



# Clean Water: Foundation of Healthy Communities and a Healthy Environment

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## *Introduction*

Recognizing the importance of clean water for healthy people, a healthy economy, and a healthy environment, the Obama Administration is working hard on a broad array of programs and initiatives to protect and enhance the Nation's waters. The purpose of this document is to highlight important, ongoing initiatives at the Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE), the U.S. Department of Agriculture (USDA), and the Department of the Interior (DOI), together with their other Federal partners, to protect our vital water resources. It also shows some important new initiatives, including updated draft guidance regarding Clean Water Act jurisdiction and modernization of the Principles and Guidelines which guide Federal investments in water resources. Taken together, these actions demonstrate a strong commitment by the Obama Administration to build on past progress and work with state, local and tribal governments, communities, and other private and not-for-profit partners across the Nation to design and deploy innovative approaches that directly address today's clean water challenges.

America has honored its longstanding commitment to clean water. For nearly 40 years, the Clean Water Act, along with other important Federal efforts, has restored and protected the health of America's water resources. For example, long-standing Clean Water Act programs are now complemented by land protection programs in the Farm bill, strengthened by land and water resource management, informed by new science and research, and bolstered by efforts to protect major watersheds and restore ecosystem functions.

Since the enactment of the Clean Water Act, the number of waters that are safe for swimming and fishing has doubled. Billions of pounds of pollution have been controlled by industrial facilities and sewage treatment plants. Ongoing efforts to better manage stormwater and runoff from diffuse, or "nonpoint" sources of pollution are increasingly helping to restore polluted waters. Federal agencies are also building partnerships with states, tribes, local governments, and others to tailor clean water programs to fit the needs of individual large water ecosystems. In many places around the country, the receding tide of water pollution has allowed for the recovery of natural areas that support the economies and cultures of big cities and small towns. As these waters are restored, Americans benefit from opportunities for fishing, swimming, and other recreation, and communities benefit from the economic value and livable character that clean waters provide.

Despite the dramatic progress in restoring the health of the Nation's waters, serious problems remain. Challenges such as dwindling supplies of clean fresh water, fragmentation of land and watersheds, loss of habitat for fish and wildlife, and a changing climate add complexity to protecting our waters and threaten to erode our gains. These four Federal agencies are bringing a variety of tools and approaches in a number of new and ongoing initiatives to meet these challenges head on. Together they are:

- Promoting Innovative Partnerships;
- Ensuring Water Quality to Protect Public Health;
- Enhancing Communities and Economies by Restoring Important Waterbodies;

- Innovating for More Water-Efficient Communities;
- Enhancing Use and Enjoyment of Our Waters;
- Updating the Nation’s Water Policies; and
- Making Better Use of Science to Solve Water Problems.

The programs and initiatives described below are a sample of the efforts underway within Federal agencies to strengthen protection of rivers, lakes, wetlands, and other waters across the country, and ensure clean and healthy waters for generations of Americans to come.



Environmental Protection Agency/Eric Vance. Paddle Boats – Washington, D.C.

## 1. Promoting Innovative Partnerships

The Obama Administration recognizes that partnerships with states, tribes, local governments, the private sector, and diverse stakeholders are an essential and constructive tool for solving shared water pollution challenges. As demonstrated by the new initiatives described below, Federal agencies are promoting innovative, cooperative approaches to protecting water quality.

### Urban Waters Federal Partnership Program

Led by EPA, in coordination with 10 Federal agencies, the goal of the Urban Waters Federal Partnership Program is to restore and protect urban water bodies by engaging communities in activities that foster increased connection, understanding and ownership of their waters and surrounding land. Urban waters throughout the country are substantially impaired, impact large populations, and are typically entangled in complex issues. When urban rivers, lakes, streams or wetlands are inaccessible or degraded, the surrounding communities miss the benefits of community stability and growth that clean urban waters bring. The program will work with communities, particularly those that are under-served or economically distressed, to leverage existing assets and projects and to provide coordinated Federal assistance for community-led efforts.

### ***Land and Water Partnership for Turkey Creek (Gulfport, Mississippi)***

*In recent decades, many forms of pollution have fouled the area around the Turkey Creek Watershed. A coalition of Federal, state and local groups have been working toward restoration of the environmentally challenged watershed. Partnering with EPA, the Land Trust for the Mississippi Coastal Plain (LTMCP) has been working to build watershed partnerships in six watersheds, including Turkey Creek. In 2010, the partnership succeeded in acquiring 400 acres of greenway using land donated by the City of Gulfport, local landowners, and a State grant. Following from these successes, the coalition is continuing to monitor water quality and create more public access through the construction of a series of boardwalks, natural areas and hiking and walking trails.*

### Watershed Partnerships for Sustainable Water Resources

The USACE is implementing a national initiative to build strong, collaborative relationships among Federal, state, tribal, and local water management agencies to address future demands on the Nation's water resources. The goal of this initiative is to find ways to more effectively address shared issues, including climate change, aging water infrastructure, competing demands for water, risks associated with floods and other extreme events, and ensuring timely and up-to-date information. This effort engages Federal agencies, tribes, states, River Basin Commissions, and water management agencies across the country. As part of this initiative, USACE is building a Federal support toolbox that will provide data, models, and information to support better planning and management of water resources. More information is available at <http://www.building-collaboration-for-water.org/>.

### Increased Regulatory Certainty for Farmers

Providing landowners with incentives to manage their lands in ways that help support clean water is critically important. A majority of the surface drinking water in the United States passes through America's farms, ranches, and forests. Most of these lands are privately owned, thus often making the quality of drinking water dependent on the actions of farmers, ranchers and forest owners. As part of President Obama's America's Great Outdoors Initiative, USDA, DOI and EPA have committed to developing and expanding incentive-based tools for protecting

wildlife and clean water. The February 2011 report, “America’s Great Outdoors: A Promise to Future Generations” (AGO report) recommends expanding incentives such as certainty agreements to achieve the goals of improved water quality and continued implementation of voluntary conservation practices. A similar approach is commonly used for conserving wildlife through “Safe Harbor Agreements” and similar approaches in which landowners who agree to undertake stewardship practices on their lands over an extended period of time receive assurances – or “certainty” – that they would not be subject to additional regulation or different management activities under the Endangered Species Act. Now, USDA and EPA are exploring with states and other partners ways in which this innovative approach could be adapted to improve water quality by fostering greater adoption of conservation activities on farms.



National Park Service/Ann Dove. Confluence Park, Denver, Colorado.

## 2. Ensuring Water Quality to Protect Public Health

Drinking water is a basic human need. The Obama Administration is working to reduce contaminants in water and to protect the quality of the water supplies that are the source of drinking water.

### **Reducing Raw Sewage Discharges** (Onondaga County, New York)

*Onondaga County, New York has developed a "Save the Rain" program that is part of its efforts to reduce risks to human health by reducing the number of raw sewage discharges during rain events by 95% by 2018. They have committed to investing more than \$70 million in green infrastructure and have used \$2 million in EPA Clean Water Act Green Project Reserve funding to construct green streets and tree boxes. The County also received a direct grant under the American Recovery and Reinvestment Act (ARRA) to provide rain barrels to members of the community in order to control runoff.*

### Addressing Critical Contaminants in Drinking Water

In March 2010, EPA announced a new strategy to better protect public health from contaminants in drinking water. A key element of the strategy is a new effort to address contaminants in groups, rather than individually, in order to more quickly, cost-effectively, and transparently set drinking water standards to protect public health. In February 2011, EPA announced the first contaminant group and will be working to develop regulations to address up to 16 compounds of concern. In addition, EPA is working to address emerging contaminants that could present public health risks by setting a new drinking water standard for the contaminant perchlorate, enhancing efforts to gather data on 30 emerging contaminants, and determining whether to set standards for additional contaminants of

potential concern. EPA is also revising standards for lead and copper and for total coliform in drinking water, and is reviewing the potential health effects of chromium-6 to determine whether revisions are needed to the existing standards for total chromium.

### Promote Green Infrastructure to Upgrade Community Water/Wastewater Systems

EPA is finalizing a strategy to support the work of communities to improve the environment, protect public health, and build greener, more sustainable communities through the use of Green Infrastructure. This strategy will make green infrastructure an available tool for meeting Clean Water Act requirements in sewer permitting and plans, enforcement orders and consent decrees, and in other areas. Green Infrastructure is a win-win-win approach to environmental protection - by protecting and restoring natural landscape features (such as forests, floodplains and wetlands), communities can improve water quality while providing wildlife habitat and opportunities for outdoor recreation. EPA, other Federal agencies, and community partners are working to use lessons learned to accelerate green infrastructure implementation across the Nation.

### Funding Rural Water Treatment Systems

USDA assists rural communities in ensuring that safe, clean, and reliable water and waste services are available at reasonable costs. USDA invests in modern water and waste disposal infrastructure through the Water and Waste Loan and Grant Program (WWD) to improve the quality and quantity of water in rural areas. WWD offers loans, grants, and loan guarantees to rural communities with a population of less than 10,000 for water, sanitary sewage, solid waste

disposal, and storm water disposal facilities. USDA financed water, waste water, and solid waste projects reduce or eliminate harmful discharge or contamination of rivers, lakes and streams in rural areas. In the past two years, USDA has invested nearly \$6 billion in loans and grants for infrastructure development, technical assistance, and training to rural communities. In addition to providing safe drinking water, improving wastewater treatment systems, and protecting the environment, these investments help bring increased economic benefits to rural America and create jobs.



Environmental Protection Agency/WaterSense Program



### 3. Enhancing Communities and Economies by Restoring Important Waterbodies

Some of the Nation's most valuable and iconic ecosystems face complex and daunting water pollution problems. The Obama Administration is significantly increasing investments and technical assistance to help states, tribes, local governments, and stakeholders develop creative conservation approaches that are tailored to the specific needs of these iconic places.

#### Great Lakes Restoration Initiative

Over the past two years the Obama Administration has invested \$775 million in the Great Lakes Restoration Initiative (GLRI). The Great Lakes are the largest system of surface freshwater on earth, containing 95 percent of the surface freshwater in the United States and 20 percent in the world. The lakes provide transportation for goods, fresh water for industries, drinking water for communities, and recreation for the basin's more than 30 million citizens. The GLRI is designed to restore and maintain the chemical, physical and biological integrity of the Great Lakes Basin Ecosystem in coordination with states, tribes, municipalities, and other organizations. This unprecedented initiative focuses on five major restoration priorities: mitigating toxic substances and restoring areas of concern; reducing the impact of invasive species; improving near-shore health and reducing non-point source pollution; improving habitat and reducing species loss; and improving information, engagement, and accountability.

#### **Waterfront Revitalization for Kinnickinnic River** (Milwaukee, Wisconsin)

*EPA leveraged \$14.3 million in Federal Great Lakes funding with an additional \$7.7 million in funding from the proceeds of a state bond issue toward a \$22 million sediment remediation project that removed about 167,000 cubic yards of sediment contaminated with PCBs and other toxics from a reach of Milwaukee's Kinnickinnic River. This sediment remediation and related local investments are resulting in improvements to human health and the environment including economic revitalization, enhanced use of rivers, harbors, and water resources, more opportunities for waterfront redevelopment, improved aesthetics, and increased property values.*

#### Chesapeake Bay Restoration

The Chesapeake Bay watershed is one of the most extraordinary places in America. The Nation's largest estuary and its network of streams, creeks and rivers hold tremendous ecological, cultural, economic, historic and recreational value for the region and its citizens. The Bay watershed spans six states and the District of Columbia and is home to 17 million Americans. But the Bay and its tributaries remain in poor health, with polluted water, low populations of fish and shellfish, and degraded habitats. In May 2009, President Obama signed an Executive Order directing Federal agencies to take significant, new action to restore the Chesapeake Bay and enhance the local communities and economies of the Bay region. The purpose of the Executive Order is to protect and restore the health, heritage, natural resources, and social and economic value of the Nation's largest estuarine ecosystem and the natural sustainability of its watershed. Federal agencies have developed a suite of programs to restore water quality, recover habitat, sustain fish and wildlife, conserve land, and increase public access in the Bay. They are also working closely to support efforts by states and local governments, the agricultural community, and citizens to design approaches to achieve the long-term goal of a healthy Chesapeake Bay.

### Everglades and the South Florida Ecosystem Restoration Task Force

Once the Everglades were a vast, free-flowing river of grass extending from the Kissimmee chain of lakes to Florida Bay, and these sub-tropical wetlands supported a rich diversity of plants, fish and other animals. Today, it is an ecosystem in peril. Construction of over 1,700 miles of canals and levees in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries changed the landscape, interrupting the natural sheet flow of water across the system. More than half the Everglades wetlands were lost to development. Today an intergovernmental effort, led by DOI and the USACE, is working to restore the magnificent “River of Grass.” The goal of this effort is to restore, preserve, and protect this National treasure, while providing for other water-related needs of the region, including water supply and flood protection. Increasing water supplies for environmental use by improving the quantity, timing and distribution of freshwater is also a major goal of the project. The USACE leads the implementation of the Comprehensive Everglades Restoration Program – part of a broader Everglades restoration effort – which targets 68 individual projects that together will contribute to restoration of the massive Everglades ecosystem. Water quality improvements are largely being implemented by the State of Florida with some assistance from Federal agencies. To date, the State has constructed over 64,000 acres of stormwater treatment areas and implemented best management practices on farms to reduce the amount of nutrient runoff to the Everglades.



U.S. Army Corps of Engineers/Jacksonville District. Picayune Strand Groundbreaking/Everglades, Florida.

### California Bay-Delta

California's Sacramento/San Joaquin River Delta-San Francisco Bay Estuary (Bay-Delta) is among the most important estuary ecosystems in the Nation and is the hub of the country's largest water delivery system, providing drinking water to 25 million people. The Bay-Delta is in crisis. After decades of steep and steady decline, the ecosystem has reached a point of collapse, with some imperiled fish species at all-time low population levels and threats from climate change and associated sea-level rise, seismic risks, and other stressors – such as pesticides, pollutant discharges, and invasive species – underscoring the system's vulnerability. In December 2009, six Federal agencies issued an Interim Federal Action Plan for the Bay-Delta, describing priority Federal actions to address several of the causes of ecosystem decline and to bring greater reliability to management of water supplies in California. Led by the Council on Environmental Quality (CEQ) and DOI, these agencies are working together to build a partnership with the State of California to develop a long-term plan for ecosystem restoration and water management in the Bay-Delta. Through this plan, Federal agencies will promote water conservation and efficiencies, investigate Bay-Delta water quality and other stressors, provide drought assistance to farmers, and improve flood risk management.

### Gulf of Mexico Restoration and Recovery

The Gulf of Mexico and its coastal areas are important resources for the entire United States. The waters of the Gulf sustain a diverse and vibrant ecosystem and the Gulf's culture, natural beauty, and historic significance are unique. Each year, millions of tourists visit the Gulf to vacation, swim, boat, fish, hunt, and bird-watch; and, together, the Gulf's tourism and commercial and recreational fishing industries make a significant contribution to the United States economy. More than 90 percent of the Nation's offshore oil and gas is produced in the Gulf, and it is where nearly one-third of seafood production in the continental United States is harvested. In October 2010, President Obama signed an Executive Order to effectively address longstanding ecological decline along the Gulf Coast and begin moving toward a healthier and more resilient Gulf Coast ecosystem. The *Deepwater Horizon* oil spill underscored the critical link between the environment and the economic health of the Gulf of Mexico, and the Obama Administration is committed to helping this vital ecosystem recover from the impacts of the spill. To complement the Natural Resource Damage Assessment work being done by DOI, NOAA, and the Gulf states to address harm caused by the spill, the Executive Order established the Gulf Coast Ecosystem Restoration Task Force to bring together Federal and state agency representatives to address the broader ecosystem restoration needs in the Gulf. The Task Force, led by EPA, coordinates intergovernmental responsibilities, planning, and exchange of information to better implement Gulf Coast ecosystem restoration and to facilitate appropriate accountability throughout the restoration process.

## 4. Innovating for More Water-Efficient Communities

Making efficient use of water is smart strategy and an important way to help manage competing demands for finite water resources. Using less water also saves communities and ratepayers money and reduces energy use and the costs of water infrastructure and water treatment. The Obama Administration is promoting water efficiency through a number of Federal agency initiatives.

### Leading by Example: Federal Agency Water Conservation Efforts

In October 2009, President Obama signed an Executive Order that set environmental sustainability goals for Federal agencies and directed them to make improvements to their environmental, energy and economic performance. The Federal government occupies nearly 500,000 buildings, operates more than 600,000 vehicles and employs more than 1.8 million civilians. Agencies are required to meet a number of energy, waste reduction, and water conservation targets under the Executive Order, including reducing potable water use by 26 percent and reducing industrial, landscaping and agricultural water use by 20 percent by 2020.

### WaterSMART Program

DOI's WaterSMART program is helping leaders in water resource planning and management tackle America's water challenges. This program integrates and coordinates the water sustainability efforts of DOI and its Federal, state, and private partners. Under this effort, the Bureau of Reclamation has expanded its grant programs and its river basin studies, and the U.S. Geological Survey will conduct the National Water Census for the first time in over 30 years. In addition, the [WaterSMART](#) website is providing partners with a resource to coordinate water conservation and sustainable water strategies. In addition, DOI facilities and operations will implement water footprint programs to help them meet the water conservation goals set by President Obama for Federal agencies. DOI will also identify the water footprint of various energy technologies to better understand how these developing technologies impact water goals.

### WaterSense Conservation Programs

EPA's WaterSense program is working to protect the future of the Nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs, and practices. To date, the WaterSense program has helped consumers save a cumulative 46 billion gallons of water and \$343 million in water and sewer bills. WaterSense develops specifications for water-saving products that are verified for efficiency and performance through third-party

#### ***"Fix a Leak Roundup" to Save Water*** *(Dallas, Texas)*

*The City of Dallas hosted the "Great Dallas Fix a Leak Roundup" to educate citizens about finding and fixing leaks. The City operates a program that offers assistance with minor plumbing problems that may cause water waste and higher water bills. This program is offered to qualified low-income residential water customers and provides high-efficiency toilets, showerheads, and aerators in addition to making the repairs. In partnership with EPA, local plumbers, Lowe's, Kohler, and other organizations, Dallas addressed over 100 households on the program's waiting list for Fix a Leak Week 2010. Repairs made during Fix a Leak Week will save approximately 2.1 million gallons of water per year. Utility bill savings vary based on the severity of the leaks, but as an example, one elderly homeowner who had a serious toilet leak is expected to save about \$200 per year on her water bills.*

certification. Products carrying the WaterSense label perform well, help save money, and encourage innovation in manufacturing. The program's 2,100 partners across the country acknowledge the program's value, both in the credibility of the label and as a resource for educating the public on the need for water efficiency. In the future, WaterSense will expand to develop new specifications for water-using products and promote public awareness through social media and public outreach campaigns with partners.

#### Water Conservation on Rural Lands

USDA is working with farmers through the Environmental Quality Incentives Program (EQIP) and the Agricultural Water Enhancement Program (AWEP) to improve water use efficiency through drip irrigation and other measures that allow farmers to grow more crops with less water. Twenty-eight projects totaling more than \$60 million approved for AWEP in fiscal year 2010 are supporting water conservation efforts in nine states. For example, in central Colorado, satellite and Internet technology funded through AWEP allows farmers to monitor water-use data in real-time. This information helps them decide how much water to use on their crops, when to apply irrigation water, and what type of irrigation equipment will work best for their operations.



National Aeronautics and Space Administration. Northern California.

## 5. Enhancing Use and Enjoyment of Our Waters

Those who enjoy the Nation’s waters for recreation, fishing or hunting understand the value of clean water and are key partners in protecting water health. The Obama Administration is working to preserve public access to waters and maintain diverse recreation opportunities that rely on clean water. Some key examples of this work are described below.

### America’s Great Outdoors

In April 2010, President Obama announced the America’s Great Outdoors (AGO) Initiative, a grassroots approach to protecting our lands and waters and connecting all Americans to their natural and cultural heritage. In February 2011, the Obama Administration released “America’s Great Outdoors: A Promise to Future Generations,” which contains recommendations and actions derived from AGO listening sessions all around the country. One of the actions to emerge from this initiative is to establish the AGO National Recreational Blueway Trails Initiative, which will increase access to rivers and lakes, and support community-based protection of the waters. A “blueway” is a designated community-scale portion of river recognized as a destination for fishing, boating, wildlife watching, and other recreation that

should get special attention for restoration and access. Led by USDA and DOI working with several other agencies, the initiative will provide assistance and a mechanism for designating and implementing an AGO National Recreation Blueway Trail.

**Restoring Forest Health and  
Protecting Water Supplies**  
(Pike National Forest, Colorado)

*The Hayman fire -- Colorado’s largest and most devastating wildfire -- burned a total of 137,760 acres in the Pike National Forest in 2002. The fire destroying 600 structures, obliterated forest vegetation and wildlife habitat, and damaged recreation sites, trails and roads. The fire also severely damaged the watershed which supplies water to more than 75 percent of Colorado residents, including Denver. In 2009, the Obama Administration, the National Forest Foundation and Vail Resorts announced a unique partnership to restore forest health and water quality to this critical ecosystem located approximately 70 miles from Denver. The Hayman Restoration Partnership focuses on 45,000 acres of the most severely affected areas that feed into the Upper South Platte River, the main water supply for Denver. Instead of looking at only one element of restoration, such as planting trees, the Partnership is addressing the entire ecosystem with a workplan involving restoration and planting of native species in key watersheds. This comprehensive approach engages local governments and residents, Vail Resorts employees, conservation organizations and the entire Front Range community.*

### Preserving Access to Hunting and Fishing Opportunities

USDA has made a strong commitment to providing hunting and fishing access through full funding for the Voluntary Public Access and Habitat Incentive Program (“Open Fields”). This program provides grants to states to provide greater access to hunting and fishing opportunities on private lands. It also helps landowners restore and conserve habitat, including wetlands and other ecosystems that are critical to healthy aquatic ecosystems. Approximately \$12 million in Open Fields funds were awarded to 17 states in 2010, and in January 2011, USDA announced that an additional \$8 million is available.

### Protecting Rural Landscapes

Using Farm Bill conservation programs, such as the Conservation Reserve Program (CRP) and Wetlands Reserve Program (WRP), USDA is producing significant benefits for clean water in a variety of watersheds across the country. Through these programs, USDA enters into conservation agreements with landowners to preserve the enormous contribution of these lands to reducing erosion and run-off into rivers and streams while also providing hunting and fishing opportunities for sportsmen and women. For example, in the Upper Mississippi River Basin, the Natural Resources Conservation Service (NRCS) has committed more than \$300 million in financial and technical assistance to help farmers reduce erosion and nutrient runoff into streams and rivers. In South Florida, USDA worked with ranching families to enroll 26,000 acres in the Fisheating Creek watershed in the WRP. This project will contribute to restoration of the Everglades ecosystem and will protect this rural landscape for future generations. In the Chesapeake Bay, the California Bay-Delta, the Great Lakes, the Gulf Coast, and many other important landscapes, USDA is working with local partners – landowners, states, conservation groups, and others – to restore wetlands and water quality.



U.S. Fish and Wildlife Service. West Virginia.

## 6. Updating the Nation's Water Policies and Regulations

The Obama Administration is committed to maintaining strong and clear standards for protecting waters, and ensuring that Federal agencies consider social, economic and environmental needs in a transparent and consistent way when making new Federal investments in water projects.

### Clean Water Act Draft Guidance on the Scope of Waters Protected

The USACE and EPA have released draft guidance to clarify which waters and wetlands are protected by the Clean Water Act. The revised draft guidance will provide predictable, consistent, and effective protection of waters that many communities depend upon for drinking, swimming, and fishing. The agencies' guidance also provides clearer, less burdensome guidelines for the public that make it easier and simpler to determine whether a particular water body is protected. The revised

guidance is fully consistent with the Act, applicable regulations, and key Supreme Court decisions in 2001 and 2006. The agencies will conduct a transparent and inclusive process for developing final guidance by making sure that the public and all interested parties and organizations have the opportunity to provide input and comments. The agencies are also developing regulations to address this important topic.

### Modernizing Federal Rules for Water Resources Development

CEQ is leading a collaborative, interagency effort to modernize the Principles and Guidelines which guide Federal investments in water resources. This effort will incorporate the lessons learned over the last three decades of implementation of the "Principles and Guidelines for Water and Land Related Resources Implementation Studies," that went into effect in March 1983. Modernizing the Principles and Guidelines will ensure future Federal investments in water resources more fully consider environmental, economic and social goals in potential actions. The Administration believes that all of these effects must be weighed in evaluating Federal investments in water resources across the Federal government to promote transparency and comparability. Given the many competing demands for limited Federal resources, it is intended that future Federal investments in water resources strive to maximize public benefits, particularly in comparison to costs.

### Effective Stewardship of Water Resources in National Forests

The 193 million acres of the National Forest and Grassland System protect watersheds that provide drinking water to tens of millions of Americans. USDA's Forest Service has developed a new "planning rule" to govern the management and stewardship of these lands. The proposed rule places special emphasis on conservation of water resources by requiring the Forest Service to take special measures to protect streams, rivers, and priority watersheds. For example, the proposed planning rule requires the Forest Service to develop plans for each of the National

#### ***Improving Control of Polluted Stormwater (San Pedro River, Arizona)***

*The San Pedro River is one of the most ecologically rich rivers in Arizona. Stormwater discharges from construction sites carried oil, grease, and other pollutants to ephemeral tributaries of the San Pedro. EPA efforts to address this pollution problem were constrained by the complex evidence needed to establish that the tributaries were protected under the Clean Water Act and EPA ultimately had to discontinue efforts to address these sources. Challenges related to protection of these waters are common in throughout the arid southwest.*



Forests and Grasslands that identify priority watersheds for restoration and maintenance; maintain, protect, or restore riparian areas; and establish minimum buffers areas around water bodies.

## 7. Making Better Use of Science to Solve Water Problems

Basic research into the functions and conditions of the Nation's waters is an essential foundation for clean water. Equally important is a commitment to make effective use of scientific information to improve water programs and policies. The Obama Administration is actively making use of recent scientific information and new analytic tools to focus on emerging issues and to guide water quality programs and investments.

### Understanding Emerging Water Pollutants

EPA is working to address contaminants of emerging concern in the Nation's waters to protect public health and the environment. Much of this work is focused on strengthening scientific knowledge of emerging pollutants, for example, pharmaceuticals in waste water, to ensure that high-quality scientific information is used to develop policies. A key initiative is to evaluate current pharmaceutical disposal practices to identify how to keep unused pharmaceuticals out of waters. As scientific data is gathered and analyzed for these and other contaminants that have the potential to affect public health, EPA will continue to work with its partners and the public to ensure that America's drinking water and rivers, streams, and lakes are protected.

#### ***Interagency Work to Evaluate Emerging Contaminants (Assabet River, Massachusetts)***

*The Environmental Protection Agency, U.S. Geological Survey, U.S. Fish and Wildlife Service, National Park Service, and others are working to characterize the extent of contamination by endocrine-disrupting chemicals (i.e., chemicals that cause reproductive and development problems in animals and humans) in the Assabet River. The agencies are working to determine the sources of these chemicals and to determine the effects on fish living in the river. The findings of this research will be used to ensure that Clean Water Act permits are written to protect water quality downstream of wastewater treatment plants. The results of this survey will help EPA, states, and other partners to assess the prevalence and effects of endocrine-disrupting chemicals in the Assabet River and similar rivers around the country.*

### Informing Responsible Development Practices for Natural Gas

As described in the Obama Administration's [\*Blueprint for a Secure Energy Future\*](#), recent technology and operational improvements in extracting natural gas resources, particularly shale gas, have increased gas drilling activities nationally and led to significantly higher natural gas production estimates for decades to come. To take full advantage of this important domestic energy resource, we must proactively address concerns that have been raised regarding potential negative impacts associated with hydraulic fracturing (fracking) practices. The Obama Administration is taking steps to address these concerns and ensure that natural gas production proceeds in a safe and responsible manner. EPA and DOE are leading Federal efforts to study the impacts of fracking on drinking water and surface water.

### Anticipating Climate Change Impacts on Water Resources

The impacts of climate change already are forcing changes in management of water resources. Climate change may dramatically affect water supplies in some areas, impact coastal water infrastructure, wetlands and barrier islands, cause relocation of wildlife, increase wildland fires, and further spread invasive species. Federal agencies are required to develop climate adaptation plans, and Federal agencies are developing approaches for applying scientific tools to increase understanding of climate change and its impact on land and water resources. For example, DOI's eight regional Climate Science Centers and network of Landscape Conservation Cooperatives are part of a strategy to address current and future impacts of climate change on the land and water resources that DOI manages. And USDA's Forest Service has also developed a comprehensive climate change plan to *"ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources."* To provide leadership and organization for these efforts, CEQ, the Office of Science and Technology Policy, and the National Oceanic and Atmospheric Administration lead the Interagency Climate Change Adaptation Task Force which is developing a National Action Plan for climate adaptation of freshwater resources.

### Designing Conservation Benefits Research to Focus Investments

The Farm Bill provides hundreds of millions of dollars annually to help farmers and other landowners conserve water resources. With such a significant public investment, it is vital that these funds be spent in a way that maximizes the benefits to clean water. USDA has made significant investments in improving scientific knowledge around stewardship activities on private lands. The Conservation Effects Assessment Program (CEAP) has undertaken unprecedented studies of agriculture and conservation practices in the Upper Mississippi River Basin and the Chesapeake Bay and is undertaking similar studies in other watersheds around the Nation. CEAP reports help focus investments to achieve the greatest water quality benefits and demonstrate that voluntary conservation activities – such as conservation tillage, fertilizer management, cover crops, and buffer strips – have enormous benefits to water quality when used by farmers in the right way.

## ***Conclusion***

The Nation's investment in clean water began with a commitment by the Federal government to end the flagrant pollution of rivers, lakes and coastal waters. Forty years later, there is a growing appreciation that clean water, healthy watersheds, and resilient ecosystems are essential to the health and well-being of people and to the character and economic vitality of communities.

The activities described in this document and a variety of other national, regional, and locally led actions are protecting the health of Americans and keeping safe the rivers, streams, lakes, wetlands and other waters that people across the country rely on every day for drinking, swimming, and fishing, and that support farming, recreation, tourism and economic growth. The Obama Administration is committed to developing innovative approaches and partnerships with state, tribal and local governments and stakeholders that can deliver effective water pollution controls. These partnerships are especially important for protecting large, iconic ecosystems that face the most significant water management problems. At the same time, the Federal government must do its part to update its water policies, make active use of the latest scientific findings, and support local communities in ensuring that people are able to use and enjoy the Nation's heritage of water resources. Over the coming years, the Obama Administration will continue to advance these important goals and ensure that clean water provides the foundation of healthy communities.



U.S. Fish and Wildlife Service/Larry Jernigan.