combined sewer overflows, sanitary sewer overflows, and stormwater system discharges. These discharges contribute to serious water quality problems, including beach closings, shellfish bed closures, and threats to groundwater and drinking water supplies.

Combined sewer overflows occur in older cities with "combined sewer systems," where the sewer system collects both storm water runoff and sanitary sewage in the same pipe. During rainfall or snowmelt, volume in the combined sewer system can exceed capacity, resulting in direct discharges to streams, rivers, lakes or estuaries. These overflows contain not only storm water, but untreated human and industrial waste, toxic materials and debris. They occur during wet weather in approximately 900 cities that have combined sewer systems.

Sanitary sewer overflows, meanwhile, are discharges of raw sewage from separate sanitary sewers, which are not designed to carry storm water runoff. Sanitary sewer overflows occur as a result of leaky, damaged, or blocked sewer pipes or when the volume of sewage flow exceeds the capacity of the sewer pipes or treatment plant, backing up into basements, onto city streets, and into our waters. Storm water runoff from urbanized areas, industrial sites, and construction sites is another major source of pollution.

Although some programs are in place to control sewer overflows and stormwater runoff, EPA is continuing to explore ways to control the environmental and public health threats posed by these "wet weather" sources of pollution. These and other emerging threats require continued vigilance as our infrastructure ages and populations increase.

While this report focuses primarily on water pollution, we face other problems. Air pollution, global warming and other challenges are important issues that we need to address and which contribute to water pollution as well.

PROFILE

Coastal Waters at Risk

Nutrients from livestock manure, sewage, and fertilizer runoff cause algae blooms in coastal waters. When the algae die and decompose, they use up the oxygen needed by fish and other aquatic organisms. Low oxygen conditions annually affect a large area in the Gulf of Mexico, which last year reached the size of New Jersey. Similar "hypoxia" afflicts estuarine waters in many parts of the country. Impacts include reduced fish and shellfish reproduction, economic losses, and human health effects. Controlling nutrients requires a national, coordinated effort.

Source: Clean Coastal Waters, National Research Council

Americans Pay for Dirty Water

Although our lakes, rivers, estuaries, and wetlands are much cleaner than they were in 1970, headlines like these are all too common.

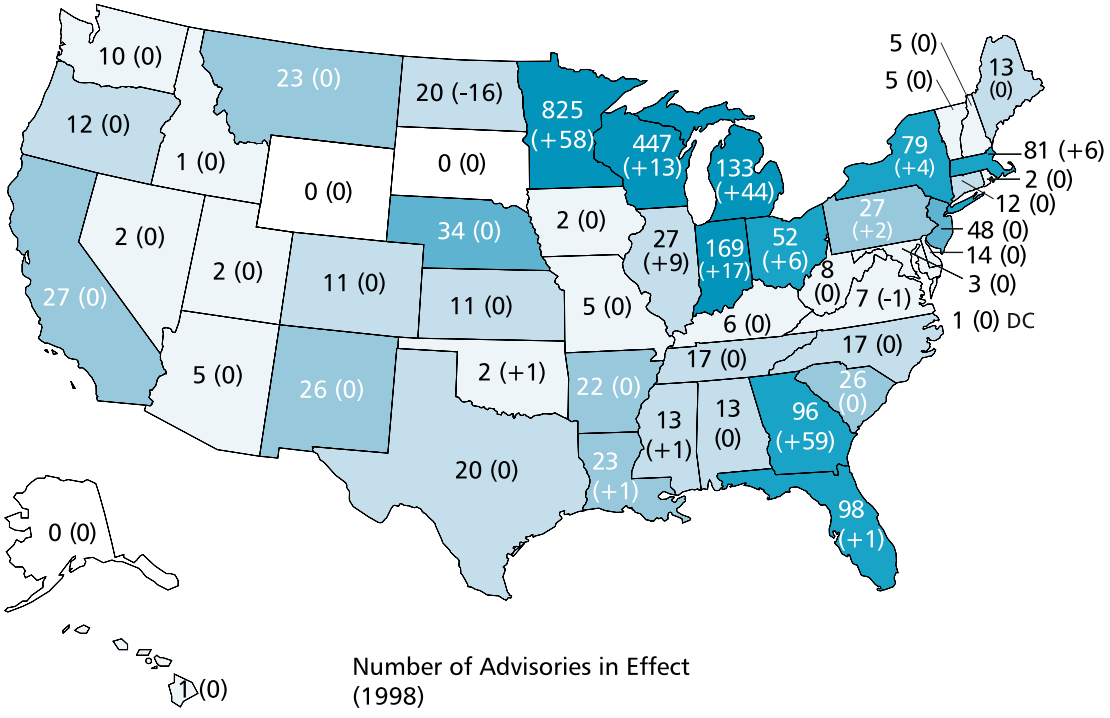
The cost of polluted water is significant. Americans pay for dirty water every year:

- A 1993 outbreak of *Cryptosporidium*, a disease-causing microbe, in Milwaukee's drinking water sickened more than 400,000 people and killed more than 50.
- The toxic microbe *Pfiesteria piscicida* has killed millions of fish in North Carolina since 1995 and tens of thousands of fish in Maryland in 1997. Losses to the U.S. seafood and tourism industries from *Pfiesteria* are estimated at $1 billion. Maryland alone suffered $43 million in canning and fishing losses in a single year. North Carolina is now spending millions of dollars for watershed restoration in an effort to control potential outbreaks in the future.
- Harmful algae blooms, which flourish in nutrient-rich waters, have devastated the scallop industry on Long Island, killed millions of fish in Texas coastal bays, and sickened many who have eaten contaminated shellfish or visited stricken seashores.
- A 1995 study by the Santa Monica Bay Restoration Project of 15,000 bathers at three Santa Monica Bay beaches found that approximately 1 in every 25 beachgoers who swam near a flowing storm drain contracted gastroentestinal illness or cold- and flu-like symptoms.
- Mining in the western United States has contaminated stream reaches in the headwaters of more than 40 percent of the watersheds in the West. EPA is spending $30,000 per day to treat contaminated mine drainage at the Summitville Mine in Colorado, which will cost an estimated $170 million to clean up. Remediation of the half-million abandoned mines in 32 states may cost up to $35 billion or more.

Contamination from coal-fired power plants, motor vehicles, or other air pollution can also cause signifcant water quality problems. Lakes in the Midwest and the Northeast are contaminated by mercury from distant utilities' combustion sources. Streams in Appalachia run red with dissolved iron from acid mine drainage. Salmon populations in the Northwest are being depleted by sediment runoff and dam impacts.

With clean water, an ounce of prevention is worth much more than a pound of cure. Every day we must make choices to protect groundwater, control polluted runoff, improve sewage treatment, and restore the nation's watersheds, or the costs will continue to mount.

Total Number of Fish Advisories in Effect in Each State in 1998 (change from 1997)

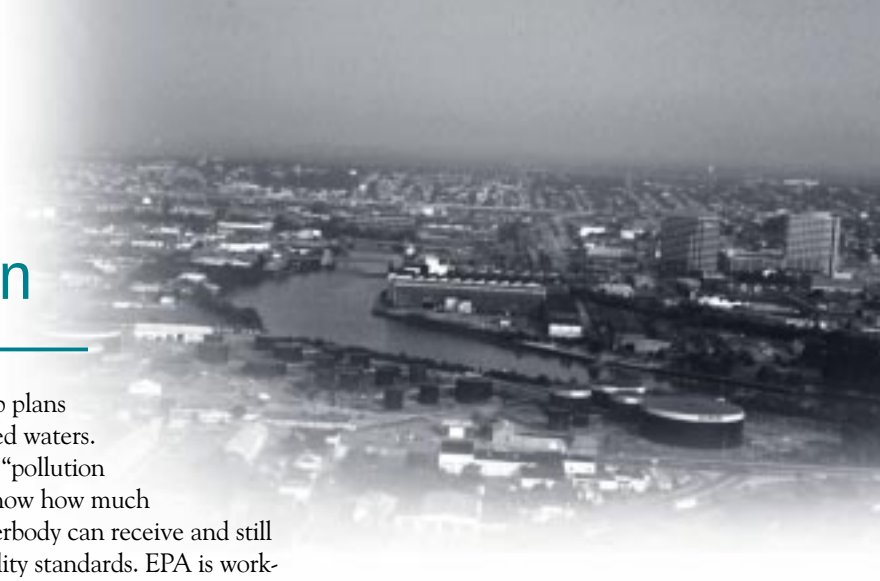


Number of Advisories in Effect (1998)

- 0
- 1-10
- 11-20
- 21-30
- 31-50
- 51-100
- >100

Source: US EPA, 1999

Federal Tools in Action



The Clean Water Act provides many tools to gain clean water. One tool—the Total Maximum Daily Load (TMDL) program—has become increasingly important over the last decade. Under the TMDL program, states, territories, and authorized tribes identify their polluted waters, submit a list of these waters to EPA, and work with citizens to set priorities for restoring them to health. State agencies then work with landowners, private companies, and other local stakeholders to develop cleanup plans for these polluted waters. These plans set "pollution budgets" that show how much pollution a waterbody can receive and still meet water quality standards. EPA is working to strengthen existing cleanup efforts by promoting more focused, collaborative efforts at the state, tribal, and local level to identify and clean up polluted waterbodies.

Clean Water Act Programs at Work

- *The **Water Quality Standards Program** sets overall goals, criteria, and limits for individual waterbodies and drives the development of water-quality-based discharge permits.*
- *The **Total Maximum Daily Load (TMDL) Program** requires states, territories and authorized tribes to identify their polluted waters and submit prioritized lists of these waters to EPA, and to develop TMDLs for these waters to help them achieve water quality standards.*
- ***Effluent Guidelines Program** sets national limits on the amounts of pollutants in wastewater that can be discharged into U.S. waters and publicly-owned treatment works from industrial and other facilities.*
- *The **National Pollutant Discharge Elimination System Program** issues permits based on effluent guidelines for individual dischargers.*
- *The **Stormwater Program** requires cities, industrial facilities, and other sources of pollution to institute proper management practices to minimize runoff from urban areas.*
- *The **State Revolving Loan Program** provides low-cost financing for a range of water quality and infrastructure projects.*
- *The **Wetlands Protection Program** establishes a permit program jointly administered by the U.S. Army Corps of Engineers and EPA to regulate discharges of dredged or fill materials into waters, including wetlands, of the United States.*
- *The **Nonpoint source Management Program** provides funding for broad state and tribal management programs to address polluted runoff from agriculture, urban development and forestry, and helps to restore streams, estuaries, lakes and wetlands.*
- *The **National Estuary Program** identifies, restores and protects nationally significant estuaries of the United States using partnerships. There are 28 estuaries in the program.*

"It is critical that we, as a nation, rededicate ourselves to attaining the Clean Water Act goals that have inspired us for the past 25 years. The TMDL regulations we have proposed draw on the core authorities of the Clean Water Act and refine and strengthen the existing program for identifying and restoring polluted waters. They provide a map that will support us in our effort to fulfill the original promise of the Clean Water Act."

—Carol Browner, EPA Administrator

The Clean Water Action Plan

In 1998, President Clinton and Vice President Gore released the Clean Water Action Plan (www.cleanwater.gov), a comprehensive strategy designed to help protect and restore the nation's water resources using a watershed framework. The plan's 111 key actions focus on achieving cleaner water by strengthening public health protection, targeting high-priority areas, and providing communities with new resources to control polluted runoff and enhance natural resource stewardship. More than one-third of the 111 actions, including new curbs on urban runoff, unified watershed assessments, and a beach action plan, are complete.

Under the Action Plan, many states, tribes, and local organizations are working on watershed restoration action strategies based on new assessments or existing watershed, ecosystem, conservation, or other integrated plans. Work has begun in many watersheds identified as top priorities. Already, more than 300 watershed restoration action strategies are guiding the design and implementation of projects that stem various sources of pollution. Although it will take several years to complete action strategies for all high-priority watersheds, states, territories, and tribes are currently using their watershed restoration action strategies to coordinate their programs and plan for future restoration activities. Together, federal, state, and local governments, tribes, the private sector, and communities are working toward healthy watersheds for our future.

PROFILE

Watershed Cleanup Plan Brings Community Together

Dairy farms dot the landscape alongside Muddy Creek in Rockingham County, Virginia.

Landowners in the Muddy Creek basin in Virginia were concerned when they learned the state Department of Environmental Quality had announced that a TMDL cleanup plan would be developed to address high fecal coliform bacteria levels in the creek. The Rockingham County Farm Bureau Association formed a citizen's advisory committee consisting of 12 basin landowners and four environmental advisors. The committee encouraged all basin landowners to participate in meetings sponsored by the Department of Environmental Quality. "Because the landowners have had a vital part of every decision, the community is 100 percent behind the effort," noted Carl Luebben, chair of the Farm Bureau's Environmental Committee. To assist the farmers with their pollutant reduction efforts, the local Farm Bureau recently secured an EPA grant to help implement better practices to manage manure and pesticides.

The Safe Drinking Water Act—Protecting Public Health

Tough Federal Standards—*EPA has set national enforceable health standards for 90 contaminants. New standards are set for contaminants of greatest risk, providing cost-effective, strong public health protection.*

Source Water Protection Programs—*States are examining all sources of drinking water sources to identify contaminant threats and determine susceptibility to contamination, allowing water suppliers, local governments, and citizens to design source water protection measures.*

Public Health Information—*Water systems around the country must provide 250 million Americans with annual reports about where their water comes from, what is in it, and how to protect it. Consumers are also notified when there is a situation posing an immediate threat to public health.*

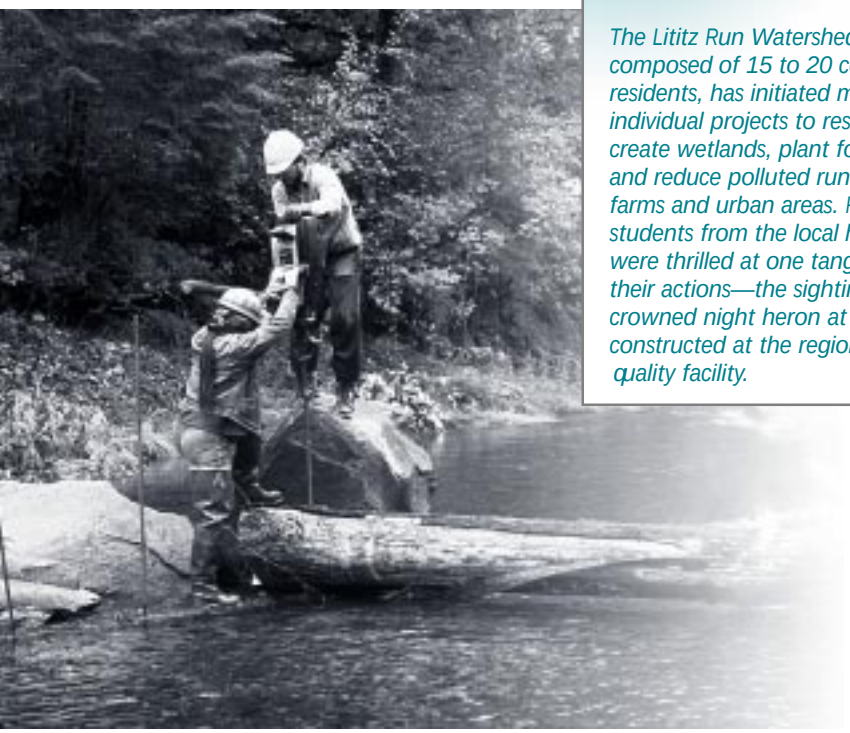
The Drinking Water State Revolving Fund—*This federal-state partnership provides low-cost financing to water systems to upgrade their facilities and for source water protection activities to ensure compliance with drinking water standards.*

Watershed Partnerships:

Frameworks for Success

Federal, state, and local agencies are uniting with locally led partnerships and using technical tools like the TMDL cleanup program to address the nation's remaining challenges. Watershed restoration programs nationwide have demonstrated that partnerships promoting voluntary stewardship can protect America's water resources and restore even badly degraded conditions by using innovation, creative problem solving and cooperative action.

Watershed partnerships are active in every state, attacking pollution problems with newly energized initiatives to clean up America's waters and restore wildlife habitat. Voluntary stewardship programs help channel resources and time toward constructive restoration projects.



PROFILE

Watershed Partnerships Help Restore Shellfish Beds

Efforts of the multi-partner Puget Sound Water Quality Action Team, one of the 28 National Estuary Programs, have restored more than 10,000 acres of commercial shellfish beds despite significant population growth and development. The public-private efforts made by another National Estuary Program, the Sarasota Bay Project, have resulted in a 20 percent increase in seagrass habitat in Sarasota Bay since 1988, as well as the return of the bay scallop to the northern Bay.

PROFILE

Lititz Run Watershed Restoration

The Lititz Run Watershed Alliance, composed of 15 to 20 community residents, has initiated more than 15 individual projects to restore habitat, create wetlands, plant forest buffers, and reduce polluted runoff from farms and urban areas. Faculty and students from the local high school were thrilled at one tangible result of their actions—the sighting of a black crowned night heron at a wetland constructed at the regional water quality facility.

The Lititz Run Watershed Alliance in Pennsylvania removed an old dam to restore wildlife habitat and reduce thermal pollution in the stream.

What You Can Do

Everyone plays an important role in ensuring clean community waters. By forming watershed partnerships, participating in local government decisions, conserving water, or changing our current practices around the house, we can all make a difference. Citizens in all 50 states are volunteering to assess, monitor, and clean up our waters at record-setting rates. The number of volunteers participating in monitoring and cleanup activities in the United States is now close to half a million.

EPA has resources available to show you how to get started and stay involved. EPA's *Adopt Your Watershed* (http://www.epa.gov/adopt) database includes several thousand watershed partnerships and volunteer monitoring organizations that are working nationwide to protect and restore local watersheds. As part of the *Adopt Your Watershed* campaign, more than 1,500 Girl Scouts nationwide have earned a new *Water Drop* patch for completing watershed projects in their local communities (http://www.epa.gov/adopt/patch).

PROFILE

Since 1994 more than 2,700 volunteers in the United States and Canada have participated in the Great American Secchi Dip-In (http://dipin.kent.edu). This volunteer water monitoring effort, which measures water clarity using Secchi disks, was conceived by Dr. Bob Carlson of Kent State University with support from EPA. Reduced clarity can be caused by sedimentation (soil runoff) or by excessive algae growth due to overenrichment from sewage, manure, fertilizers, or atmospheric deposition.

The Road Ahead

This report discusses the enormous value of America's water resources and presents a sobering summary of the threats they face. Ensuring clean, safe water is not an easy task, nor is it a job that any single government agency can do alone. Cleaning up our waters will require a national mobilization of communities, business interests, farmers, ranchers, mine operators, landowners and citizens alike.

As the summer season approaches and we head to our favorite beach, lake, or river, we are reminded of the importance of clean water. By taking actions now to protect our precious water resources, we can help to ensure that our children and our grandchildren can share the same summertime joys we will so fondly cherish.

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More information about upcoming actions to address polluted waters can be found on the TMDL Web site at http://www.epa.gov/owow/tmdl/. In addition, the maps in the *Atlas of America's Polluted Waters* (EPA, 2000), graphically depict waters that do not meet state water quality standards and show the extent of water pollution nationwide.

My Precious Water, I Kiss You

Parkpoom Poompana, age 15 • Fort Myers, Florida • 1996 River of Words Grand Prize Winner

Where to go for more information

Using the Watershed Information Network at http://www.cleanwater.gov/win, you can check out local water conditions, find out about watershed training opportunities, identify voluntary monitoring and watershed programs to get involved in, connect to federal and state agencies, or follow the progress of the Clean Water Action Plan or other initiatives.