

Office of Wetlands, Oceans and Watersheds

2008 Annual Report



Note from the Acting Director

Dear Colleagues, Friends and Partners:

First of all, I want to thank all of our partners, including federal agencies, state, tribal and local governments, the private sector and academia who played a role in the many milestones presented in our annual report. We cannot take credit for these accomplishments without acknowledging your invaluable contributions.

With the beginning of a new Administration and the promise of new directions and possibilities, EPA's Office of Wetlands, Oceans and Watersheds (OWOW) will also be looking to the future. Our new EPA Administrator, Lisa Jackson, has outlined three fundamental values: science-based policies and programs, adherence to the rule of law, and transparency. OWOW embraces these principles and looks forward to working with our new leadership to make them a reality here at EPA.

In the coming year, OWOW will continue to advance strategies to reduce nutrients, which are a leading cause of pollution in our rivers, lakes, wetlands and estuaries. With the release of the new Gulf Hypoxia Action Plan in 2008, we have outlined an ambitious strategy to help combat hypoxia. Another priority will be to prevent healthy watersheds from becoming degraded. While we have invested heavily in the past decade and made significant progress in cleaning up impaired waterbodies, we must also look to protect those waterbodies that meet standards and support a diversity of aquatic life. And finally, we will continue to work closely with the Corps of Engineers on policies related to the "Waters of the U.S." and strive to achieve a net increase of wetlands with a greater focus on biological functions.

I encourage my staff, as well as our external partners, to explore ways to leverage the great work that we do. We need to build upon and expand our partnerships with our sister federal agencies and to work more closely with our state partners to ensure that our programs deliver even better environmental performance for the American public. Clean water is everyone's business. And everyone must do his or her part to protect this precious and finite natural resource.

I look forward to working with each of you as we strive together to achieve our goals for clean water and healthy ecosystems in 2009.

Sincerely,

*Suzanne Schwartz, Acting Director
Office of Wetlands, Oceans and Watersheds*

2008 Highlights

Hypoxia Action Plan: An updated Hypoxia Action Plan, released in June 2008, sets the stage to combat the “dead zone” in the Gulf of Mexico. The plan, which followed a scientific reassessment of the 2001 Action Plan, includes 11 actions designed to reduce, mitigate and control hypoxia.

Wetland Protection and Restoration: OWOW and its partners improved and/or restored more than 82,000 acres of wetlands in Fiscal Year 2008. Major contributions came from the National Estuary Program, the Five-Star Restoration Program and the §319 Nonpoint Source Program.

Yazoo Section 404(c) Veto: In 2008, EPA exercised one of the strongest legal authorities available for wetlands protection under the Clean Water Act when it completed a §404(c) veto of the Yazoo Backwater Pumps project in the Mississippi Delta, protecting more than 67,000 acres of vital wetlands.

Wetlands Guidance: In 2008, EPA and the U.S. Army Corps of Engineers issued revised guidance on the scope of “Waters of the U.S.,” providing further clarifications on the Supreme Court’s decision in *Rapanos vs. the United States*.

National Aquatic Surveys: 2008 marked the completion of the first year of field sampling for the National Rivers and Streams Assessment, along with extensive lab and analytical work for the National Lakes Assessment. Together with upcoming surveys of wetlands and coastal waters, these ambitious national assessments will provide statistically valid data on the condition of the nation’s aquatic resources.

Watershed Protection and Restoration: Thanks to efforts involving EPA and numerous partners, more than 2,000 waterbodies, identified as impaired in 2002, now meet water quality standards. In addition, more than 9,000 Total Maximum Daily Loads (i.e., impaired water cleanup plans) were completed in 2008, including 314 in the Mississippi Basin.

New Partnerships: OWOW launched new partnerships with federal land management agencies to accelerate the cleanup of impaired waters on federal lands.

About the Office of Wetlands, Oceans and Watersheds (OWOW)

OWOW is one of five offices in the Office of Water at EPA Headquarters in Washington, D.C. The office provides leadership, policy direction, and financial support to our 10 regional offices and to the states, tribes and territories that implement our programs. We also work collaboratively with our sister EPA offices, other federal agencies, as well as with local governments, the private sector and non-profit organizations to carry out our mission to protect and restore the aquatic ecosystems of our marine and fresh waters.

In addition to our Clean Water Act authorities, the office has authorities under the Marine Protection, Research, and Sanctuaries Act (Ocean Dumping), Coastal Zone Management Act, National Environmental Policy Act and several other environmental statutes.

OWOW Programs and Initiatives

- National Estuary Program
- Dredged Material Management
- Ocean Dumping
- Marine Debris
- Control of Vessel Discharges
- Ocean Monitoring and the Ocean Survey Vessel *Bold*
- National Water Quality Inventory
- National Aquatic Resource Surveys
- Volunteer Monitoring
- Nonpoint Source Program
- Wetlands Permitting
- Total Maximum Daily Loads (TMDLs)
- Five-Star Restoration Program
- Wetland Program Development Grants
- Targeted Watersheds Grants
- Community Action for a Renewed Environment (CARE) program (new in 2009)

For more information about OWOW, visit epa.gov/owow

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CHAPTER ONE

Protecting and Restoring Water Quality on a Watershed Basis

Although tremendous progress has been made in cleaning up the nation's waters since the passage of the landmark 1972 Clean Water Act (CWA), many challenges remain. An estimated 40 percent of the waters assessed by the states fail to meet state water quality standards. Low-oxygen or "dead zones" — caused by excessive amounts of nutrients — plague many waters, including the Gulf of Mexico, the Chesapeake Bay and other important estuaries. Stormwater runoff from farms, lawns and cities is now a leading cause of impairment. Unlike factory discharges from pipes and sewage treatment plants, these discharges are much more difficult to control and require a more holistic, watershed-based approach.

In 2008, OWOW strengthened capacity at the state and local level to accelerate the cleanup of polluted waterbodies through a number of its statutory programs and initiatives, including the Total Maximum Daily Load (TMDL) Program and §319 Nonpoint Source Program. To address hypoxia in the Gulf of Mexico, a new plan was announced to help reduce and control major sources of pollution that sometimes originate thousands of miles upstream. OWOW also launched new partnerships with other federal agencies to restore impaired waters on federal lands, which comprise a large percent of the nation's land area. And finally, OWOW advanced low impact development (LID) and other innovative approaches to stormwater management through numerous partnerships and a demonstration project at EPA Headquarters.

A Watershed Approach

A Watershed Approach is the most effective framework to address today's complex water resource challenges.

The approach:

- *Is hydrologically-defined, geographically-focused*
- *Includes all stressors (air and water)*
- *Involves all stakeholders, including public (federal, state, local) and private sector*
- *Is community-based*
- *Includes a coordinating framework*
- *Strategically addresses priority water resource goals (e.g. water quality, habitat)*
- *Integrates multiple programs (regulatory and voluntary)*
- *Is based on sound science*

2008 Gulf Hypoxia Plan Focuses on Nutrient Reductions and Accountability

Hypoxia in the Gulf of Mexico continues to garner national attention. An article in *Science* reported over 400 hypoxic zones worldwide, and the zone in the Gulf ranks second largest in the world at 20,720 square kilometers. To move forward on this pressing national concern, in June 2008, the interagency Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, chaired by EPA's Office of Water, published the Gulf Hypoxia Action Plan 2008 after completing a scientific reassessment of the 2001 Action Plan. The 2008 Action Plan contains 11 actions designed to reduce, mitigate and control hypoxia in the Northern Gulf of Mexico and improve water quality throughout the Mississippi River Basin.

Critical improvements include:

- 1) A focus on state-led nutrient reduction strategies.
- 2) A complementary action to develop and implement federal strategies.
- 3) An outreach plan to engage stakeholders and build partnerships.

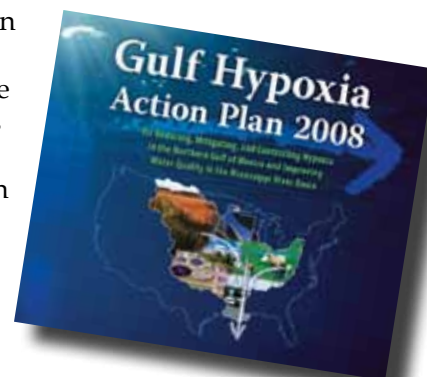
In addition, the Action Plan increases accountability and specificity through an Annual Operating Plan that provides mechanisms for maintaining progress and tracking results. The first of five to guide the Task Force, the 2008 Annual Operating Plan is a compilation of actions that the various state and federal members of the Task Force took in FY 2008 to implement the Action Plan.

The OWOW Director leads the Task Force Coordinating Committee and EPA's Hypoxia Team in

implementing the Action Plan with support from five federal and ten state partners. A major focus is the development of EPA's nutrient reduction strategy. The four main objectives include:

- Employing innovative uses of Clean Water Act programs and tools.
- Supporting the adoption of state numeric nutrient standards and criteria.
- Enhancing environmental priorities in agricultural program implementation.
- Improving and utilizing hydrologic models to identify watersheds within the Basin with the highest loadings of nitrogen and phosphorus

(Contact: Kristen Goodrich, 202-566-1284)



The newly redesigned Task Force Web site, www.epa.gov/msbasin, serves as a resource for partners and stakeholders.



Sediment loads empty into the Gulf from the Atchafalaya River Basin.

OWOW Promotes Low Impact Development for Cities and Developers

OWOW works with EPA's Office of Wastewater Management and other partners to promote low impact development (LID) approaches to prevent and mitigate the effects of urban runoff and stormwater. LID practices, including green roofs, rain gardens, vegetated swales and porous pavers, can reduce the harmful effects of stormwater runoff on downstream receiving waters. The goal is to mimic the natural way water moves through an area prior to development by using design techniques and strategies that infiltrate, evaporate and reuse runoff close to its source.

In January 2008, OWOW published "Reducing Costs through Low Impact Development (LID) Strategies and Practices" and made numerous presentations at conferences to advertise the findings – that LID typically saves communities and developers money while protecting water quality. Working with the signatories of the "Green Infrastructure Statement of Intent" (2007), OWOW continues to promote these practices through an LID Best Management Practices Effectiveness database, LID costing tools, LID models, guidance documents, fact sheets and other products.

On EPA's Green Infrastructure Web site, www.epa.gov/greeninfrastructure, OWOW co-funded a Municipal Handbook Series to provide local governments with information on funding options, retrofit policies, green streets and rainwater harvesting programs. (Contacts: Robert Goo, 202-566-1201; Don Waye, 202-566-1170 or Anne Weinberg, 202-566-1217)



Large cisterns in the basement of EPA West collect rainwater as part of EPA's LID demonstration project.



Reducing Costs through Low Impact Development (LID) shows how LID can protect water quality and save money!

100 Nonpoint Source Successes Documented

OWOW exceeded EPA's commitment to partially or fully restore 91 waterbodies, achieving its fiscal year 2008 strategic plan measure. In November 2008, OWOW posted its 100th restored waterbody success story to the Nonpoint Source Web site at www.epa.gov/np/success. The definition of success is strict: to qualify, a previously impaired waterbody that had been included on the Clean Water Act's (CWA's) §303(d) list of polluted waters must have subsequently achieved water quality standards for one or more pollutants and/or designated uses. Further, the water quality improvement must have been as a result of addressing nonpoint source pollution through actual restoration efforts.

These successes span 34 states and the District of Columbia, with many states documenting multiple successes. In the vast majority of cases, restoration was at least partially funded by the CWA's §319 Nonpoint Source Management Program. Under §319, states, territories and tribes receive grant money that supports a wide variety of restoration, educational and monitoring activities. (Contacts: Andrea Matzke, 202-566-1150 or Jenny Biddle, 202-566-1281)



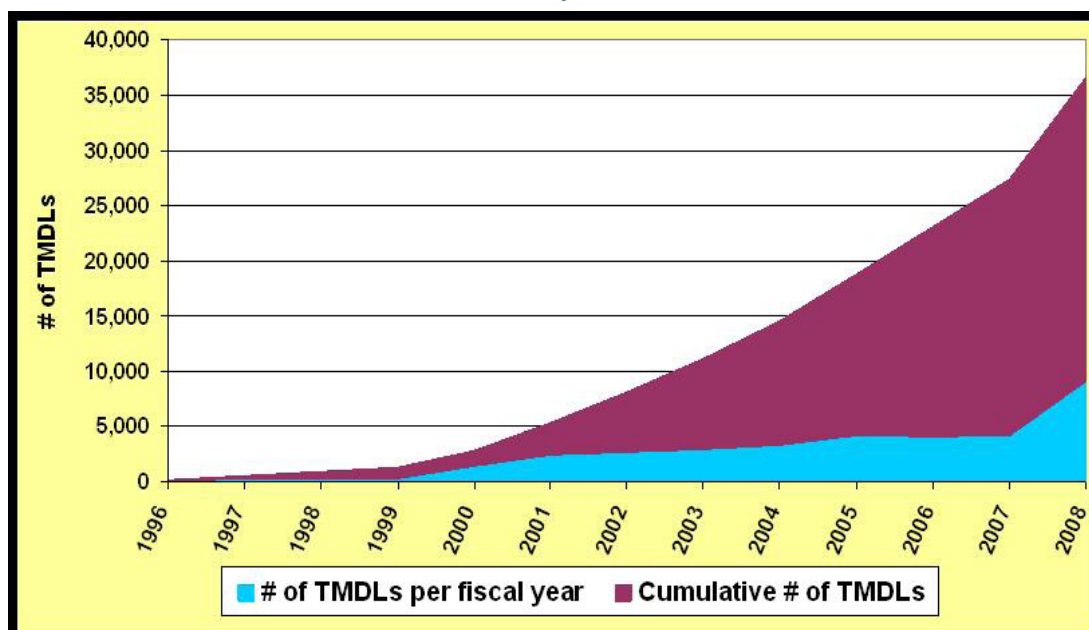
New Document Helps States Clean up Waters Impaired by Air-Deposited Mercury

In Sept. 2008, OWOW released “TMDLs Where Mercury Loadings are Predominantly from Air Deposition,” a document to assist states in developing watershed-based cleanup plans (TMDLs) for mercury-impaired waters under CWA §303(d). A Total Maximum Daily Load, or TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards (i.e., a “pollution budget”). Also referred to as a mercury TMDL “checklist,” the document helps ensure that states follow existing EPA guidance. The document also provides factors for states to consider when developing TMDLs at different geographic scales (i.e., waterbody, regional and interstate), building on successful approaches. This effort is part of EPA’s multi-pronged approach to accelerate the clean up of mercury-impaired waters. Presently, more than 8,500 water bodies in 43 states and Puerto Rico are listed as impaired due to mercury. EPA, the states and other stakeholders have been working to determine how best to address this challenging problem, particularly where the primary source of the mercury is atmospheric deposition.

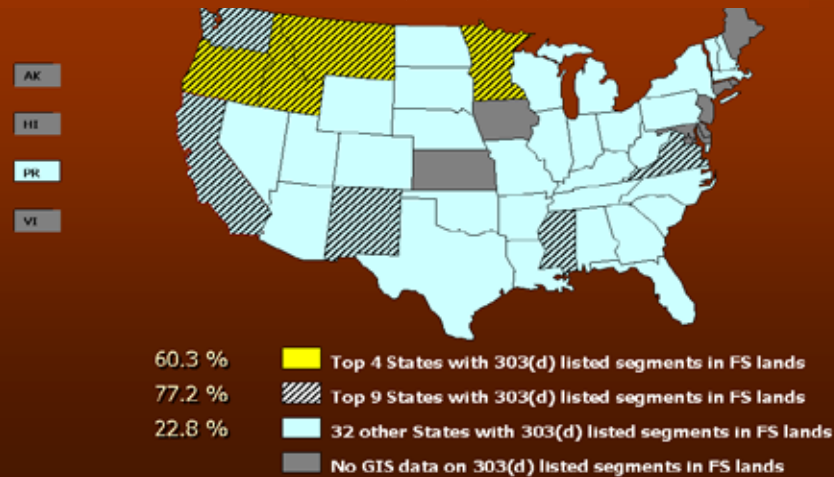


Although state water programs have tools for addressing mercury discharges from water sources under the CWA, they need to work closely with air, waste and toxics programs to address other sources. The mix of long-distance and local sources makes it difficult in some waterbodies to achieve water quality standards. However, progress is being made — more than 6,600 waterbodies in 26 states and the District of Columbia now have approved mercury TMDLs. In addition, a number of states are moving ahead to address mercury sources within their control through comprehensive mercury reduction programs. For more information, visit www.epa.gov/owow/tmdl/mercury/. (Contact: Ruth Chemerys, 202-566-1216)

*Cumulative Number of Impaired Water Clean-up Plans
(TMDLs) Completed since 1996*



Impaired Waters on National Forest System Lands (2005)



Federal Agency Partnerships Accelerate Restoration Efforts on Impaired Waters

The federal government owns about 672 million acres—close to 30 percent—of the 2.27 billion acres of land in the United States. Four agencies administer about 94 percent of these federal lands, including the United States Forest Service (USFS) (28.7 percent), United States Fish and Wildlife Service (USFWS) (14.2 percent), National Park Service (11.8 percent) and Bureau of Land Management (38.9 percent). Recognizing a tremendous opportunity to enhance watershed restoration efforts, OWOW initiated new partnerships with land management agencies. These efforts complement the missions of the agencies and support several statutory mandates. As a first step, OWOW worked with the agencies to determine the extent of impaired waters and identify leading causes of pollution. For example, a 2005 analysis showed that about eight percent of all water quality impairments nationally are on or near National Forest System lands. Leading causes of impairments include elevated temperatures, excess sediment and habitat modification. As a direct response to this finding, EPA's Office of Water and the USFS signed a Memorandum of Agreement in September 2007 to address polluted waters on NFS lands (www.epa.gov/owow/tmdl/usfsepamoa). In 2008, as part of first-year actions, OWOW and USFS initiated multiple pilot projects in five states to advance innovative watershed cleanup plans or Total Maximum Daily Loads (TMDLs) and TMDL alternative approaches that address the leading causes of impairments.

In 2008, OWOW began a national assessment with the USFWS and U.S. Geological Survey to identify the extent and type of impairments in or near National Wildlife Refuges, Hatcheries, Waterfowl Protection Areas and Wetland Management Districts. Assessments of impaired waters on military properties have been provided to the Department of Defense. OWOW also partnered with the Office of Surface Mining, USFWS and states in identifying where abandoned mine lands, impaired waters and fisheries intersect in the middle Atlantic region to better coordinate all the agencies' restoration programs. Discussions with other agencies are now underway to build on more successful partnerships. (Contact: Eric Monschein, 202-566-1547 or Doug Norton, 202-566-1221)

CHAPTER TWO

Protecting and Restoring Wetlands and Natural Habitats

Protecting, sustaining and restoring the health of natural habitats and aquatic ecosystems is a major objective in EPA's Strategic Plan. As part of this goal, the Agency is committed to increasing the quantity and quality of wetlands, which play a vital role in fish and wildlife habitat, along with other critical functions and values. Wetlands also filter pollutants, recharge water supplies and reduce flood risks. In addition, wetlands provide recreational opportunities, aesthetic benefits and places for research and education.

OWOW Programs that Support Wetlands and Habitat Goals

The Five-Star Restoration Program

The Five-Star Restoration Program brings together students, conservation corps, other youth groups, citizen groups, corporations, landowners and government agencies to provide environmental education and training through projects that restore wetlands and streams. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects. Funding levels are modest, from \$5,000 to \$20,000. However, when combined with the contributions of partners, projects that make a meaningful contribution to communities become possible.

The National Estuary Program

The National Estuary Program (NEP) is a very successful community-based program designed to restore and maintain the ecological integrity of estuaries of national significance. There are 28 NEPs, each with a director and staff, working with local stakeholders to improve the health of their estuary — its waters, habitats and living resources.



The Tampa Bay National Estuary Program involves the community in a coastal restoration effort.



National Fish Habitat Action Plan Leverages New Partners

For the past two years, OWOW has staffed EPA's participation in the National Fish Habitat Action Plan (NFHAP) and fostered EPA collaboration in several NFHAP regional partnerships. NFHAP is a comprehensive national, public/private partnering strategy created by USFWS to assess, restore and protect the nation's fish habitats and maximize the impact of fish habitat conservation dollars on the ground, all to safeguard the economic value of fisheries as well as the interests of the 32 million Americans who fish each year. Under NFHAP, numerous federal agencies, states and private interests are building regional partnerships that are addressing the nation's biggest fish habitat problems and maintaining the benefits of fish resources. During 2008, private interests in NFHAP successfully introduced draft fish habitat legislation, and federal participants drafted a proposed executive order and a national assessment of fish habitat. (Contact: Doug Norton, 202-566-1221)



Clean Water Act §404 Program

Clean Water Act §404 establishes a permit program to regulate discharges of dredged or fill material into waters, including wetlands, of the United States. §404 outlines specific and coordinated responsibilities for both EPA and the U.S. Army Corps of Engineers (Corps). EPA is required, in conjunction with the Corps, to establish environmental standards for reviewing permit applications for activities that would fill wetlands for residential development, roads, levees, and other projects.

The Corps administers the permit program, processing applications in accordance with EPA and Corps' environmental standards, and issuing permits, where appropriate, after notice and an opportunity for public comment. Both EPA and the Corps have enforcement responsibility and routinely coordinate the review of permit applications to ensure that permit decisions are made in a timely manner, while providing effective protection for human health and environmental quality.

EPA and Corps Issue Revised Guidance Clarifying "Waters of the United States"

In December 2008, EPA and the Corps issued revised guidance clarifying the scope of "waters of the United States" protected under the CWA §404 program. This guidance replaces guidance issued in 2007, which followed the U.S. Supreme Court decision in *Rapanos vs. United States*. After the 2007 guidance was issued, EPA received more than 66,000 public comments. OWOW coordinated review and summary of those public comments, along with an analysis of field experiences to make conclusions and clarifications on three key issues. As a result, the revised Rapanos Guidance further clarifies the concepts of traditional navigable waters and adjacency, and refines the concept of a relevant reach. Based on initial feedback, the revised guidance will increase consistency and speed of CWA jurisdictional determinations. For more information, visit www.epa.gov/owow/wetlands/guidance/CWAwaters.html. (Contact: Donna Downing, 202-566-1367)

Yazoo CWA 404(c) Veto Protects More Than 67,000 Acres of Mississippi Wetlands

In 2008, EPA exercised one of the strongest legal authorities available for wetlands protection under the CWA when it issued a §404(c) veto of the Yazoo Backwater Pumps project in the Mississippi Delta. Under the CWA, EPA can prohibit, restrict or deny using waters of the United States as a disposal site for fill material when it determines it will have an unacceptable effect on municipal water supplies, shellfish beds and fishery areas, wildlife or recreational areas. The Yazoo Pumps §404(c) Final Determination, signed in August, 2008, will protect over 67,000 acres of some of the nation's most valuable water resources, including critical fish and wildlife habitat. EPA concluded that the proposed project would have resulted in unacceptable damage to these valuable resources that are used for wildlife, economic and recreational purposes. EPA has used this CWA authority only 12 times since the law was passed in 1972. (Contact: Tanya Code, 202-566-1063)

New Mitigation Rule Focuses on Science, Innovation and Ecological Results

In March, 2008, EPA and the U.S. Army Corps of Engineers (the Corps) issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams and other waters of the U.S. under §404 of the Clean Water Act. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area, expand public participation in compensatory mitigation decision making and increase the efficiency and predictability of the mitigation project review process. In addition, the new wetlands compensatory mitigation standards emphasize best available science, promote innovation and focus on results. This rule follows the recommendations of the National Research Council by establishing equivalent, effective standards for all forms of wetland replacement projects under the Clean Water Act. (Contact: Palmer Hough, 202-566-1374)



The new wetlands rule will improve compensatory mitigation when wetlands are drained or filled.

Girl Scout Water Drop Patch Project Receives a Facelift

In March 2008, OWOW partnered with the Girl Scouts of the USA to update and reprint the popular Water Drop Patch Project. The patch manual now aligns to the new Girl Scout Leadership Experience. It is divided into grade-level, age-appropriate activities suitable for adult's use with Girl Scout Brownies through Ambassadors (grades 2-12). New and expanded girl-led, learning by doing and cooperative learning activities help Girl Scouts discover, connect and take action. This project is nationally recognized under Linking Girls to the Land (LGTTL). Thanks to LGTTL, 35,000 girls each year work collaboratively with federal natural resource agencies. To obtain more information, visit www.epa.gov/adopt/patch. Free copies of the manual can be ordered by calling the National Service Center for Environmental Protection at 1-800-490-9198. Ask for EPA document #EPA 840-B-07-001. Patches can be ordered from the GSUSA online store or at Girl Scout council shops. (Contact: Patty Scott, 202-566-1292)



EPA Celebrates Ten Years of Wetlands Protection and Enhancement under Five-Star Grant Program

OWOW made a renewed commitment to community-based wetlands and stream restoration in 2008 by releasing a new grant for the Five-Star Wetlands Restoration Program. This marks the tenth year of OWOW support for Five-Star, which has restored over 23,000 acres of aquatic resources (wetlands, dunes and estuaries) and 130 miles of streams by engaging over 21,000 community volunteers. The National Fish and Wildlife Foundation and its partners will administer the program by providing small grants to community-based partnerships that restore wetlands and stream corridors, educate youth about their environment and foster local stewardship of water resources. With this new 4-year grant cycle, EPA is adopting a number of enhancements to strengthen the Five-Star program. These include encouraging grantees to develop sustainability plans to maintain restoration efforts over time, making it easier for grantees to share best practices and lessons learned, offering assistance for grantees in developing partnerships in a strategic manner, providing greater flexibility in funding amounts and project duration, and finding ways to develop the technical capacity of project teams. With these enhancements, the Five-Star program will provide even more inspiration for catalyzing local action and education. (Contact: Myra Price, 202-566-1225)

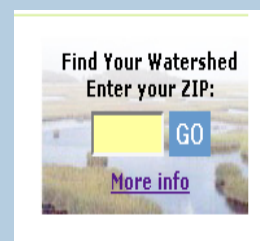
OWOW Leads the Way in Web 2.0

OWOW has been exploring the use of new Web-based tools to help communicate information and news about our programs to our partners and to the public. In 2008, OWOW proved to be at the forefront of the latest trends in Web technology.

RSS Feeds Provide Real-Time Updates

Whenever OWOW posts a significant new addition to its homepage, an RSS feed informs all of our subscribers. Anyone can elect to receive these updates in real-time. OWOW also started a *Twitter* account, where people can have updates sent to their cell phones or other Web-enabled devices. In the first two months, ninety people followed our Twitter updates (twitter.com/usepaowow).

OWOW created a “Find Your Watershed” widget that anyone can put into their own blog or Web page. By adding this widget to a Web page, visitors to that page can type in their zip code and immediately find a wealth of information about their watershed generated by EPA’s Surf Your Watershed database. For more information, visit www.epa.gov/owow.



CHAPTER THREE

Protecting and Restoring Oceans and Coasts

Keeping our ocean and coastal waters clean and safe is an important part of OWOW's mission. OWOW has a number of marine pollution prevention programs to ensure marine ecosystem health, including improving water quality on a watershed basis. In addition to the National Estuary Program, the agency's flagship watershed protection program, OWOW works to assess and reduce the air deposition of nutrients and toxic pollutants into coastal waters, a leading cause of water body impairments. With ever-increasing pressures on coastal resources from development and growth, OWOW is working with communities to promote smart growth and low impact development.

OWOW works with a variety of stakeholders to develop and implement watershed management tools, strategies and plans for coastal ecosystems in order to restore and maintain the health of coastal aquatic communities on a priority basis, including promotion of dredged material management and beneficial uses in a watershed context. In addition, as part of the Coral Reef Task Force, OWOW works to protect coral reef ecosystems using a watershed protection framework.

OWOW operates the Ocean Survey Vessel *Bold* to monitor coastal and ocean waters by conducting baseline trends and assessments (e.g., Gulf of Mexico hypoxic zone, climate change indicators, and coral reefs) and supporting ocean disposal site management. OWOW is responsible for developing the environmental criteria used in determining whether dredged material is suitable for ocean disposal. Our office works closely with our partners to improve dredged material management planning and provide guidances to promote environmental stewardship in U.S. ports. Significant environmental impacts to coastal and ocean ecosystems can occur from vessel discharges, and vessels can serve as a vector for non-indigenous species. OWOW is also developing and implementing regulations and technical guidance to control pollutants from vessels and is working in conjunction with our federal and state partners to address aquatic invasive species both domestically and internationally. Finally, our office supports international marine protection programs with other federal agencies through negotiations of international standards that address aquatic invasive species, harmful antifoulants, bilge water, dumping of wastes at sea and marine debris.



OWOW promotes the use of pumpouts and "no discharge zones" to help control pollutants from vessels.

National Estuary Program Advances Water Quality Protection Efforts in 28 Coastal Communities

The NEPs successfully leveraged EPA \$320 grant money to support the implementation of Comprehensive Conservation and Management Plans (CCMPs). These community-based watershed plans help address priority issues. Examples include:

- Reducing pollutants from stormwater runoff.
- Protecting and restoring important habitat (e.g., revegetation, mapping critical areas and working to protect manatees, salmon and other wildlife).
- Developing web-based tools and strategies for habitat protection.
- Using partnership dollars to leverage funds for restoration projects.
- Adopting long-range finance plans.
- Engaging business entities in conservation practices.
- Conducting third-party permit review of local water districts and State Department of Transportation agencies.
- Developing action plans to address groundwater and surface water use.
- Updating CCMPs to address biological production loss resulting from water diversions and invasive species.
- Promoting smart growth and green infrastructure concepts and tools.
- Providing minority high school students with hands-on field and laboratory experiences in NEP study areas.
- Developing education and outreach products such as newsletters, calendars and Web sites.



Earth Gauge™ Delivers Environmental Information on TV Weather Reports

Earth Gauge™, a free environmental newsletter produced by the National Environmental Education Foundation and funded in part by OWOW, now reaches more than 175 broadcast meteorologists in 102 media markets, reaching over 211 million local television viewers. Earth Gauge™ is designed to make it easy for weathercasters to explain the environmental implications of weather events and what viewers can do to help protect their watersheds. Other Water offices are now engaged and providing tips on water efficiency and other issues. For more information, visit www.epa.gov/owow/watershed/weather. (Contact: Patty Scott, 202-566-1292)

EPA Reinigorates Marine Debris Prevention

Marine debris is a pervasive environmental problem of increasing public concern. The issue stretches beyond the set responsibilities of any individual office or agency. Recognizing the need for a comprehensive approach, OWOW undertook projects with other EPA offices, non-governmental organizations and other federal agencies. OWOW created an EPA Marine Debris Workgroup that includes the Office of Wastewater Management; the Office of Solid Waste; the Office of Prevention, Pesticides, and Toxic Substances; and EPA Regional offices. The workgroup is developing a comprehensive approach to address the types, sources, movement and impacts of marine debris. In addition, the Interagency Marine Debris Coordinating Committee, co-chaired by EPA and National Oceanic and Atmospheric Administration, submitted a report to Congress that contains 25 recommendations to guide the federal government's strategies on marine debris, identifies the sources of marine debris, reviews the ecological and economic impacts of marine debris, and provides recommendations to reduce marine debris both domestically and internationally. The report discusses marine debris efforts, recent progress and innovative ways to address the problem. More information is available at www.epa.gov/owow/oceans/debris/index.html. (Contacts: Molly Madden, 202-566-1279 and Katherine Weiler, 202-566-1280)



Local Girl Scouts receive Water Drop Patch awards from former Assistant Administrator Ben Grumbles during the Anacostia International Coastal Cleanup event.

EPA Strengthens Ocean Dumping Management

Owow completed a number of major steps in 2008 to improve ocean dumping management. In June, EPA submitted to Congress a package of legislative changes to the Marine Protection, Research, and Sanctuaries Act to support ratification of the London Protocol, an international ocean dumping treaty. With the U.S. Army Corps of Engineers, EPA completed the first draft of the consolidated Ocean Disposal and Inland Testing Manuals to promote consistency and improve management of dredged material disposal programs. As co-chair of the National Dredging Team (NDT), EPA restructured the NDT website creating an information portal on key navigational dredging issues. EPA is also leading a review of the NDT's progress in implementing its 2003 Action Agenda to assess progress and identify any emerging issues of concern.

More information on the ocean dumping program is available at: www.epa.gov/owow/oceans/regulatory/dumpdredged/dumpdredged.html. (Contacts: Molly Madden, 202-566-1279 or Ken Potts, 202-566-1267)

Watershed Academy Webcasts Provide Training and Reduce Carbon Footprint



OWOW continues to host regular Webcasts on the latest topics in watershed management. Thanks to a new Web platform that uses state-of-the-art Internet streaming technologies, OWOW is now able to reach even larger audiences than ever before. An October Webcast on Gulf Hypoxia, which featured former Assistant Administrator for Water, Benjamin Grumbles, EPA expert Darrell Brown, and renowned hypoxia scientist Nancy Rabalais, attracted several hundred participants. The December 2008 Webcast on rain gardens drew more than 1,100 attendees. Webcasts have emerged as a very cost-effective approach for providing training while saving money. Archived versions are accessible 24-7, including podcast subscriptions from iTunes. Visit: www.epa.gov/watershedwebcasts. (Contacts: Anne Weinberg, 202-566-1207 or Patty Scott 202-566-1292)



CHAPTER FOUR

Addressing Global Climate Change in Coastal Communities

Global warming is the defining challenge of our generation. The scientific evidence for rising global temperatures has been called “unequivocal” by the United Nations Intergovernmental Panel on Climate Change. The world’s leading scientists have warned that global warming, left unchecked, will lead to rising sea levels, more frequent droughts and floods, loss of species, spreading disease and other impacts. Dealing the potential impacts on infrastructure, water supply and habitat needs to be a top priority for all federal agencies.

New Climate Change Tool Kit Available for Coastal Communities

The Climate Ready Estuaries (CRE) program is a new partnership established in 2008 among the Oceans and Coastal Protection Division, EPA’s Climate Change Division, and the National Estuary Program (NEP) to address climate change in coastal areas. This partnership will strengthen capacity in the NEPs and other coastal communities to adapt to the effects of climate change and improve coastal resiliency. Since its inception, CRE has become widely recognized for innovation and leadership.

In 2008, the CRE program unveiled its Web site, www.epa.gov/cre, to provide users with information about the importance of coastal adaptation to climate change and provide tools for adaptation. More specifically, the online toolkit features resources about coastal vulnerability, adaptation planning, smart growth, data and monitoring, and sustainable financing, serving a range of needs - from community members to coastal resource managers.

In 2008, OWOW provided targeted assistance to six NEP pilots to identify climate change vulnerabilities and develop adaptation plans. Results and lessons learned from these projects will inform future efforts and serve as a model for coastal managers to get “ready” for reducing risks and future costs associated with rising sea level and other climate change impacts. For more information, visit the CRE Web site at www.epa.gov/cre. (Contact: John Wilson, 202-566-1158)

Charlotte Harbor NEP

Charlotte Harbor National Estuary Program (CHNEP) is developing a vulnerability assessment/overview for the seven-county southwest Florida CHNEP study area. The Climate Ready Estuaries pilot program will build on this work by developing an adaptation plan for a small city within the area. The adaptation plan will address a wide variety of issues, including future scenarios, emergency response, minimization/avoidance/mitigation, building materials and design, land development regulations, fiscal policies, habitat translocations, exotic plant and animal invasion, management challenges and solutions, and variable risk.

Massachusetts Bays Program

The Massachusetts Bays Program is working with EPA to design and complete a climate change vulnerability assessment for the coastal zone of Massachusetts and Cape Cod Bay. This effort will leverage existing initiatives under the StormSmart Coasts program in the Massachusetts Office of Coastal Zone Management. Upon completion of the vulnerability assessment, the information will be incorporated into a revised Comprehensive Conservation and Management Plan (CCMP) to strengthen climate change preparation.

Piscataqua Region Estuaries Partnership

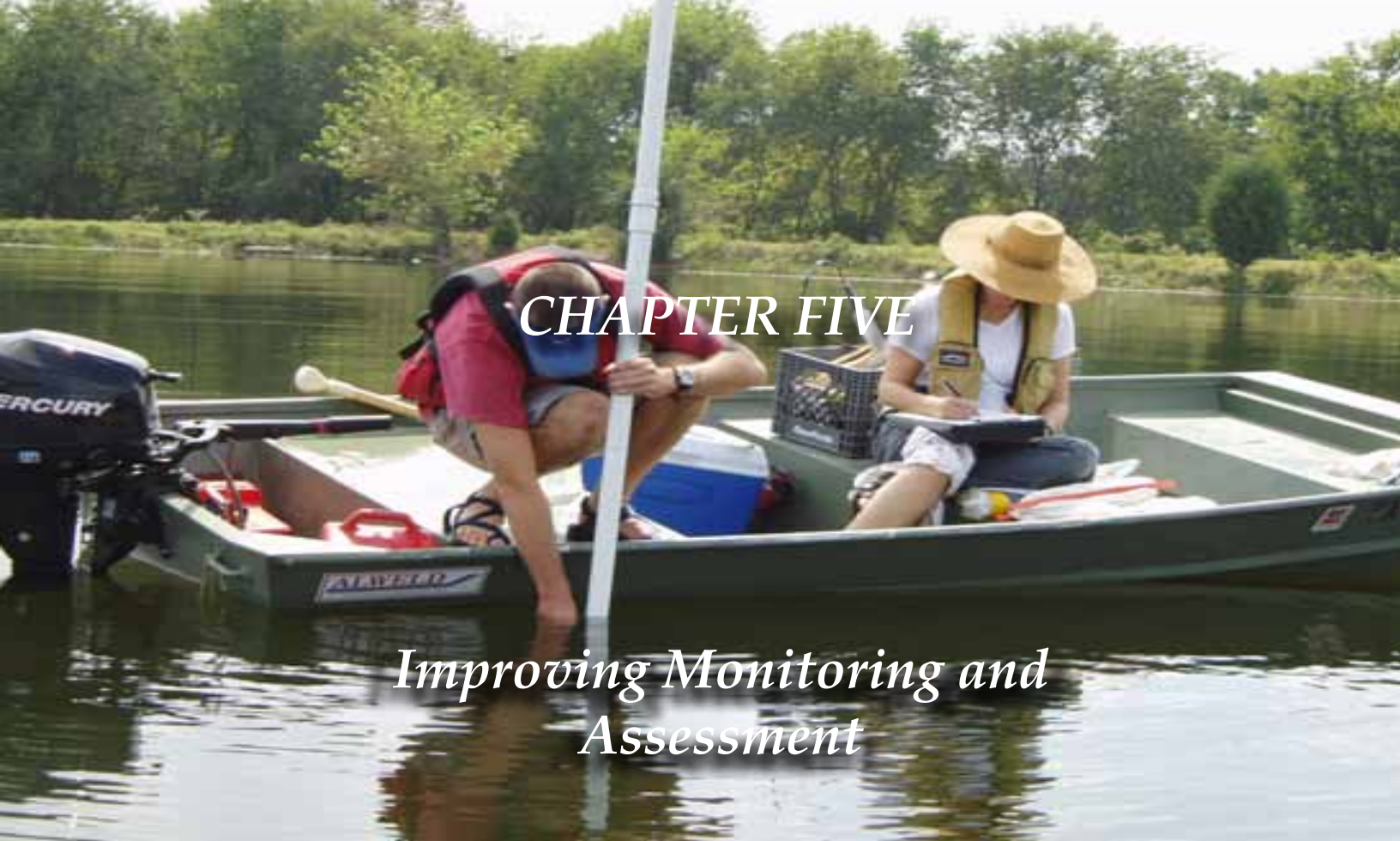
The Piscataqua Region Estuaries Partnership (PREP) will lead a geographic information systems (GIS)-based analysis of road-stream infrastructure vulnerabilities associated with projected increases in stormwater resulting from climate change and future development in the coastal Oyster River watershed. The analysis will result in the development of adaptation and mitigation strategies to be included in a 2010 Management Plan update.

Partnership for the Delaware Estuary

The Partnership for the Delaware Estuary (Partnership) will work with its many partners to begin evaluating which resources are most at risk and prioritizing what can—and should be—done to monitor, protect or otherwise benefit the most valuable and vulnerable features. The Partnership’s Climate Adaptation Project will focus on assessing vulnerability and adaptation needs for three critical “case study” resources in the Estuary: drinking water, tidal wetlands and shellfish. The final product will be an adaptation plan that will provide new guidance on monitoring, management actions and policies that have the greatest likelihood to maximize the “natural capital” of these key life-sustaining features in the Delaware Estuary and its watershed.

San Francisco Estuary Project

The San Francisco Estuary Project’s (SFEP) 2007 CCMP update targeted the assessment of and response to potential impacts of climate change. The San Francisco Bay Conservation and Development Commission (BCDC) has taken a lead role in identifying and planning for these threats, completing an assessment of the impacts of sea level rise. With BCDC and other partners, SFEP intends to work with EPA to complete a vulnerability assessment for other climate-related impacts and produce an adaptation plan for the estuary.



CHAPTER FIVE

Improving Monitoring and Assessment

Scientifically defensible data are essential in the Information Age. Water quality monitoring and assessment programs—the essential underpinning of all aspects of the watershed approach—are critical for establishing priorities, measuring success and following adaptive management strategies. In 2008, OWOW made significant strides toward improving the accessibility, comprehensiveness, and quality of information on the condition of the nation's waters.

Water Quality Assessment and Total Maximum Daily Loads Information (ATTAINS)

In 2008, EPA released a new Web site where water quality managers and the public can go to view a wide range of state-reported water quality information. This Web site, known as ATTAINS, combines water quality assessment information reported by the states under §305(b) of the Clean Water Act, along with impaired waters information reported under §303(d). By combining these two databases (the National Assessment Database and the National Total Maximum Daily Load (TMDL) Tracking System), ATTAINS gives the “full story” showing which waters have been assessed, which are impaired and which are being (or have been) restored. Users can access and download dynamic, continuously updated tables and charts that summarize state-reported information for the nation as a whole, for individual states and waters, and for the ten EPA Regions. The Web site also provides information that helps EPA track our strategic planning goals. Visit ATTAINS at www.epa.gov/waters/ir. (Contacts: Shera Reems, 202-566-1264 or Wendy Reid, 202-566-1705)

National Surveys at Full Steam

OWOW is working with the states and tribes to conduct a series of probability-based surveys (i.e., surveys based on a representative, random sample) of major U.S. aquatic resources to identify national priorities and evaluate the effectiveness of water quality protection efforts. These ambitious, unprecedented national surveys of water quality demand an exceptional amount of coordination and scientific data collection and analysis by EPA and its state and tribal partners. The surveys follow the Wadeable Streams Assessment, completed in 2006, which is available at epa.gov/owow/streamssurvey. (Contact: Susan Holdsworth 202-566-1187)



Ellen Tarquinio of OWOW measuring a smallmouth bass in Delaware as part of a stream/river sampling in summer 2008.

- **A National Lakes Assessment** is planned for release in 2009. In 2008, labs also processed over 10,000 samples collected at 909 lakes in 2007. Sample results are undergoing quality review and analysis.
- **A National Rivers and Streams Assessment** report will be issued in 2011. In 2008, EPA and its partners in the states successfully completed the first of two years of field sampling. More than sixty field crews sampled nearly 850 sites nationwide. Among other benefits, this 2011 report will allow EPA to track progress in meeting our strategic planning goals for wadable streams.
- **A National Coastal Assessment** will be released in 2010. In June 2008, OWOW sponsored a national planning meeting with state representatives, where indicators of coastal quality were selected.
- **A National Wetland Condition Assessment** will be issued in 2013 (survey data will be collected in 2011). Initial decisions have been made on condition indicators and assessment methods that can be applied across a wide range of wetland types. EPA is also coordinating a number of regional pilot projects to test wetland field protocols and indicators.

Enhancing the Use and Sharing of Water Quality Data over the Internet

In 2007, OWOW released version 1.0 of the Water Quality Exchange, or WQX. WQX uses new Web technology to make it easier for states, tribes, watershed groups and other users to submit water quality data to the National STORET Data Warehouse, EPA's national repository for water quality data. In 2008, OWOW released an enhanced version, WQX v2.0, which allows for the sharing of biological taxonomic results and habitat assessment data. Essentially, WQX v2.0 now handles a complete suite of water quality monitoring assessment data (physical, chemical, biological and habitat)—making it easier for water quality managers to understand conditions and make decisions.



OWOW continues to expand the community of data users by providing training and technical support to states and tribes. Web Services, a capability that allows users to incorporate data from the National STORET Data Warehouse into their own specialized applications, allows linkages to other water program data systems including ATTAINS. The STORET team also worked closely with the U.S. Geological Survey to ensure that the Survey's water data system generates data in compatible formats. In addition, OWOW has just released WQX Web, a new tool that makes it easier for small organizations without more formal systems to submit data. For more information on WQX, visit www.epa.gov/storet/wqx.html (Contact Kristen Gunthardt, 202-566-1194)

EPA Completes Cruise Ship Discharge Assessment Report

As the cruise industry continues to expand, there is growing concern over the potential environmental impacts resulting from ship discharges. In response, EPA examined five primary waste streams from cruise ships. In 2007, OWOW released a draft Assessment Report covering sewage, graywater, oily bilge water, solid waste and hazardous waste. After reviewing public comments on the draft report, in 2008 EPA issued a completed Assessment Report which included options and alternatives to address the primary cruise ship waste streams.

As part of EPA's ongoing evaluation of environmental impacts due to vessel discharges, OWOW partnered with the Alaska Department of Environmental Conservation to conduct studies in Skagway Harbor, Alaska during July of 2008. The *OSV Bold*, EPA's ocean survey vessel, served as the scientific platform used to conduct these studies: near-field dilution of treated sewage and graywater discharge plumes from stationary cruise ships, experiments to determine if phytoplankton growth in Skagway Harbor is limited by nutrients, and the examination of nitrogen uptake by seaweed to assess the relative importance of natural and anthropogenic sources of nutrient inputs. More information is available at: www.epa.gov/owow/oceans/cruise_ships/. (Contacts: Laura Johnson, 202-566-1273 or Brian Rappoli, 202-566-1548)



EPA's Ocean Survey Vessel, OSV Bold, Provides Critical Support for Ocean Programs

As part of a very active year, the *OSV Bold*, EPA's ocean survey vessel, provided monitoring support at 20 ocean dredged material disposal sites. For the first time, the ship provided primary support for West Coast programs. The *Bold* arrived in San Diego, California in March 2008, and performed missions as far north as Skagway, Alaska. The ship supported six surveys and one open house event for EPA Region 9, and eight surveys and six open house events in Region 10. The *Bold* returned to the East Coast in October and conducted three surveys and one open house event for Region 4. The ship's missions were quite varied and included cruise ship discharge studies in Alaska; sediment work on PCBs and dioxins in Puget Sound; and water quality assessments along the Washington and Oregon coasts. (Contact: Ken Potts, 202-566-1267)



The Bold, EPA's ocean survey vessel, monitors our nation's oceans and coastal waters, including dredged material disposal sites.

CHAPTER SIX

Improving Environmental Performance and Program Management

National Estuary Program Implementation Reviews and Programmatic Evaluation

In June 2008, OWOW released the National Estuary Program (NEP) Implementation Review Report. The report summarizes NEP accomplishments documented during EPA's 2004 - 2006 Implementation Reviews of the 28 NEPs. Also, it demonstrates that the Implementation Reviews served as an effective tool for EPA to assess NEP strengths and challenges. For example, the ecosystem protection projects and education and outreach efforts were found to be consistent strengths, while funding and organizational structure were found to be consistent challenges. The report can be accessed at www.epa.gov/owow/estuaries.



In November 2008, OWOW completed nine NEP Program Evaluations (PE); all nine programs passed. EPA provided each NEP with a final letter with details about strengths, challenges and recommendations for improvements. A report summarizing the results of the 2008 PE process is expected to be issued in 2009. (Contact Noemi Mercado, 202-566-1251)

Targeted Watersheds Grants Programmatic Evaluation

After issuing three rounds of grants to 52 grantees, EPA conducted a programmatic evaluation of the Targeted Watersheds Grant (TWG) Program to assess its overall effectiveness. The evaluation examined results to date, including success in building on public/private watershed partnerships, achieving environmental results and encouraging innovative approaches. Results indicated that grantees are achieving environmental, social and organizational results and are communicating their successes to other organizations and the public. The following factors most influenced successful watershed project implementation:



- Strong partnerships.
- Access to funding.
- Stakeholder and community support and organization.
- Administrative and technical capacity.

Grantees reported that the most valuable aspects of the TWG program include funding, which grantees often leverage for additional financial support, and programmatic assistance from EPA staff. OWOW intends to use the results of the TWG evaluation to improve the program, as well as grants programs across OWOW. OWOW will continue to assist grantees in improving their output and outcome metrics, including the more difficult challenge of measuring social and organizational outcomes. (Contact: Erin Collard, 202-566-2655)

Christina River Basin Clean Water Partnership Exceeds TWG Program Goals

The Christina River Basin Clean Water Partnership in Pennsylvania and Delaware succeeded in significantly reducing stormwater pollution. Using a \$1 million EPA Targeted Watersheds Grant, the partnership reduced the harmful effects of runoff on drinking water supplies, recreation, fisheries, and wildlife. For every federal dollar invested, the partnership leveraged more than two dollars, allowing them to exceed the original goals, some by more than 50 percent. Accomplishments include over 10,000 feet of stream restoration, 8,000 feet of stream fencing and nutrient management control plans on over 1,000 acres. The final grant report includes a complete description of the projects.



Rathbun Lake

Iowa's Rathbun Lake Water Alliance (RLWA), a 2003 TWG grantee, has realized success through an innovative approach to Best Management Practices (BMP). RLWA used GIS modeling to determine the agricultural lands in the watershed where BMPs would achieve the largest reduction in phosphorus and sediment at the lowest cost. Outreach and technical assistance were focused in these areas. As a result of their targeted approach, costs were reduced by 25 percent and participation among agricultural producers in these areas was 70 percent. For more information, visit www.epa.gov/twg.

Enhancing State and Tribal Wetland Management Programs

OWOW's Wetlands Division continues to enhance support for state and tribal wetland programs, building on recommendations from a 2007 third-party evaluation of the Wetland Program Development Grants (WPDGs). In FY08 the division launched the Enhancing State and Tribal Programs (ESTP) Initiative, a sustained effort to better align EPA's financial, planning and technical resources to enhance state and tribal wetlands programs, especially those that are in earlier stages of development. Key components of the ESTP are to:

- Provide more specificity about wetland program development actions and benchmarks in a format useful to states/tribes that are still defining their programs. In FY08 the division consulted with states and tribes to develop the Wetlands Core Elements Framework (CEF). For each of the four elements of a wetlands program – monitoring and assessment, voluntary restoration and protection, regulatory actions and wetland water quality standards - the CEF describes a menu of program objectives, actions and milestones that states/tribes can choose from to chart their own course for program development.
- Align Wetland Grants with program-building activities in the Wetlands CEF. To maximize the effectiveness of grant funds, the Wetlands Division plans to closely align future WPDG decisions with the program development actions in the Wetlands CEF beginning in FY10.
- Assist states and tribes to develop other sources of program funding and support. Recognizing that WPDGs are a critical but limited resource for state and tribal wetland programs, we are assisting states/tribes to leverage and develop other sources of program support. An October 2008 webinar introduced about 70 participants to the basics of sustainable finance; this curriculum and outreach will be expanded in FY09.
- Provide targeted technical assistance. The Wetlands CEF provides an excellent framework for better understanding where states/tribes are focusing their program development efforts. Beginning in FY09, we will use this information to develop more targeted technical assistance that directly addresses the needs of emerging state and tribal wetland programs.

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United States Environmental Protection Agency
Office of Wetlands, Oceans and Watersheds,
1200 Pennsylvania Avenue, N.W. (4501T)
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