

EPA Watershed Events



A Bulletin on Sustaining Water Resources and Ecosystems

In This Issue...

This issue of *Watershed Events* features stories about outstanding citizen-based efforts to protect watersheds. Many of these efforts embody the goals of EPA's Adopt Your Watershed program. The goal of the program is to increase stewardship for the Nation's water resources and to partner with groups not traditionally involved in water resource issues.

On The Inside...

National News

Clean Water Action Plan Update	1
Fourteen Rivers Designated	
American Heritage Rivers	4
New Highway Bill Boosts	
Environmental Spending	4
STORET Modernization	16

Adopt-Your-Watershed Success Stories

Housatonic River, MA	5
Flint Creek, AL	7
Senior Volunteer Monitors, PA	8
Anacostia River, MD	9
Coastal Cleanups, WA	9
Lake Keowee, SC	10
Assabet River, MA	11
Rivanna River, VA	11
Adopt-A-Watershed Curriculum,	
CO & CA	12
Students Give Water A Hand, GA ...	12
Chelsea Creek, MA	13

New Resources	14
Events	15

Clean Water Action Plan Update

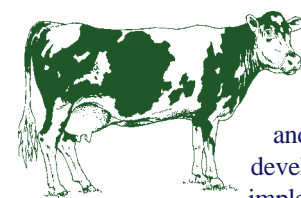
Draft Animal Feeding Operation Strategy, Unified Watershed Assessments, and Watershed Assistance Grants Lead the News on Clean Water Action Plan Implementation

Since the Clean Water Action Plan was released by President Clinton and Vice President Gore in February, several significant milestones have been reached. For example, the Environmental Protection Agency (EPA) and the United States Department of Agriculture (USDA) released a joint draft strategy to address pollution from animal feeding operations (AFOs) on September 16. Also, all states submitted final Unified Watershed Assessments in October. Below are summaries of some key CWAP milestones:

Joint Animal Feeding Operation

Strategy: AFOs generate large amounts of manure, which contain nutrients (nitrogen and phosphorus) as well as pathogens, heavy metals, and antibiotics. If not properly managed, AFOs can pose serious threats to water quality and public health. The draft strategy proposes a national performance expectation for all AFOs to develop and implement Comprehensive Nutrient Management Plan (CNMPs). CNMPs would establish clearly defined nutrient management goals and address feed management, manure handling and storage, land application of manure, record keeping, and other manure utilization options.

The vast majority of AFOs would develop and implement CNMPs through voluntary programs, while high risk operations would be required to obtain permits through the Clean Water Act permit program implemented by the states and EPA. A key component of the strategy is the identification of technical



and financial assistance to help AFO owners and operators develop and implement sound CNMPs. USDA

and EPA are accepting public comments through January 15, 1999 on the draft strategy, which is available on the Internet at www.epa.gov/cleanwater/af/.

Final Unified Watershed Assessments:

The Plan calls upon states and tribes to work in cooperation with federal, interstate, and local agencies, watershed-based organizations, and the public to identify watersheds most in need of restoration and to develop restoration action strategies. In June,

See CWAP, page 2

Watershed Events

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Watershed Events provides updated and timely information to professionals and others interested in the development and implementation of the watershed approach and in achieving watershed goals. The watershed approach focuses on mitigating the primary threats to ecosystem and human health and involving stakeholders to take action in an integrated, holistic manner. Please direct any questions or comments to:

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CWAP from page 1

EPA, USDA, and other federal agencies developed a framework to assist states and tribes in preparing unified watershed assessments (UWAs), the first step in identifying watersheds in need of action. States were encouraged to draw from existing water quality data and piece together what this information says about overall watershed conditions.

After receiving feedback on drafts from an interagency workgroup and the public, 56 states and territories, the District of Columbia, and 13 tribes submitted final UWAs in October. The next step will be to map the results of these UWAs. A large part of the new resources proposed by the President's Fiscal Year 1999 budget will be used to implement the resulting restoration strategies. For more information, visit EPA's website at www.epa.gov/owow/wtr1/cleanwater/uwafinal/uwa.html.

Beach Action Plan: This five-year comprehensive plan was announced in June at the National Oceans Conference in Monterey, California. The Plan outlines improvements to beach monitoring programs, standards, public access, and increased research. In addition, EPA released a "Beach Watch" site on



water quality and potential health risks.

State Coastal Polluted Runoff Control Programs: The Plan calls for improved efforts to address polluted runoff in sensitive coastal watersheds. The National Oceanic and Atmospheric Agency (NOAA) and EPA conditionally approved all 29 of the submitted State Coastal Nonpoint Pollution Control Programs in June 1998. All programs are to be fully approved by December 1999 with appropriate state-enforceable policies.

Conservation Reserve Enhancement Program (CREP) Guidance: The Farm Services Agency released final guidelines on the CREP program, a state-federal conservation partnership program targeted to address significant water quality, soil erosion, and wildlife habitat issues related to agricultural land use. The program uses financial incentives to encourage farmers and ranchers to voluntarily enroll in contracts of 10 to 15 years in duration to remove lands from agricultural production. For more

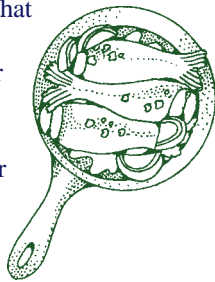
\$260,000 Available in Watershed Assistance Grants

River Network will make grants to local watershed partnerships to support their organizational development and long-term effectiveness. A total of \$260,000 will be distributed in grants of \$2,000 to \$30,000 in 1999. The purpose of this pilot program is to support local communities as they work to protect and restore their watersheds.

Grantees will be selected by River Network with the help of an advisory committee comprising representatives from local and tribal governments, industry, agriculture, and experts in watershed management. Applications for the Watershed Assistance Grants Program will be available from River Network in mid-November. Applications will be due January 15, 1999. River Network is able to provide this program thanks to financial support from EPA. For additional information, call Kathy Luscher at 800-423-6747.

information, visit the CREP website at www.fsa.usda.gov/dafp/cepd/crep/crephome.htm.

Contaminated Sediment Strategy: In April, EPA released a Contaminated Sediment Management Strategy that summarizes the Agency's understanding of the extent and severity of sediment contamination and describes a framework to reduce ecological and human health risks posed by sediment contamination. EPA estimates that 10 percent of the Nation's lakes, rivers, and bays have sediment contaminated with toxic chemicals that can kill fish living in those waters or impair the health of people and wildlife who eat contaminated fish. For more information, visit EPA's website at www.epa.gov/OST/cs/stratndx.html.



Plan for Wetlands Status and Trends

Reporting: The interagency group on wetlands issued a final plan for developing a single, improved wetlands status and trends report. This report should be issued by 2000. The leads for this project are the White House and the Wetlands Working Group.

Fish Consumption Safety: In July, EPA sent letters concerning fish consumption advisories to state environmental, public health, and natural resource management agencies and to all tribes that operate the national water program. The letters emphasize the importance of a risk-based fish consumption advisory program and asks states and tribes to compare their existing fish advisory programs with EPA's National Guidance on Fish Consumption Advisories.

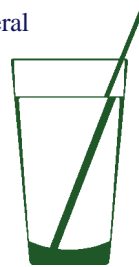
Nutrient Assessment Strategy: In June 1998, EPA released a national strategy for the development of water quality criteria and standards for nutrients. CWAP calls for EPA to publish criteria (i.e., scientific information concerning harmful levels of a pollutant) for nutrients by the year 2000.

These criteria will be used by states to develop numeric nutrient provisions of state water quality standards. The new strategy describes the process for developing criteria that are appropriate for various types of waterbodies and different regions of the country.

Source Water Assessment Agreement:

A key element of CWAP is the integration of public health and aquatic ecosystem goals. Under an agreement to be signed later this year, 10 federal agencies will commit to helping states, tribes, and local communities design and implement their drinking water source assessment and protection programs within a watershed framework. The State Source Water Assessment and Protection Program, developed under the mandate of the Safe Drinking Water Act Amendments of 1996, requires all states to complete assessments of their public drinking water supplies to determine susceptibility to potentially significant contaminant sources within their source water areas. The federal agencies will direct program authorities, technical assistance, data, and enforcement resources to help integrate source water goals with watershed restoration priorities. The agencies will agree to:

- Create partnerships between federal and state regional and field offices.
- Improve access to data held by the different agencies and work cooperatively to develop a clearinghouse for information on these databases.
- Coordinate drinking water source assessment and protection efforts with related CWAP action items.
- Develop performance measures.



National Contingency Plan for

Harmful Algal Blooms: The National Oceanic and Atmospheric Administration (NOAA), EPA, the Food and Drug Administration, the U. S. Geological Survey, and the Centers for Disease Control, are developing a detailed federal response plan for harmful algal blooms and other major events in coastal waters. NOAA, the coordinating agency, has received comments from state and federal agencies and is working to finalize the plan this fall. The plan provides individual states with federal expertise and support to immediately respond to *Pfiesteria* outbreaks, fish lesions, and fish kills, and to associate threats to public health.

National Harmful Algal Blooms Research and Monitoring Strategy:

This strategy serves as a framework to coordinate all scientific and management activities related to *Pfiesteria*-like organisms. Implementation of the strategy is comprised of many ongoing efforts, including the completion of the National Contingency Plan for Harmful Algal Blooms and the operation of the multi-agency program on the Ecology and Oceanography of Harmful Algal Blooms (ECOHAB). Research funding through ECOHAB is currently being dispersed and funding opportunities for next year will be announced later this fall.

At press time, Congress had just completed work on a Fiscal Year 1999 omnibus appropriations bill. In last minute negotiations, CWAP received higher funding levels than proposed by either the House or Senate. Additional information about the budget and major CWAP milestones can be found at www.cleanwater.gov/.

What Are Tribal Nations Doing to Protect Their Watersheds?

Find out in the next issue of *Watershed Events*. The spring issue will highlight tribal watershed protection efforts. If you'd like to submit a story on what your tribe is doing to protect its water resources, contact John McShane at (202) 260-0409.

Fourteen Rivers Designated American Heritage Rivers

Some flow through pristine forests. Others carry traffic to large commercial ports. Some have already undergone restoration; still others face significant challenges. But together, the 14 American Heritage Rivers selected in July reflect the extraordinary diversity that characterizes America's rivers. The American Heritage Rivers Initiative recognizes and rewards voluntary community-based efforts to restore and protect the environmental, economic, cultural, and historic values of the country's rivers. In the American Heritage Rivers Initiative leadership is key.

The selection, announced by the President and Vice President, means that, over the next five years, communities along the rivers will carry out their own plans for revitalizing their rivers, aided by a "river navigator," who is supported by the federal government and selected with local input. Each river navigator will help the community identify existing federal programs and resources that can help carry out their action plans.

The action plans developed for the rivers seek to, in Vice President Gore's words, "clean up America's rivers, create new jobs, and strengthen the communities that

surround them for generations to come." But the 14 designated rivers are not the only waterways that will benefit from the initiative. Through the American Heritage Rivers website, all communities can get information on flood events, population change, road networks, the condition of water resources, and partnerships already at work in their area.

For more information, visit the American Heritage Rivers Homepage at www.epa.gov/rivers or contact the American Heritage Rivers Hotline, (888) 407-4837.

New Highway Bill Boosts Environmental Spending

The Transportation Equity Act for the 21st Century (TEA-21) is the largest ever public works bill. It authorizes some new programs and increases funding for many of the landmark provisions in the 1991 Intermodal Surface Transportation Equity Act (ISTEA). ISTEA was the first transportation bill to make protecting the environment a top priority. TEA-21, which was signed into law by President Clinton on June 9, 1998, provides significant resources to help protect and improve water quality. However, while TEA-21 expands eligibility for environmental projects, none of the provisions in the new law *require* states to allocate money to such

projects. Demonstrating the value of water, wetland and habitat restoration projects to state and local highway officials is a critical step in securing funding under TEA-21.

TEA-21 preserves ISTEA's emphasis on the cultural, aesthetic, and environmental aspects of the transportation

system by continuing the "Transportation Enhancements" program. Under TEA-21, 10 percent of Surface Transportation Program (STP) funds—\$3.3 billion over six years—are set-aside for transportation enhancements, a 40 percent increase over ISTEA. A wide array of environmental and water quality improvement projects are eligible for enhancements funding, including water pollution abatement and mitigation projects.

In addition, a new provision in TEA-21 provides that up to 20 percent of the cost of a transportation facility reconstruction, rehabilitation, resurfacing, or restoration project under STP may be used to address water pollution or environmental degradation associated with past or current highway projects. This equates to \$6.7 billion in potential STP funds over six years that could be used for the retrofit or construction of stormwater treatment systems, nonpoint source best management practices or riparian and wetlands restoration projects. Finally, states may use either STP or National Highway System (NHS) funds for wetlands projects designed to offset impacts from past transportation projects even if there is no current federal-aid project taking place in that vicinity.

A new pilot program, the Transportation and Community and System Preservation Pilot (TCSPP), will encourage innovative approaches to transportation and community planning. States, local governments, and metropolitan planning organizations are eligible for grants to make communities more sustainable. Funding for the TCSPP is \$20 million in FY 1999 and \$25 million per year for FYs 2000 through 2003. The Federal Highway Administration is accepting letters of intent from potential grantees for FY 1999 funds through November 15. For more information, see the September 16 Federal Register Notice, which is available on the Department of Transportation's website at www.fhwa.dot.gov/tea21/fedreg3.htm. Also visit www.epa.gov/owow/tea/ for more information on water-related provisions in TEA-21.

American Heritage Rivers

Blackstone and Woonasquatucket Rivers (MA, RI)
 Connecticut River (CT, MA, NH, VT)
 Cuyahoga River (OH)
 Detroit River (MI)
 Hanalei River (HI)
 Hudson River (NY)
 Upper Mississippi River (IA, IL, MN, MO, WI)
 Lower Mississippi River (LA, TN)
 New River (NC, VA, WV)
 Potomac River (DC, MD, PA, VA, WV)
 Rio Grande (TX)
 St. Johns River (FL)
 Upper Susquehanna and Lackawanna Rivers (PA)
 Willamette River (OR)

Adopt-Your-Watershed

The theme of this issue is “Adopt Your Watershed.” Featured are stories about volunteers—students, senior citizens, sportsmen and others—who are making a difference. EPA would like to applaud each of these groups and the thousands of other groups that are working across the Nation to protect and restore the Nation’s water resources. We hope others will be inspired by your stories.

Last fall, as part of the Clean Water Act 25th Anniversary Celebration, EPA launched the “Adopt Your Watershed” campaign. Through Adopt Your Watershed, EPA is challenging citizens and organizations to participate in locally based watershed projects. Examples might include volunteering to monitor water quality, plant trees along eroding stream banks, conduct stream cleanups, or educate the community about water pollution.

To provide the foundation for Adopt Your Watershed, EPA has created a voluntary, national catalog of more than 4,000 watershed groups and other organizations working to protect local watersheds. Developed in partnership with River Network, the Conservation Technology Information Center (CTIC), the Center for Marine Conservation, and For the Sake of the Salmon, the catalog is accessible through EPA’s Surf Your Watershed (www.epa.gov/surf) and Adopt Your Watershed homepages (www.epa.gov/surf/adopt). Citizens can now “point and click” to find out about local environmental conditions as well as a listing of watershed groups and organizations active in their community.

EPA is now working to encourage organizations not traditionally involved in water resources issues to become more involved in watershed protection efforts.

The National Parent Teachers Association (PTA) is one of the first organizations to join as a partner in this campaign, and many local PTAs participated in Earth Day events and activities. Most recently, EPA has been working with the Girl Scouts of the National Capital Area on a Patch Program to encourage scout participation in local watershed activities. These are just two examples of the types of partnerships EPA is pursuing with the campaign.

Certificates of Appreciation are available to groups that “adopt” their watershed. Groups are simply asked to register in the Adopt Your Watershed database,



demonstrate an “ongoing commitment” to their local watershed, and describe their activities in 100 words or less. Application forms are available at www.epa.gov/surf/adopt or by sending an e-mail to scott.patricia@epamail.epa.gov.

Bringing Good Things Back to Life: The Housatonic River Initiative

Adapted from an article by Erik Bruun and H. Emerson Blake in the Spring 1998 issue of Orion Afield.

In September of 1992, a ragtag group of 50 citizens gathered at the West Stockbridge Sportsman’s Club in western Massachusetts, with the goal of cleaning up the heavily polluted Housatonic River. The task they faced was daunting. The General Electric Company’s Pittsfield facility and the nearby Housatonic were contaminated with thousands of pounds of polychlorinated biphenyls (PCBs). In the 15 years since the extent of the pollution had been revealed, none of it had been removed from the river and the investigation of the GE site was mired in a morass of bureaucracy.

Despite the challenges, the group formed the Housatonic River Initiative (HRI).

Few believed that a band of citizens with practically no money and a tiny constituency could take on such a large corporation and jolt the paralysis of inaction. But five years later, Pittsfield’s pollution problem was on the front page of *The Wall Street Journal*, dredging of the river had finally begun, and teams of EPA and Massachusetts Department of Environmental Protection (DEP) agents were on the case. In the middle of it all was HRI.

“There was no reason to think HRI was going to succeed,” says George Wislocki, president of Berkshire Natural Resources Council, a nonprofit land preservation group that has played an instrumental role in supporting HRI. “We still have a long way to go, but nobody thought we’d get this far.”

For many years, Pittsfield was a boomtown. Today, NO SWIMMING OR FISHING signs line the river’s bank south of the GE facility, while many stores on Pittsfield’s main street are unoccupied.

See HRI, page 6

The Keys to HRI's Success



After five years, HRI has learned—sometimes the hard way—what works and what doesn't. Here are some lessons drawn from the organization's experience:

BE THERE. While it may sound elementary, one of the most important things HRI did was to stay in existence. HRI showed up at every public hearing, insisted on meeting with company and government officials during lag times, held events to keep a public presence, and responded to all inquiries.

DO YOUR HOMEWORK. HRI educated themselves on the science of PCBs, remediation technologies, legal subtleties, and the history of the problem. This knowledge base gave HRI credibility and helped deflect accusations of being meddling know-nothings.

KEEP PUSHING. "The moment you compromise, you're dead," says Mickey Friedman. "You can get sucked into what the regulators tell you, but they don't live here, they don't love the river, and they're under tremendous pressure."

BE POSITIVE. Battling a corporate giant over industrial pollution can be frustrating. Secure smaller, tangible successes, and where possible make them fun. Street theater with big signs livened up several public hearings in Pittsfield.

KEEP THE TENT OPEN. Keeping a diverse constituency involved and informed about its activities has been one of HRI's greatest strengths.

MANIPULATE THE SYSTEM. By knowing what it was talking about and securing the endorsement of key local organizations and governmental bodies, HRI received several small, but critical, state and federal grants designed to assist public advocacy groups.

MAINTAIN A THICK SKIN. Be prepared to make enemies and to have public figures take credit for your successes. Business and political interests in Pittsfield have frowned on publicity that casts any negative spin on the city.

REACH OUT. Most early HRI participants were environmentalists, but today its most important constituency is the group of Pittsfield residents who worked with PCBs or own contaminated land. "They knew more about the contamination than anyone else, and they are the ones who have suffered the most," says Friedman. "It's unique to have an alliance between environmentalists and workers. I think it's what has made us so successful."

HRI from page 5

GE's local workforce has been reduced from 13,000 to 700 and the local economy has collapsed.

GE manufactured electrical transformers at its Pittsfield location. Extremely stable, insoluble in water, and nonflammable, PCBs were an ideal coolant to be used inside the transformers. The company began using PCBs at the facility in 1929 and by the 1950s, PCB-

containing transformers built at the facility were being sent all over the country. It wasn't until the 1960s that PCBs were recognized as a serious threat to the environment and human health. By then, approximately 45,000 pounds of PCBs had found their way into the Housatonic.

In 1977 PCBs were finally banned by the federal government. But by this time the Housatonic had a pollution problem that, thanks to the near

indestructibility of PCBs, had the potential of lasting for centuries. And the problem does not end at the river's banks. The floodplain is contaminated, as is local groundwater. In the early 1980s a several-foot-thick layer of PCB-contaminated oil was found to be floating on top of the water table over a nine-acre area.

In the 1970s and 1980s the extent of the damage done to Pittsfield began to be understood. Former GE workers, concerned about Pittsfield's future, described spills, tank ruptures, and discharges of PCBs. Despite the fact that GE had already cleaned up several sites, their stories led to the suspicion that the problem might be worse than was known or thought. Moreover, studies in the 1980s found GE workers more than twice as likely to get cancer as the general population.

And so it was that in the summer of 1992 George Wislocki and State Representative Christopher Hodgkins called a meeting of any and all who had been involved in the PCB battle. HRI was launched with a 15-person steering committee, five other committees to focus on specific issues, and Hodgkins's office staff serving as the focal point for the organization. HRI's efforts moved forward on two planes: the short-term goal of educating the general public about the issue and the long-term goal of PCB removal.

HRI adopted a logo. It published a simple four-page newsletter. A series of meetings was held with state and federal officials in which HRI demanded action and greater public participation. Several HRI members took it upon themselves to fully understand PCBs and the various possibilities of remediation. They went to town boards for official endorsements to represent the public. HRI thus legitimized its demands for a seat at the table and soon was allowed at state-level discussions. HRI also met with GE officials to express its concerns and to hear GE's own perspectives.

When the time eventually came for public hearings to be held, HRI didn't just hope people would show up—it worked very hard to make sure they did. Notices were mailed and calls made. As a result, hundreds of people attended the hearings and demanded action. Suddenly there was a new public sense of urgency, and the regulators responded. The DEP hired a person devoted solely to the GE/Housatonic River issue. EPA assigned two new people to the remediation process.

Shortly afterward, HRI was able to secure public funding, tapping into small pools of money that the DEP and EPA make available to assist public efforts. These grants have been HRI's main source of funding ever since.

The group went on to conduct a remediation research project with Tufts University, to secure its own legal status, and to work with the state on health studies, all the while continuing to work with the DEP, EPA, and GE.

At some point, it was obvious that the element HRI was missing was the city of Pittsfield itself. Although some residents were involved, the initiative had failed to gain a groundswell of support in the 45,000-person city. "Everyone talks about how HRI has fought GE, but it was just as important to make the community face up to the problem, especially in Pittsfield," says Rachel Fletcher, a member of HRI.

All that changed in the spring of 1997 when PCB contamination was discovered in the yards of residences and a city park. It had been common practice during the 1940s and 1950s for truckloads of waste soil from the GE plant to be used as fill in other parts of the city. At a children's park, tests revealed PCB concentrations of 190 ppm. One backyard had a concentration of 44,000 ppm. The DEP has established 2 ppm as the

upper limit for the presence of PCBs in drinking water.

"As soon as PCBs started showing up in people's backyards, they started calling us," says Tim Gray, an HRI board member since its inception. "At first, I had one-on-one meetings, then it was street meetings, and finally neighborhood meetings. People were showing up a hundred at a time. They didn't know anything about PCBs and we were the only ones who could really answer their questions."

Reporters from local and national newspapers soon began covering the story. Front-page headlines about new discoveries, potential solutions, and swaying political stances graced

The Boston Globe and the local daily, *The Berkshire Eagle*.

Hundreds of outraged homeowners and residents, some of whom discovered that they had raised their children in PCB hot spots jammed public hearings.

Many questions remain unanswered, and elements of the story are as depressing now as they were a decade ago. The cost to remove the PCBs, regardless who pays it, will be staggering: it is estimated at between \$500 million and \$1 billion. Whether the PCBs can be cleaned up and what will be done with the contaminated soil are unknown. What will happen to the land, when and if it is ever usable, is also uncertain; partial redevelopment solutions, such as brownfields, have been discussed but not yet implemented. One certainty, however, is that HRI will remain right in the middle of things.

HRI isn't the only grassroots organization that is working to clean up the Housatonic River and its watershed. One group, the Housatonic Valley Association, has more than 3,000 members that conduct river monitoring activities, greenway projects, and education and outreach efforts. HVA

has also organized 10 Stream Teams that consist of volunteers trained to conduct shoreline surveys of 10 sub-basins in the area. The Stream Teams will also be charged with creating water quality monitoring programs within each basin.

[Editor's Note: On September 24, General Electric agreed to a \$200 million settlement in principle of environmental claims resulting from the pollution of the Housatonic River and other areas from chemical releases from its Pittsfield plant. The claims result from a long history of GE's use and disposal of PCBs and other hazardous substances at the plant, which GE no longer uses for manufacturing.]

Under the settlement, GE will remove contaminated sediments from the one-half mile of the Housatonic River nearest the GE plant. Through a cost-sharing agreement, GE will also fund much of the anticipated cost of an additional 1.5-mile river cleanup to be conducted by EPA. A plan is also being drawn up to cleanup portions of the river further downstream. GE will perform that cleanup as well as remedy contamination at the Pittsfield plants and other nearby areas, including a school and several commercial properties.]

Reading and Writing and... Riparian Zones?

When the kids in Susan Estes' eighth grade class head back to school each fall, their list of school supplies is likely to include some unconventional items. In addition to the usual calculators and notebooks, these students need waders and dip nets.



See Reading, page 8



Students at Oak Park Middle School in Decatur, Alabama planted trees to stabilize the shoreline along Flint Creek.

Reading from page 7

Since Estes started the environmental field studies class back in 1994, more than 100 students at Oak Park Middle School in Decatur, Alabama, have participated in nearly two dozen projects designed to improve and protect ecological conditions in the Flint Creek watershed of the Tennessee River. And we're not talking about busy work, either. When these kids tackle an environmental problem, they mean *business*.

When her students expressed concern that wave action was causing erosion and undercutting banks along Point Mallard Park's three-mile nature trail bordering the river, Estes encouraged them to see what they could do about it. "Since we're located in a rapidly growing urban and industrial area," she explains, "public access along the waterway is limited. More than 20,000 people a year use the trail for hiking and biking, and many of those are Oak Park students. Our kids feel a real sense of ownership for the area; we wanted to do everything we could to make sure this little piece of wilderness didn't disappear."

The class approached the mayor and city council with a proposal to assess the trail's condition, determine the rate and amount of erosion, and suggest the most appropriate, cost-effective method of

bank stabilization and shoreline reclamation. After receiving the official "go-ahead," the students began their soil bioengineering research—with assistance from the Tennessee Valley Authority's Clean Water Initiative, the Flint Creek Watershed Project, and the Natural Resources Conservation Service. They put the information they'd gathered into action by first taking on a couple of small-scale test projects on land belonging to Morgan County farmers. Their success in replacing riparian vegetation on pasture streambanks gave them

the confidence they needed to tackle the imposing Point Mallard shoreline stabilization project.

Another year, another class of students... and the work continues. So far, the teens have planted a total of 1,160 trees, shrubs, and emergent vegetation (including baldcypress, black willow, alder, buttonbush, silky dogwood, bass grass, and hibiscus) along a 200-meter stretch of the riverbank. Their long-term objective is to reclaim and stabilize 1,000 meters of shoreline along the trail, preventing further soil erosion and improving water quality. A recently awarded grant of \$20,000 from 3M Corporation will go a long way toward that goal; the students are exploring the use of hard-armoring techniques in their efforts to keep soils in place. The shoreline stabilization project is expected to take three to five years to complete, with several hundred students involved over that course of time.

The field studies classes have been involved in many other projects, including conducting an ongoing water quality monitoring program, constructing two on-campus wetland cells used to grow the plants needed for their reclamation project, and writing and producing two videos about their work. They've also undertaken a variety of education-based initiatives designed to raise public awareness about water quality issues. The students have made presentations to state

and regional water management conferences and partnered with an extensive list of local, state, and federal agencies. In the upcoming school year, the class will be producing a CD based on four multimedia programs made by earlier classes. To be distributed to schools throughout the watershed, the CD covers the history of Flint Creek, nonpoint source pollution, water chemistry testing, and bioassessment.

According to Estes, the students learn that everything on the planet is connected: "They work as members of a team to solve real-world problems, and they can begin to see the difference their involvement makes in the resource—and in the community." There's a real sense of continuity among the classes, with each year's group of students working hard to further the accomplishments of the class preceding them. "These kids are developing an environmental ethic that's going to stay with them throughout their lives," says Estes. As one of last year's students remarked, "I can't wait to bring my own children back here in 25 years and show them what we did."

For more information, contact Susan Estes at Oak Park Middle School, (256) 552-3035.

Senior Pennsylvanians Join the Ranks of Volunteer Monitors

There's a new game in store for some of Pennsylvania's senior citizens, and it's not Bingo! The Environmental Alliance for Senior Involvement (EASI), a national partner with EPA and other environmental organizations, has created a statewide EASI Senior Environment Corps (SEC) with the help of Pennsylvania's Departments of Environmental Protection and Aging.

EASI's mission is to promote in senior Americans an environmental ethic that results in expanding their knowledge, commitment, and active involvement in protecting and caring for the environ-

Tips on Creating a Senior Environmental Organization For Your Community

This guide offers valuable tips and advice on how to establish a senior environmental organization in your area. Written by Tom Benjamin, president of the Environmental Alliance for Senior Involvement, the guide is available online at www.easi.org/senior_environment_corps.html.

ment for future generations. SEC is EASI's national organization to link seniors across the country in achieving sustainable communities. Pennsylvania's SEC is the first statewide SEC in the Nation. The program is a national model that is piloting standardized statewide citizen water quality monitoring with standardized quality assurance/control, testing parameters, and equipment and training. Nearly 200 older Pennsylvanians are working in their own communities around the state on 10 pilot projects to monitor water quality and provide mentoring and community education through partnerships with schools and other community organizations. The 10 pilot project communities are Allentown, Indiana, Lansdale, Meadville, Mechanicsburg, Philadelphia, Pittsburgh, Scranton, Warren, and York.

Monitoring is already underway in many subbasins around the state. The data that are collected are being stored in an online database that can be found at www.environmentaleducation.org. The data are quality controlled by the Pennsylvania Department of Environmental Protection. EASI has also created a special database for use during Pennsylvania's "Water Snapshot '98," a statewide effort to publicize citizen water quality monitoring efforts. SEC data managers will be entering the data collected during this 10-day event, for the state to analyze and use. For more information, contact Peggy Harlow Knight, National EASI Program Director, 5615 N. 26th St., Arlington,

VA 22207, phone: (703) 241-0019; fax: (703) 538-5504; Mknighteco@aol.com. To become a sponsor of a Senior Environment Corps in your community, e-mail EASI at easi@easi.org.

Anacostia Watershed Society Helps Bring River Back to Life

Back in 1989 when Anacostia Watershed Society (AWS) began organizing volunteers for cleanup events, AWS staff never had to look very far for a site along the river in need. Today, they are happy to admit, they sometimes have to hunt to find areas with enough trash to keep their volunteers busy.

AWS is a non-profit organization working to restore the Anacostia River for the health and enjoyment of all residents of the community. Since its inception in 1989, it has organized more than 16,600 volunteers who have removed 237 tons of debris and more than 5,000 tires from the river and its banks. Within the watershed, volunteers have planted 9,093 trees and stenciled 694 storm drains with the message "Don't Dump Anacostia River Drainage." AWS staff have provided half day canoe tours of the river to nearly 3,000 people—about 1,300 of which are students. More than 9,000 people have seen the AWS educational slide show.

Add all of these statistics together and you have a very large measure of success. In addition to restoration events, AWS organizes tours of the river for groups interested in discovering this beautiful and underused resource.

Today more than sixty species of birds and forty-three species of fish call the river home, even river otter

have been spotted there, which hasn't happened since the 1960s. Listed as "one of the most threatened rivers" by American Rivers in 1995, the Anacostia is coming back to life thanks to grassroots efforts like AWS and a renewed federal and state commitment.

For more information, contact Jane McGlade at (301) 699-6204, Anacostia Watershed Society. Visit AWS's home page at www.anacostiaws.org or call (301) 699-6204 to find out about restoration events and river tours.

Washington State Cleanups Yield Some Surprises

What do a 75-foot oil boom, an old car bumper, and a mattress have in common? They were among 64 cubic yards of trash removed from Washington State coastal waters and shorelines in spring cleanup campaigns.

In celebration of Earth Day 1998, Kitsap County in Washington conducted a number of cleanup events. In Port Orchard, 25 volunteers picked up two dumpsters of trash along the south shore of Sinclair Inlet. That same day 50 volunteers picked up another two dumpsters of trash along the west end and north shore of Sinclair Inlet and along couple of miles of Washington Narrows,

See Kitsap, page 10



Volunteers for the Anacostia Watershed Society pause for photo with their largest catch on Watts Branch Cleanup Day.



Volunteers in Kitsap County, Washington removed two dumpsters worth of trash at an Earth Day cleanup event at Sinclair Inlet.

Kitsap from page 9

scuba divers helped clean up under the 1st Street dock. Meanwhile, 50 more volunteers, including Brownie Scouts and their leaders, were helping the City of Bremerton Parks Department remove weeds and plant new trees and vegetation at Lions Field Park and Pat Carey View Vista, near Puget Sound's Washington Narrows.

The following Friday, 700 volunteers from the U.S. Navy Submarine Base, Central Kitsap School District teachers and students, and some volunteer scuba divers joined in the cleanup along about Dyes Inlet shoreline near Silverdale, Washington. "Treasures" collected there ranged from tiny cigarette butts to an oil boom that was more than 50 feet long.

Shoreline and underwater cleanups have occurred at Sinclair Inlet twice a year since 1990—on Earth Day in the spring and during WATERWEEKS in September. For more information, contact Donald Larson, Kitsap Diving Association, P.O. Box 1302, Bremerton, WA 98337-0511, phone: (360) 373-7593; e-mail: dolarson@linknet.kitsap.lib.wa.us.

For FOLKS in South Carolina, Watershed Protection Is a Family Affair

More than 1200 families are now members of the Friends Of Lake Keowee Society (FOLKS), and volunteer participation has

reached new heights. In the past 12 months, lake surveys by boat and air have documented many lake and stream problems. Thanks to FOLKS and its partners, most problems are getting the attention they need. With assistance from Duke Energy, the South Carolina Department of Health and Environmental Control, the South Carolina Department of Natural Resources, and local government, FOLKS members were able to remove unauthorized

signs and derelict boats, repair collapsing docks, recover drifting floats and trees, improve navigation aids, correct inadequate silt barriers, and replace a leaking septic field.

As FOLKS expanded over the past year, conservation seminars were added to member forums and featured an outstand-

ing array of speakers. Pontoon classrooms and support for Science Fairs and Eco Days inspired future conservationists. Sweeps kept shoreline litter in check, and divers began to attack debris under major marinas. FOLKS promoted strengthened boating regulations and also established a library, telephone inquiry center, and "who to call" directories. In the spring, newly formed Stream Teams began "Wade-ins" and "Critter Counts" to assay stream health and head off problems before they affect the lake. And, through an alliance with the Appalachian Council of Governments and many government agencies and regional organizations, work is beginning on a plan for the long-term protection of the water resources of the Keowee basin. Assistance on lake problems and information about the society are now available by dialing the message center at (864) 882-FOLK. For more information, contact Bill Ebeling, President, Friends Of Lake Keowee Society, PO Box 80, Newry SC 29665;

Watershed Poetry and Art Contest

The theme for this year's River of Words Poetry and Art Contest will again be "watersheds." This international contest, which is sponsored by the Library of Congress Center for the Book and the International Rivers Network (IRN), is open to young poets and artists from 5-19 years of age. One international winner plus eight national grand prize winners and their parents will again win trips to Washington, D.C. to be honored at the Library of Congress in the Spring of 1999.

A panel of judges, headed by former U.S. Poet Laureate (1995-1997) Robert Haas and the International Children's Art Museum, will choose winners in four age categories on poetry and art. Fifty finalists will win prizes ranging from art supplies to books and T-shirts. All entrants are acknowledged with Watershed Explorer™ Certificates. The deadline for submissions is February 15, 1999.

"The River of Words Project strives to give children a sense of place and belonging," said project co-founder Robert Haas. "We're encouraging children to explore their neighborhoods, schoolyards, creeks, and imaginations" added project director and co-founder Pamela Michael.

For free entry forms and contest guidelines or to order the 50-page Teacher's Guide (\$6, includes postage and handling) or other teaching materials, contact International Rivers Network, River of Words Project, PO Box 4000-J, Berkeley, CA 94704; e-mail row@irn.org or visit IRN's Website at www.irn.org.

phone: (864) 882-3655; e-mail: ebelingbill@juno.com.

Volunteers Conduct First Visual Shoreline Survey of Acton Streams

Between April 22 and May 7, 1998, more than 150 volunteers (organized into Stream Teams) in Acton, Massachusetts, took to their canoes and donned hip waders to conduct the first-ever visual shoreline survey of the two main stream systems in Acton (a total of 36 stream segments). The teams, made up of third and fourth grade students, high school students, and other volunteers from the community, surveyed approximately 25 miles of Acton shoreline. They made maps, took photographs, recorded stream conditions, and completed bridge, wetland, and pipe surveys. They also identified both assets (e.g., wildlife and wildlife habitat, historical sites, etc.) and potential problems (e.g., trash, yard waste, and runoff concerns). Local businesses contributed refreshments, disposable cameras, a discount on film developing, and videotapes for the training session, which was recorded and rebroadcast nine times by the local access cable television station.

The photographs, maps, and data generated by the survey have already served as a valuable resource in the process of identifying areas where best management practices could be used to reduce the input of pollutants into streams from street runoff and other sources. The teams have also formed four Task Forces—Cleanup, Stewardship, Web Site, and Rail Trail Development/Linkage—to work on some of the short- and long-term projects identified during the shoreline survey. A streamside cleanup is being planned for this fall, and outreach materials are being developed for distribution. A Stream Team web site containing educational material, maps, and photographs from the 36 stream sections will soon be accessible. Visit www.ultranet.com/~balkus_p/stream.htm for survey results from one stream section. For more information, contact Mary Michelman, e-mail: mtmichelman@compuserv.com, phone:

(978) 263-7370 or The Organization for the Assabet River, e-mail: OAR@ultranet.com.

Rivanna River Volunteers Document the State of their Basin

Each year, the Governor of Virginia delivers a State of the Commonwealth Address. Rivanna River Basin Project organizers in central Virginia have followed suit by releasing *Rivanna River Basin Project: State of the Basin 1998*. The report assesses past and current conditions of the Rivanna River and its tributaries, located in Charlottesville, Virginia, and spells out detailed recommendations to help the watershed achieve desired future conditions. The Rivanna River Basin Project (initiated by the Thomas Jefferson Planning District Commission) was designed to engage citizen volunteers in research, field data collection, and the development of recommendations for the Rivanna River Watershed. Citizens were recruited for the Rivanna Roundtable and charged with conducting research and making recommendations on water quality and quantity, habitat and morphology, land use, public policy and regulation, and history. Field Teams, small teams of volunteer monitors, monitored macroinvertebrates, chemical characteristics, and morphological characteristics at 14 monitoring stations across the basin.

“Rivanna River Explore Day” was organized to kick off data collection for the report. The event was an opportunity to broaden participation by calling on the general public to set out across the basin, individually or in small groups, to document the state of the basin at the location of their choice. More than 100 participants including scout troops, school groups, and residents of a retirement

*A leaf drifts lazily down from the tree I am sitting near;
Lands within the water then drifts slowly away.
Little fish dart around the deeper parts of the creek;
They seem in a terrible hurry to get no where.
I turn around and look behind me,
There is a small place where the creek is much deeper.
The sun shines on it just right making it appear a dark shade of coppery gold.*

—Annie Hald, age 12
Rivanna River Explore Day Participant

village provided a rich 25-volume archive including photographs, video and audio tapes, descriptive maps and text, sketches, and poems.

The overall goal of the project was to gather information that can be used to maintain and improve water quality and to provide this information to citizens and local decision makers. In *State of the Basin 1998*, the Roundtable made a number of recommendations relating to water quality improvements and identified strategies that will improve water quality and community enjoyment of the river. The recommendations included development of a corridor plan to guide decision making related to preservation and use of the river; development of a comprehensive database of all information related to the river, and establishment of an inter-agency data collection and monitoring program. More information on the project can be found on the Internet at www.avenue.org/tjpd, or by contacting Rochelle Garwood at the Thomas Jefferson Planning District Commission at (804) 979-7310.



St. Anne's Belfield Ecology Club members identified macroinvertebrates from Ivy Creek for the Rivanna River Basin Project: State of the Basin 1998 report.

Adopt-A-Watershed Curriculum Sparks Kids' Interest in Science

Kids of all ages are getting more than they bargained for in their science classes, and loving it. Gone are the days of boring lectures and dry reading. The Adopt-A-Watershed curriculum is a K-12 school-community interdisciplinary learning experience that uses local watersheds as living laboratories. The material can be used in urban, suburban, or rural schools and may be adapted to fit each school's needs.

The program has five main elements incorporated into each grade level unit of study: applying science concepts directly



to a local watershed, a long-term field study, a restoration project, a community action project, and built-in reflection activities. The

program provides teacher training and consultation to tailor the program to local community needs. In the K-3 units, young students learn what a watershed is and what kinds of wildlife live in it. Grades 4-7 learn about the landforms and geology of their watershed, evolution of the plants and animals in their watershed, and how ecosystems work. Older students in grades 8-12 study water quality, watershed physics, and wildlife and vegetation management. EPA provides funding to train teachers and community leaders in Adopt-A-Watershed's integrated environmental education program.

Ted James, a teacher at Eagle Valley Middle School in Eagle, Colorado, found that Adopt-A-Watershed's Geologic History Unit is a great way to pique students' interest. Last year, James' students used the curriculum to study geology and then related that field to

astronomy and ecology, all while staying focused on a watershed theme.

The Geologic History Unit captivates the students' interest by focusing on Major John Wesley Powell's historic 1869 river expedition through the Grand Canyon. Students read sections of Powell's journal and learn about the geology of the Grand Canyon while keeping their own journal and discovering the geologic history of their own watershed. James began his school's unit with a splash by taking all 140 seventh graders on a raft trip down the Colorado River through Glenwood Canyon, encouraging students to imagine themselves trying to collect data while facing the dangers and hardships of such a river trip.

So far, James' seventh graders have established two long-term field studies, including a soil erosion study and water chemistry study. Students learn that studying the geology of a watershed is critical to understanding the ecology and interrelationships between living things, because the lay of the land and its mineral composition directly affect the chemistry of water and thus the life that can thrive there.

Toni Rockwell, a fourth grade teacher in the Tahoe-Truckee Unified School District in Tahoe City, California, took her students on several field trips to the Ward Creek and Lake Tahoe watersheds to learn about the processes that shape the creek, the lake and their watersheds. The students' thirst for more knowledge could not be quenched, so Rockwell brought in Mick Hogan, a University of California soil scientist, to answer their questions. Gleaning information from local experts, students further their knowledge while learning about the kinds of environmental careers that are available to them. For more information, visit Adopt-A-Watershed on the web at www.adopt-a-watershed.org/welcome.html or contact Jesse Miller, Associate Director, Adopt-A-Watershed, 731 Market Street, Suite 600A, San Francisco, California 94103; phone: (415)541-9657; e-mail: jessef@earthlink.net.

Students Give Water A Hand

Eighth-grade students in Morgan County, Georgia were concerned that some people in their community believed farmers did not care about the environment. To investigate this concern, the students collaborated with local experts in their community, including a local USDA water quality specialist to learn about agricultural best management practices (BMPs) and to what extent they were being used in their community.

The students were participants in *Give Water A Hand*, a watershed education program for youth developed by the University of Wisconsin's Environmental Resources Center. Support for the program is also provided by EPA, the National Fish and Wildlife Foundation, USDA, and Church & Dwight, Co., Inc. The program seeks to involve young people in community environmental service projects.

With the help of USDA, the students tested water quality in a local creek. They also worked with a member of the county Farm Bureau to visit farms in their community to see what measures farmers were taking to protect the environment. As an indicator of whether the BMPs were functioning properly, the students also tested well water quality on the farms they visited.

The students found that farmers were implementing many programs to protect ground water and surface water. To help raise citizen awareness about the watershed protection measures being taken by farmers, the students went on to educate community members about their findings.

Give Water a Hand materials map out an action plan for investigating local watershed concerns and taking action to address a local problem. By involving young people in local watershed protection, *Give Water A Hand* helps them gain skills for environmental stewardship. For more information, call 1-800-WATER20 or write to *Give Water A Hand*,

216 Agriculture Hall, 1450 Linden Drive, Madison, WI 53706. Visit the *Give Water A Hand* web site at www.uwex.edu/erc.

Two Towns Join to Improve Local Creek's Health Through Environmental Youth Program

The Chelsea Creek Action Group (CCAG), a coalition of three community groups in East Boston and Chelsea, Massachusetts, is working to improve the Chelsea Creek watershed environment. To raise environmental and public health awareness, CCAG created an Environmental Youth Program that employs young people throughout the summer and provides hands-on lessons about their urban environment.

CCAG is a coalition of the East Boston Ecumenical Community Council, Neighborhood of Affordable Housing, and the Chelsea Human Services Collaborative/Chelsea Green Space and Recreation Committee. Chelsea Creek flows between East Boston and the city of Chelsea. The creek runs through industrialized waterfronts and suffers from pollution from such industries as oil/petroleum refineries, metal recycling, and storage of salt piles. In addition, airport parking lots along the waterfront channelize urban runoff directly into the creek.

The youth used their creative talents to improve the watershed in a number of ways including: developing a "vision map" which highlighted what residents would like to see along the creek; stenciling approximately 30 storm drains throughout East Boston with "Drains to Boston Harbor"; and working to design and implement a shoreline survey on an one-mile stretch of Chelsea Creek. This year the youth program also cared for approximately 100 young street trees in the community. Participants learned to identify and assess tree health and removed and replanted 30 yew bushes around a public housing development.

Saves Our Streams Program Saves Wetlands Too

Several wetlands workshops are being offered around the country by the Izaak Walton League of America (IWLA) as part of the League's Save Our Streams (SOS) Wetlands Conservation and Sustainability Initiative. The goal of SOS's wetlands initiative is to encourage citizens to take a proactive role in conserving and restoring wetlands.

The one- and two-day workshops are geared toward citizens, educators, community and business leaders, and others with a non-science background. Morning sessions consist of classroom lectures on local wetland hydrology, vegetation, and soils; relevant regulations; using resources such as plant keys; and wetland functions and values. Afternoons will be devoted to field training sessions in which participants will see examples of plant adaptations, explore differences between upland and wetland soils, examine the effects of human impacts on wetlands and identify vegetation. In the two-day workshop, participants also will learn techniques for setting up transects, monitoring vegetation, and sampling soils. Each participant will receive a copy of the Handbook for Wetlands Conservation and Sustainability. The handbook is also offered through SOS for \$35.00 plus \$5.00 shipping and handling. Please call (800) BUG-IWLA (284-4952) or e-mail sos@iwla.org for ordering information.

One-day workshops will be offered in conjunction with Terrene Institute's *Communities Working for Wetlands* conferences. The conferences will be held in New Orleans (February 18-20), San Francisco (March 18-20), Indianapolis (April 8-10) and Boston (May 6-8). SOS workshops will take place on the day before each conference. In addition, IWLA is seeking groups that are interested in hosting a workshop. For more information, call Leah Graff, SOS Technical Coordinator; or Julie Middleton, SOS Program Director, at (800) BUG-IWLA (284-4952).



Other activities included a visit to Belle Isle to learn about the marsh's ecosystem; a beach cleanup; and an environmental justice and cleanup conference in Roxbury. Through these activities, the youth developed an appreciation for the Chelsea Creek Watershed and its condition, the role of urban trees within it, and the relationship between the environment and their communities.

The CCAG Environmental Youth Program is funded in part by the Greater Boston Urban Resource Partnership (URP). URP is a collaboration of community groups; nonprofit organizations; and federal, state, and city agencies working to improve Boston's urban environment. EPA and USDA also provide funding.

New Resources

Publications



Water, Culture, and Power: Local Struggles in a Global Context

Edited by Barbara Johnston and John Donahue, *Water, Culture, and Power* presents case studies from around the world that examine the complex culture and power dimensions of water resources management. It touches on everything from dam construction and hydroelectric power generation to water quality and potable water systems. Hardback editions are \$50 and paperbacks are \$30. For a copy, contact Robbie Kaplan, Island Press, 1718 Connecticut Avenue, NW, Suite 300, Washington, DC 20009-1148; phone: (202) 232-7933; fax: (202) 234-1328; e-mail: rkaplan@islandpress.org; website: www.islandpress.org.

Massachusetts Bays Watershed Stewardship Guide Now Available

The Massachusetts Bays Education Alliance is dedicated to building a community of educators who teach about and promote the protection of the Massachusetts Bays through their "Watershed to Bays" curriculum. The curriculum hinges on a stewardship guidebook (*Massachusetts Bays Watershed Stewardship Guide: An Education Resource*) that has been updated over the last two years. The guide contains more than 300 pages of activities for grades 4-12. The activities involve inquiry, problem-solving, and models. For a copy of the guide, contact Faith Burbank at (781) 293-3541; e-mail: fburbank@umext.umass.edu.

Software

Hi-Tech Software Spotlights Watershed Efforts

Produced by Mountain Visions for the Bureau of Land Management, the Aurora Project is a CD-ROM and website that

offers a virtual exploration of community watershed partnerships in the western United States.

The Aurora Project shows users a variety of riparian environments where work to restore damaged watersheds has been rewarded by significant improvement in watershed health and productivity. Users can select their route, the flora and fauna they want to see, the birds they want to hear, and the depth of the experience and information they desire.

To order a copy, e-mail Mountain Visions at mv@mtnvisions.com or visit their website at www.mtnvisions.com/aurora/home.html. The Aurora Project is also viewable in an interactive computer kiosk at the Idaho Department of Fish and Game MK Nature Center, 600 S. Walnut St., Boise, Idaho; phone: (208) 334-2225.

Web Sites

Green Communities Assistance Kits

Green Communities is a new EPA program that assists community leaders and community organizations by providing information, tools, resource materials, case studies, and indicators to help their communities become more sustainable. The cornerstone of the program is its online Green Communities Assistance Kit—a step-by-step guide for planning and implementing sustainable actions.

The kit is a comprehensive reference guide for identifying and resolving needs, interests, and problems for a range of communities, whether they be urban, suburban, or rural. The web site provides information on how to get started, what tools are available to help communities, as well as case studies from successful communities. The Green Communities Assistance Kit is available at www.epa.gov/region03/greenkit/index.html.

Federal Advisory Committee Recommends Changes in TMDL Program

In July, a Federal Advisory Committee on the Clean Water Act's Total Maximum Daily Load (TMDL) program, sent a report to EPA's Administrator with 170 recommendations for improving the program. The recommendations suggest new policy directions in some areas, while endorsing approaches consistent with current practice in other areas.

The 20-member committee, convened by EPA in 1996, represents diverse geographic, policy and professional perspectives, including state and local governments, tribes, environmental groups, industry, agriculture, forestry, academia, and three federal agencies. EPA is in the process of developing revisions to existing TMDL regulations and guidance, and as part of this process, will carefully review and consider the committee's recommendations.

A TMDL specifies how much a pollutant needs to be reduced to meet water quality standards. It also allocates pollutant load reductions among pollutant sources in a watershed and provides the basis for taking actions needed to restore a waterbody, through point source and nonpoint source controls. Under the program, states must identify and list waterbodies where state water quality standards are not being met and then establish TMDLs for these waters.

A fact sheet and full report is available on the Internet at www.epa.gov/owow/tmdl/advisory.html, or by calling EPA's Watershed Branch at (202) 260-7074. For more information, contact Robin Woods at (202) 260-4377.

EVENTS

NOVEMBER

12-15 **1998 Priming the Pump and Groundwater National Conference**, Hyatt Alicante, Anaheim, CA. Contact The Groundwater Foundation, P.O. Box 22558, Lincoln, NE 68542; phone: (800) 858-4844; fax: (402) 434-2742; e-mail: info@groundwater.org.

15-19 **1998 Annual Conference on Water Resources & Symposia on Management of Human Impacts on the Coastal Environment and Applications of Water Use Information**, Point Clear, AL. Contact AWRA, Attn: 1998 Annual Conference & Symposia, 950 Herndon PKWY, Ste. 300, Herndon, VA 20170-5531. phone: (703) 904-1225.

DECEMBER

6-10 **Hydrophobic Organic Compounds in Rivers**, San Francisco, CA. Contact Valerie Kelly (vjkelly@usgs.gov) or Kathy McCarthy (mccarthy@usgs.gov), USGS, 10615 SE Cherry Blossom Drive, Portland, OR 97216; phone: (503) 251-3244; fax: (503) 251-3470.

14-16 **Nutrient Management in the 21st Century**, Denver, CO. Contact Americas Clean Water Foundation, P.O. Box 75115, Washing-

ton, DC 20013-5115; phone: (202) 898-0908; e-mail: acwf@clark.net; web site: www.acwf.org.

15-17 **Second Annual Partners for Smart Growth Conference**, Austin, TX. Contact the Urban Land Institute at (800) 321-5011; web site: www.uli.org.

JANUARY

11-15 **Working at a Watershed Level**, Chico, CA. Contact Dr. Donald Holtgrieve at (530) 898-5780; fax: (530) 898-6781; e-mail: holtgrieve@facultyp0.csuchico.edu; website: www.csuchico.edu/~donald/January_course.htm.

24-27 **Tailings and Mine Waste 99**, Ft. Collins, CO. Contact Linda L. Hinshaw at (970) 491-6081; fax: (970) 491-3584; e-mail: lhshaw@engr.colostate.edu.

FEBRUARY

10-12 **The 1999 North Carolina Environmental Education Conference**, Research Triangle Park, NC. Contact Judy Pope, Office of Environmental Education, P.O. Box 27687, Raleigh, NC 27611-7687; phone: (919) 733-0711.

18-19 **Conference on Stormwater and Urban Water Systems Modeling**, Toronto, Ontario. Contact Lyn James at Computational Hydraulics, Int., 36 Stuart Street, Guelph, ON, Canada N1E 4S5. Phone: (519) 767-0197; fax: (519) 767-2770; e-mail: info@chi.on.ca; web: www.chi.on.ca.

18-20 **Third Annual American Wetlands Month Conference**, meeting in four "Communities Working for Wetlands" across the nation. Beginning in New Orleans, LA, Feb. 18-20, the conference continues to San Francisco, CA, March 18-20 and Indianapolis, IN, April 8-10, officially opening American Wetlands Month north of Boston in Andover, MA, May 6-8. The conferences will feature hands-on, interactive workshops where participants will learn how to solve their own wetland problems.

MARCH

22-27 **Wetlands Engineering and River Restoration Conference**, Denver, CO. Sponsored by the American Society of Civil Engineers. Contact ASCE, Conferences and Expositions, P.O. Box 832, Somerset, NJ 08875-0832. Phone: (800) 548-ASCE within the U.S., and (703) 295-6050 outside the U.S.; fax: (703) 295-6333.

23-25 **Building Clean Water Communities**, Holidome, Lawrence, Kansas. Contact Ruth Wallace, Missouri Department of Natural Resources, For more information, phone: (573) 751-7428.

30-1 **Creative Solutions: Moving Rural Communities into the 21st Century**, Seattle, WA. Sponsored by Rural Community Assistance Corporation. For more information, contact RCAC at (916) 447-9832, ext. 139.

Modernized STORET Will Improve Data Sharing Among Citizen Monitors, States, and Locals



EPA has modernized its STOrage and RETrieval (STORET) water quality database system to better meet the emerging data and information needs associated with watershed protection. Federal agencies, states, tribes, local governments, academic groups, and citizen volunteers will find the modernized STORET—released in September, 1998—to be a revolutionary step forward in the collection, management, and sharing of water quality data. STORET is free to users, easy to use, supported and maintained by EPA, and flexible enough to go anywhere you can take a laptop. The system has menu access and browse capability, supports storage of quality assurance and quality control information, and provides a wide range of standard output formats (e.g. dBase, Lotus, and ASCII). It allows users to store chemical data, biological community information, sediment toxicity information, and aquatic habitat evaluations. It also supports the geographic information system (GIS) environment. Data stored in STORET will be accessible to the public on the Internet in 1999.

EPA, other federal agencies, and state and local governments will draw on the data in STORET in evaluating environmental conditions and making planning decisions. Therefore, information entered into STORET by volunteer monitoring programs and watershed alliances will be given new credibility as part of this national database.

To find out more about using STORET to manage your data, call 1-800-424-9067 or e-mail STORET@epa.gov. A user's guide is included on the CD-Rom and EPA technical support is also available. Additional information can be found on the STORET Web Page at www.epa.gov/owow/STORET.



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