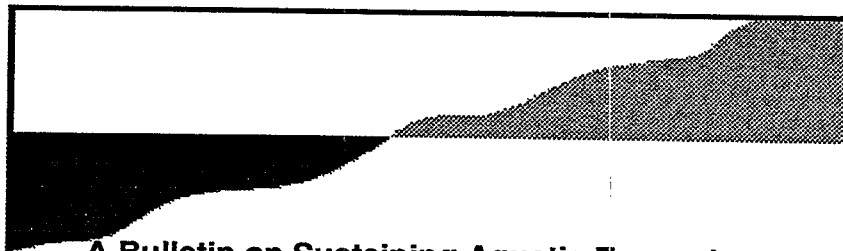




Watershed Events



A Bulletin on Sustaining Aquatic Ecosystems

Note from the Editors

This is the second issue of a series devoted to the watershed approach and reinvention. In our last issue, we highlighted how different agencies are using the watershed approach as a vehicle to change the business they are in and the way they do it. The feature article of this issue covers the "reinvention" of training needed to effect this change.

One of the major challenges for the watershed approach is measuring success. It is much easier to report what we have done under individual programs than what we have accomplished toward a cleaner environment. Defining success under the watershed approach and measuring it over time will give all stakeholders a shared satisfaction and realistic expectation. This will be the focus for our next issue. Please write to us about how you define and measure, or would like to define and measure, success under the watershed approach.

The Watershed Approach and Reinvention- Training for Change

As federal, state, and local agencies work to reinvent themselves and begin to assess their changing needs, each is developing training that will help their employees better adapt to new ways of serving their public customers. The acquisition of new skills and knowledge about the watershed approach is a vital link to its success. Agencies are tackling the challenge of meeting new training needs and are adjusting their training approaches.

Collaboration of effort and cross-training among agencies is one potential outcome of these changes. Collaborative training programs provide the unique opportunity for experiencing the different agency "cultures" or "values." Because these agencies will most likely be working together under the scenario of the watershed approach, this experience will be useful for building and strengthening partnerships.

We welcome the first time contributions to this issue from The Nature Conservancy, the Association of State Wetland Managers, and the Florida Coastal Management Program. We look forward to hearing more from our partners at state, local, and private organizations.

EPA The Environmental Protection Agency is developing the Watershed Academy training program to provide states, local governments, citizens, and federal agencies with information about its approach to watershed protection.

The Academy will provide an integrated, watershed-based approach to water quality management and the protection of aquatic ecosystems, drinking water sources, other human uses of water resources, and public health.

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A special focus on training and the watershed approach, and...

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The curriculum will incorporate existing resources and courses offered by EPA, other agencies, and private organizations. EPA Regional staff and their state contacts will provide insight into what states find effective in the administration of watershed programs. The Watershed Academy also provides a framework for federal agencies to cooperate in the development of a common watershed training approach.

The training coursework can be customized for one to five days using various combinations of the modules. The training courses will be offered upon request at central locations beginning in 1996.



Through the Proponent-Sponsored Engineer Corps Training (PROSPECT) program, the Corps of Engineers offers an extensive curriculum of ecosystem/watershed-related training covering a host of subjects encountered in planning, designing, constructing, operating, and maintaining water resource projects. The two- to five-day courses are taught by Corps professionals and outside experts, and are offered at many locations throughout the country.

Several of the courses are related to watershed protection and restoration and wetlands. Among them: the study of wetland concepts and principles and their role in an ecosystem and watershed setting; assessment and evaluation of the ecological resources affected by a

proposed restoration or mitigation activity; environmental planning for environmental impact assessments and evaluations; and methods of measuring and evaluating the benefits of environmental restoration and protection projects. The Corps welcomes attendance by individuals outside the agency. Requests are considered on a space available basis and must be submitted in writing through the employing agency's training office.



The National Oceanic and Atmospheric Administration Office of Ocean and Coastal Resource Management offers federal consistency workshops as part of the office's technical assistance to state coastal programs.

Federal consistency is a legal requirement under the 1972 Coastal Zone Management Act that requires federal agencies, state and local governments, and private entities applying for federal permits, licenses, or financial assistance to comply with state coastal regulations.

The workshops assist agencies in complying with the federal consistency requirement, making full use of federal consistency benefits, ensuring adequate consideration of state coastal management programs, and resolving conflicts. Four workshops have been held and two more are scheduled for later this year. All local, state, and federal agencies involved in coastal management are invited to attend.



The Tennessee Valley Authority (TVA) offers several training opportunities on watershed topics.

TVA's Clean Water Initiative sponsors two-day Ecological Restoration Workshops to raise awareness of how the public and

private sectors can participate in streambank restoration.

A one-day stream classification class, also offered by the TVA Clean Water Initiative, provides field biologists with a brief overview of stream morphology using the Rosgen stream classification system for habitat evaluations.

River Action Team members receive streambank stabilization training to develop skill in assessing the condition of their watersheds in order to develop and implement water quality management plans with support from the community.

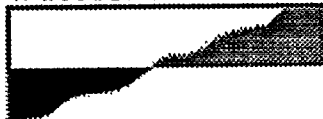
TVA is also coordinating a new initiative for the 1995-96 school year called "Adopt-A-Watershed." The program exposes teachers to topics such as water quality and land use impacts, watershed mapping, stream sampling, and techniques to reduce polluted runoff.



The United States Geological Survey's training center in Denver, Colorado facilitates the education of approximately 2,500 people each year. Employees of USGS and cooperating agencies are eligible to participate in classroom and field activities on subjects such as ground/surface water relationships and the watershed concept. In addition, both introductory and advanced courses on watershed systems modeling are offered. Field experts in each subject area provide instruction and course length ranges from three days to two weeks. Employees from other federal agencies are permitted to attend as vacancies allow.

USGS is also in the process of negotiating an agreement with EPA for two training courses to be provided

Watershed Events



• An EPA Bulletin on Integrated Aquatic Ecosystem Protection •

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by USGS at several EPA regional offices. This "cross-training" will cover protocols and field procedures for collecting water-quality samples, and identifying ground water/surface water interactions.



The USDA Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, is planning a new course on natural resources conservation planning. The course is being developed by National Employee Development staff in Ft. Worth, Texas. Part of the course is on the nine-step planning process as it applies to areas of varying size, from watersheds to site-specific areas such as farms and fields.

The week-long course is designed to assist NRCS employees who provide technical assistance to farmers, ranchers, and others to develop a more comprehensive approach to conservation planning. The course will be presented primarily by satellite broadcast. Facilitators will be present at each broadcast site to address course topics and to present case studies. The course is scheduled to be available by early 1996.



In response to improved understanding of the function of ecological systems, the United States Fish and Wildlife Service (FWS) has adopted an ecosystem approach to fish and wildlife conservation. The ecosystem approach considers the entire environment of a geographic area in planning and implementing efforts to conserve natural resources.

Subjects such as ecosystem management, exploring and adapting to

change, development of skills in habitat restoration techniques, and refined organization methods have been added to the training program in order to effectively adopt the agency's new approach. The FWS is presently constructing the National Education and Training Center in Sheperdstown, West Virginia. The 350,000 square foot facility, located on 538 acres along the Potomac River, is scheduled to open at the end of 1996. Mutually beneficial training opportunities will be developed for the center through partnerships among federal, state, and private organizations.



The Federal Highway Administration (FHWA) sponsors an introductory level training course on the ecological impacts of highway development. The course is geared toward transportation planners, designers, engineers, and environmental analysts who are responsible for making judgements on how, when, and where highways are constructed.

Both classroom and field exercises are designed to help participants understand basic ecological principles and the application of those principles to assessment and mitigation of highway project impacts. Field exercises emphasize the characterization of biological communities and analysis of the environmental impacts of highways, from the watershed level to the site-specific level.

The course varies in length from two to five days. The FHWA provides all course manuals and instructors. The course is available around the country through state highway agencies and is open to personnel from other agencies as vacancies allow.



The Bureau of Reclamation's training center in Denver, Colorado has established innovative training opportunities for Reclamation employees.

Managers receive intensive training on how to supervise in a constantly changing work environment while Reclamation continues its mission of becoming a premiere water resource management agency. The training provides managers with the tools needed to develop practical strategies to more effectively manage change and transition.

In addition, Reclamation offers a mini-sabbatical program for employees which has been strongly endorsed by the Commissioner. The program allows for short-term assignments or exchanges among personnel within, or outside, the bureau that foster professional and personal growth, strengthen personal competency, and contribute to the achievement of Reclamation's principles of customer service. Employees are encouraged to arrange programs and to share their experiences with their colleagues. Responses of those who have participated in the mini-sabbatical program have been overwhelmingly positive.



The Nature Conservancy (TNC) is an international non-profit organization devoted to the conservation of plants, animals, and natural communities representing the diversity of life on Earth through protection of the lands and water they need to survive. TNC manages more than 1,400 preserves and is an active participant in land management and land use planning in nearly 100 watersheds across the U.S. and Latin America.

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The conservation and land management efforts of TNC require its scientific staff to understand the ways that hydrologic (including hydrochemical) processes affect ecosystems and the ways that human activity can impinge on these processes. TNC refers to these topics as "biohydrology," the study of the influences of hydrologic regimes in biological systems.

Through a course offered one to two times a year to Conservancy employees, the biohydrology program provides basic training on hydrology and monitoring techniques, including: the biohydrology of aquatic, wetland, and riparian ecosystems; watershed, stream, and ground water function; natural freshwater chemistry; and riparian and wetlands monitoring. Approximately 60-80 hours of preparatory reading and exercises precede the course, which consists of lectures, in-class activities, discussion sessions, and field exercises.

Although the course is not presently open to non-Conservancy participants, the course instructors are very interested in exchanging teaching ideas for conducting or planning similar courses that integrate the biological and physical aspects of biological conservation.



The Florida Coastal Management Program recently expanded a series of coastal management workshops statewide.

Modeled on the Rookery Bay National Estuarine Research Reserve series, each of the one-day workshops focuses on a specific management topic, such as seagrasses, oil spill response, and exotic plant control. Invited technical experts present information during the morning session and participants have the opportunity to see field examples to demonstrate and reinforce concepts at the afternoon session.

To expand this training concept nationally, the Florida CMP recently sent materials to other coastal management programs and reserves across the nation.

The Association of State Wetland Managers, Inc. is planning follow-up workshops and symposia to the April, 1995 Watershed Management and Wetland Ecosystems Symposium.

The meetings will provide a venue for the exploration of techniques and approaches for "reinventing" multi-objective watershed management. The protection and restoration of aquatic ecosystems will be included as a component in the management strategy. The Association is seeking examples of innovative private, local, state, and federal wetlands and watershed management planning. Meeting locations and dates scheduled include a West Coast location (possibly Portland, Oregon) in fall 1995 and Michigan in spring 1996.

List of contacts for more training information:

EPA:
OWOW
Don Brady
(202) 260-7074

U.S. Army
Corps of Engineers:
Huntsville Training Div.
(205) 722-5817

TVA:
Debbie Hubbs
(615) 632-7559

NOAA:
David W. Kaiser
(301) 713-3098
ext. 144

USGS:
Terry Thompson
(703) 648-6857

NRCS:
Jerry Williams
(817) 334-5401
ext. 3075

FWS:
Training Centers
(703) 358-1817
(304) 725-8461

FHWA:
NHI
Lynn Cadarr
(703) 235-0528

Bureau of Reclamation:
Garrie Carnes
(202) 208-4663

The Nature Conservancy:
Brian Richter
(303) 444-1060 or
David Braun
(703) 841-8784

Florida Coastal Management Program:
Joy Dorst
(904) 922-5438

The Association of State Wetland Managers, Inc.:
Jon A. Kusler
(518) 872-1804

In summary, these programs reveal the diversity of training needs according to the expertise of different agencies. They also show us how agencies have shared their expertise with each other through collaborative training efforts, while still meeting their own objectives. As we move away from a narrow focus on individual program goals to our common goal of a clean environment, the need to share expertise and experience can only increase.

NEW THINKING?

"All thinking worthy of the name must now be ecological."

-Lewis Mumford

Look at What's Been Done!

Nine federal agencies formed the Mid-Atlantic Highlands Coordinating Council in May 1995. The mission of the council is to promote cooperation among federal, state, and local agencies and citizens' groups in managing the ecosystems of the Mid-Atlantic Highland region. The region includes territory extending east to west, from the Blue Ridge Mountains to Ohio, and north to south, from New York to North Carolina/Tennessee, including ecosystems of the Blue Ridge Mountains, the Appalachian Mountains, and the Appalachian Plateau uplands. The council will coordinate information and expertise to reduce duplication of effort in protecting the area's natural resources.

Since 1992, farmers in the Catskill Mountains in New York have been applying the Whole Farm Plan voluntary BMP program in an effort to secure a quality drinking water supply. The program began in response to the 1989 federal Surface Water Treatment Rule which required New York City to show that its water supply could be adequately protected without filtration. Construction of filtration systems is expensive, costing as much as \$5 to \$8 billion, plus \$200 to \$500 million in operations costs.

Rutland, Vermont Mayor Jeffrey Wennberg acted in May to protect the city water supply from the parasite *Cryptosporidium* which is carried by livestock and other animals and could enter the reservoir through runoff containing animal waste. Wennberg

prohibited the Cortina Inn from adding a riding stable to its Mendon facility near Rutland's water supply and told several homeowners in the area that they could no longer keep horses on their property. *Cryptosporidium* has been found in the Rutland water supply. The mayor has authority to take action opposing pollution sources within 300 feet of any water source entering the reservoir.

[Article submitted by W.T. Bishop of the Merrimack River Initiative.]

After 25 years of fishing restrictions due to high coliform bacteria levels, the Navesink watershed in New Jersey is expected to reopen to shellfishing in 1996 due to a successful watershed clean-up effort. This is a result of the construction of a local horse manure composting facility under the guidance of NRCS. The horse industry is a valuable component of the New Jersey economy.

An EPA-sponsored effort known as Community Creek Watch, which began in 1992 in response to deterioration of south San Francisco Bay in California, is gaining increased momentum. GIS and satellite technology used in the program has attracted involvement from citizens, students, and entry-level professionals with an interest in water quality protection.

Montana's Upper Clark Fork River Basin Steering Committee has developed a plan to balance water uses in the basin. Stream-flow depletions resulting from the over-appropriation of primarily agricultural water rights in the watershed are addressed in the plan.

The plan was required by the 1991 state legislature in an effort to resolve water reservation claims.

The Northeast Business Environmental Network, Inc. (NBEN) sponsored a Regulatory Improvement Opportunities Forum on April 27. The forum addressed methods to make environmental regulations more practical and efficient at gaining environmental benefits while maintaining economic competitiveness. NBEN is also taking the lead to establish an electronic information system to allow for the exchange of information pertaining to pollution prevention, regulatory requirements, and other environmental issues between businesses and others. For more information, contact Connie Morton at (508) 689-5354.

In an effort to protect the lives of people and wildlife, the Army is constructing two wildlife tunnels beneath a four lane parkway in Fairfax, Virginia. The 184 foot long tunnels are 20 feet wide and 12 feet high. Openings on the top of the passageway provide air and light. The \$1 million ecosystem protection project will connect a park and wildlife refuge, allowing for wildlife migration and combatting inbreeding.

ON CHANGE:

"No important change in human conduct is ever accomplished without an internal change in our intellectual emphases, our loyalties, our affections, and our convictions."

-Aldo Leopold

Do you have any favorite quotes? Please share them with us!

NEW IN PRINT

Design of the National Water-Quality Assessment (NAWQA) Program: Occurrence and Distribution of Water-Quality Conditions - The USGS recently released this report which describes the component of the NAWQA designed to relate the geographic distribution of water quality conditions to major sources of contaminants and background conditions in a consistent manner across the nation. For a copy of the report, contact Rosemary Musson by email to rmusson@srvaes.er.usgs.gov, or by phone at (703) 648-5702.

Review of Monetary and Nonmonetary Valuation of Environmental Investments, (IWR Report 95-R-2, February 1995) - This U.S. Army Corps of Engineers report 1) describes services provided by environmental resources and systems and methods for their measurement or valuation; 2) reviews existing federal agency research programs and products; 3) describes nonmonetary and monetary valuation techniques used by federal agencies; and 4) evaluates the resource constraints in potentially applying these techniques to Corps of Engineers projects. For more information, contact Gerald Stedje at (703) 355-2257.

Prototype Information Tree for Environmental Restoration Plan Formulation and Cost Estimation, (IWR Report 95-R-3, March 1995) - This U.S. Army Corps of Engineers report investigates the possibility of developing an informational tool for organizing and providing the type of data and in-

formation necessary for identifying and costing environmental restoration measures and techniques. For more information, contact Joy Muncy at (703) 355-0009.

Compilation and Review of Completed Restoration and Mitigation Studies in Developing an Evaluation Framework for Environmental Resources - Volumes I and II (IWR Reports 95-R-4 and 95-R-5, June 1995). This U.S. Army Corps of Engineers two-volume report provides an overview of the Corps of Engineers Evaluation of Environmental Investments Research Program and presents an initial data gathering effort to identify the important planning issues currently faced by Corps planners in assessing the efficiency and effectiveness of investments in environmental restoration, protection, and mitigation. For more information, contact Joy Muncy at (703) 355-0009.

EPA, Office of Wetlands, Oceans and Watersheds 1995 Publication List, EPA 840-B-95-001 - Published by EPA in March 1995, this list is available by calling the NCEPI at (513) 489-8190.

Cleaner Water Through Conservation, EPA 841-B-95-002 - This April 1995 EPA publication contains sections on water use in the United States, the effects of excessive water usage on water quality, water conservation, regional approaches to using water efficiently, and a statistical breakdown of interior home water use. It is available by calling NCEPI at (513) 489-8190.

Nonpoint Source Water Quality

Contacts, 1994-95 Directory - This directory, published by the Conservation Technology Information Center (CTIC) with assistance from the Natural Resources Conservation Service and the USEPA, contains over 400 NPS contacts and can be obtained for a \$2.00 postage and handling fee by contacting the CTIC by phone at (317) 494-9555, or via fax at (317) 494-5969.

Linking EPA's Geographic Initiatives, Including the Great Water Bodies Programs and the National Estuary Program - This report to Congress allows for the transfer of information gained from early geographic initiatives to new programs in an effort to prevent duplication of effort. For more information, contact Jill Abelson at (202) 260-9799.

Toward a Watershed Approach: A Framework for Aquatic Ecosystem Restoration, Protection, and Management - This report illustrates the use of the watershed approach to achieve sustainable development. An overview of federal, state, and local efforts and three watershed portraits are included. For more information, contact Coastal America at (301) 713-3160.

Water-Quality Monitoring in the United States: 1993 Report of the Intergovernmental Task Force on Monitoring Water Quality - This report of the Intergovernmental Task Force on Monitoring Water Quality, chaired by EPA and vice-chaired by USGS, examines the various water

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quality monitoring procedures of federal, state, and local agencies. Copies of this report and a separate "Technical Appendixes" can be obtained by contacting the USGS at (703) 648-5023, or via fax at (703) 648-6802.

Improving Wetland Public Outreach, Training and Education, and Interpretation; Guidebook for Creating Wetland Interpretation Sites Including Wetlands and Ecotourism; National Registry of Wetland Professionals and Wetland Sourcebook;

Effective Mitigation: Mitigation Banks and Joint Projects in the Context of Wetland Management Plans - These and other publications are available by contacting the Association of State Wetland Managers at (518) 872-1804. Call for list of publications and prices.

CALL FOR PAPER DEADLINES

September 30, 1995

AWRA Annual Symposium on Watershed Restoration Management: Physical, Chemical, and Biological Considerations, July 14-17, 1996, Syracuse, NY. Paper, poster, video, and software proposals requested. (Contact Dr. Jeffrey J. McDonnell, 315-470-6565)

October 2, 1995

Conference on Coastal Redwood Forest Ecology and Management, Humboldt State University, Arcata, CA, June 18-20, 1996. Paper and poster presentations requested. (Contact Dr. John LeBlanc, 510-642-6678)

TVA's fourth annual "RiverPulse" reports that last year's wet spring and summer helped to improve water quality in the Tennessee River. TVA's latest "report card" to the public says that the river system remains in good overall health--it is safe to swim in most locations tested and the fish are safe to eat from most lakes. TVA is distributing RiverPulse free to the public by mail, at marinas, and at TVA visitor centers. For more information, contact Debbie Hubbs at TVA at (615) 632-7559.

TVA's Clean Water Initiative and the Chattanooga, Tennessee Storm Water Management Division will team up this summer to implement a storm drain stenciling project for the city of Chattanooga. Youth organizations will be invited to stencil storm drains with the phrase "Dump No Waste--Drains to River," and to provide information to residents about pollution prevention practices. Contact Debbie Hubbs at TVA at (615) 632-7559 for more details.

The National Oceanic and Atmospheric Administration now offers a Coastal Guardian Hotline that people can call to request information on preserving the coast. The number is (800) 226-1234. The information is also available through an on-line environmental center called E2B2, modem number (913) 897-1040 (N-8-1).

The Corpus Christi Bay National Estuary Program (CCBNEP) in Texas is developing a management

plan which includes the study of an algal bloom that has persisted since the winter of 1989 and occurs over approximately one-third of the study area. The algal bloom, known as Texas brown tide, has shaded seagrasses, reduced the survival rate of fish larvae, and adversely affected recreational fishing. A proposal to control the brown tide through the use of a zooplanktonic grazer known to eat the alga is currently under consideration. For more information, contact Hudson DeYoe at the CCBNEP at (512) 985-6767.

The USDA Natural Resources Conservation Service, formerly the Soil Conservation Service, celebrated 60 years of natural resources conservation in May 1995 at a national "Celebration of the Land" ceremony in Washington, DC.

"Luck Isn't Enough: The Fight for Clean Water" is a 12 minute video geared toward local government officials that delivers a jargon-free introduction to NPS pollution. The video was originally developed by the University of Connecticut Sea Grant and Cooperative Extension programs. The video is available for loan and duplication from Regional EPA offices, or by contacting the NEMO Project at the University of Connecticut Cooperative Extension at (203) 345-4511 by phone, (203) 345-3357 by fax, or via email to carnold@canr1.cag.uconn.edu.

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In a joint House and Senate hearing on precision farming applications on June 19, 1995, USDA Secretary Glickman discussed precision farming, stating "Precision agriculture works through tractor-mounted computers and satellite connections to measure yields and anticipate fertilizer and pesticide needs within feet of the tractor's actual position. Precision agriculture will help family farmers and rural America. Farm operations of every size can reap the cost savings and environmental benefits of this technology."

The Archbold Village Council in Fulton County, Ohio recently committed \$10,000 to support the USDA Wetlands Reserve Program. The funds will assist local landowners with flooding problems along Bush Creek, adjacent to much of the area's cropland. The Wetlands Reserve Program will provide \$900 per acre for land to be restored to wetland conditions. The state will contribute an additional \$400 per acre for restoration of land within 200 feet of the creek.

A partnership between American Indians, government entities, and private landowners is developing solutions to common natural and cultural resource problems. The partnership, fostered by the Zuni River Watershed Act of 1992, has led to an effort to develop a comprehensive resource inventory and plan led by the Natural Resources Conservation Service. The effort is the first on Indian lands in New Mexico. For more information, contact Betty Joubert at (505) 761-4404.

The following is a listing of Internet resources which may be of interest to readers. To be added to the mailing list of "Internet Newsbrief," an electronic update service from the EPA Headquarters Library, contact Robin Murphy at ALL-IN-1 murphy.robin or at (202) 260-5080. Watershed Events appreciates Robin's contribution of these resources for readers.

EPA Efforts to Protect Ecosystems

URL = <http://www.epa.gov/ecoplaces/>
The efforts inventory consists of three parts: large scale projects over 100,000 square kilometers; local efforts less than 100,000 square kilometers; and national or regional activities involving multiple sites. The submission of project summaries is voluntary.

Safe Drinking Water Hotline

Email Address: hotline-sdwa@epamail.epa.gov
Inquiries on EPA's drinking water program, regulations, and standards are now accepted via email. For more information on email access to the hotline, contact Beth Hall at hall.beth@epamail.epa.gov.

Biodiversity and Ecosystems Network

URL=<http://straylight.tamu.edu/bene/bene.html>
The Biodiversity and Ecosystems Network (BENE) is a partnership initiated to foster cooperation and information exchange among those interested in biodiversity conservation and ecosystem

protection. All interested organizations are welcome to join.

Cryptosporidium - Special Morbidity and Mortality Weekly Report Recommendations and Reports Issue.

URL=<http://www.crawford.com/cdc/mmwr/mmwr.html>

Environmental Financing Information Network (EFIN)

Telnet [epaibm.rtpnc.epa.gov](telnet://epaibm.rtpnc.epa.gov), or modem (919) 549-0720, or modem 1-800-291-0349 (8-N-1). EFIN provides abstracts on financing alternatives for state and local environmental programs and projects. For more information on the contents of the EFIN database, or how to reach and search it, contact the EFIN hotline at (202) 260-0420, or via email to urban.ilsabe@epamail.epa.gov.

Access EPA through the CIESIN website

URL=<http://epawww.ciesin.org/national/accessepa.contents.html>
CIESIN is a pathfinder for hundreds of information resources, such as clearinghouses, hotlines, bulletin boards, libraries, databases, and scientific models. Descriptions and contact information are included for each resource listed.

U.S. Fish and Wildlife Service's National Wetlands Inventory Arc/Info Simple Macro Language Programs

URL = <http://www.nwi.fws.gov/>
Macros automate the conversion

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of the National Wetlands Inventory DLG3 digital files to PC ARC/INFO coverages. For more information, or help, contact Mike Murphy via email to mike@enterprise.nwi.fws.gov.

Biodiversity and Biological Collections Gopher (Harvard)

URL=[gopher://nhh.harvard.edu](http://nhh.harvard.edu)

The Gopher includes access to the Gray Herbarium Index of New World Plants and the Harvard Biological Collections Catalogs.

Regulatory Affairs Information

URL=<http://www.cybernetics.net/users/rainfo/reglink1>

Site links listed include the Federal Register, the International Standards Organization, the Morbidity and Mortality Weekly Report, and the WWW Virtual Library.

Great Lakes Environmental Wire (GLEW)

URL=<http://cedar.cic.net/~glew/>

The wire provides a weekly, full-text update on stories covered by newspapers in the region. A link to the GLEW archive is also provided.

The Environmental Organization Directory

URL=<http://www.rain.org/~eis/>

Directory of over 8,000 environmental organizations, associations, institutes, government agencies, and commercial enterprises. Categories for browsing are available.

TRAINING OPPORTUNITIES

September 6-9, 1995

Ground and Surface Water Interaction Zones: A Watershed Field Workshop, Flathead Lake Biological Station, Polson, MT, sponsored by USEPA and the National Park Service, in cooperation with the University of Montana. This hands-on workshop is geared toward local and state water resource managers. (Contact Flathead Lake Biological Station, the University of Montana, 406-982-3301)

September 13, 1995

CZMA Federal Consistency Workshop for the Pacific Islands, Honolulu, HI, sponsored by NOAA. (Contact David W. Kaiser, 301-713-3098, ext. 144)

October 1-5, 1995

Partners in Flight Conservation Plan: Building Consensus for Action, Cape May, NJ. (Contact D. Lawrence Planners, 609-344-1333)

November 2-3, 1995

Ecological Restoration Workshop, Chattanooga, TN. Streambank restoration training sponsored by the TVA Clean Water Initiative. (Contact Debbie Hubbs, 615-632-7559)

Watershed Events welcomes the submission of training opportunities.

Watershed Events

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Debbie Hubbs, Tennessee Valley Authority
Leigh Skaggs, U.S. Army Corps of Engineers
Terry Thompson, U.S. Geological Survey

Watershed Events is intended to update interested parties on the development and use of watershed protection approaches. These approaches consider the primary threats to human and ecosystem health within the watershed, involve those people most concerned or able to take actions to solve those problems, and then take corrective actions in an integrated and holistic manner.

Direct questions and comments about *Watershed Events* to:

John T. Pai
Office of Oceans, Wetlands,
and Watersheds
U.S. EPA (4501F)
401 M Street, SW
Washington, DC 20460
(202) 260-8076

LEARN FROM IT:

"Love this river, stay by it, learn from it.

Yes, he wanted to learn from it, he wanted to listen to it. It seemed to him that whoever understood this river and its secrets, would understand much more, many secrets, all secrets."

-Hermann Hesse

CONFERENCE SCHEDULE**August 29-September 1, 1995**

The Sixth Annual Utah Non-point Source Water Quality Conference, Cedar City, UT (801-538-7175)

September 17-20, 1995

Versatility of Wetlands in the Agricultural Landscape, Tampa, FL (616-428-6327)

October 2-6, 1995

Linking Land and Water: Third National Nonpoint Source Watershed Monitoring Workshop, Seattle, WA (Contact Teena Reichgott, 206-553-1601)

October 15-17, 1995

The Future of California Forests: Perceptions, Expectations, and Realities, Sacramento, CA (Contact Janice Montano, 510-215-4222)

October 24-26, 1995

Mid-Atlantic Highlands Environment-Now and Tomorrow, Davis, WV (Contact Eastern Research Group, Inc., 617-674-7374)

November 6-11, 1995

15th International Symposium of the North American Lake Management Society on Aquatic Ecosystem Stewardship, Toronto, Ontario, Canada (705-766-2418)

November 13-14, 1995

Annual West Coast Wastewater Pollution Prevention Symposium, San Francisco, CA (415-744-1948)

December 12-15, 1995

National Agricultural Ecosystem Management Conference, New Orleans, LA (Contact Lyn Kirschner, 317-494-9555)

THE SEVEN P'S OF A SUCCESSFUL WATERSHED PROJECT

Joe Van Berkel, County Conservationist for the Sauk County Land Conservation Department, presented the "Seven P's" during a recent meeting of the western Wisconsin Priority Watershed Program project managers.

1. **Pick**—Look for a conservation ethic and a cooperative spirit.
2. **Politics**—Involve town and county boards.
3. **Personnel**—Offer competitive salaries and allow staff opportunities for professional growth.
4. **Peer Pressure**—If the efforts of one farmer are being negated by the actions of a farmer up-

stream, let the first farmer know.

5. **Publicity**—Get to know your local newspaper and radio reporters and provide them with concise and creative information. Use exhibits, tours, and breakfasts for added publicity.
6. **Persistence**—Keep in contact with people about participating in the project; even if they were not interested at first, they may change their mind.
7. **Personal Service**—Be flexible. Keep in mind that the goal is to improve water quality and welcome creative ways to reach that goal.

Source: *Keeping Current*, Volume 3, Number 4, May 1995

Did You Know?

- ◆ The quantity of water on earth remains constant—326 cubic miles.
- ◆ About 150 gallons of water are used to produce a newspaper.
- ◆ Water weighs 62.4 lbs per cubic foot.
- ◆ Water is known as the "universal solvent" because it can dissolve almost anything when given enough time.
- ◆ Evaporation from oceans accounts for 85 percent of the water vapor in the atmosphere.
- ◆ A tree gives off 70 gallons of water a day. Transpiration of one acre of corn yields 4,000 gallons of water a day.
- ◆ With the exception of ammonia, water absorbs heat better than any other substance.

EPA's Water Programs Go On-Line

The EPA Office of Water/Office of Wetlands, Oceans, and Watersheds is beginning to use the Internet to enable the public and federal, state, and local partners to get information on America's water resources. Under development, the new Water Information Network (WIN) is a means to promote partnerships and communication and to assist communities interested in the environmental challenges facing America's water resources. Information on the WIN is

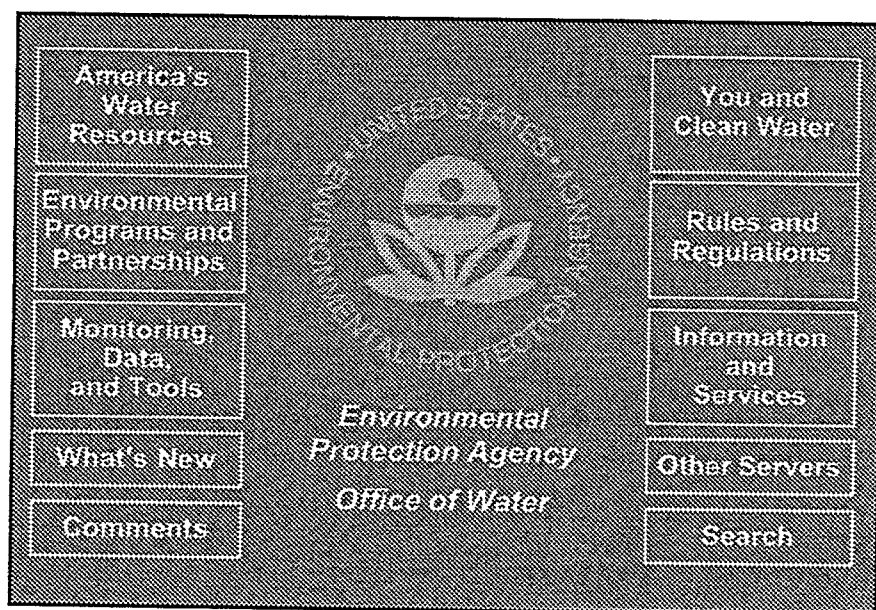
designed to flow from those who have it to those who need it to take action in the management of water resources.

Currently, access to newsletters, fact sheets, brochures, publications, and other program information about the quality of the nation's water resources and related EPA goals, programs, and regulations is available through the WIN. Access to water quality monitoring methods, tools, and automated information

systems, such as STORET, is also provided. Information is exchanged through hotlines, bulletin boards, and group email conversations. Connections to countless other water information holdings of federal, state, and local partners on the Internet are possible via the WIN.

The WIN utilizes EPA's public access servers and can be accessed over the World Wide Web or Gopher. Enter the Universal Resource Locator (URL) for the EPA homepage: <http://www.epa.gov> and go to EPA Offices and Regions, then to Office of Water, or enter <http://www.epa.gov.OWOW> and go directly to WIN. Users need an Internet provider with an Internet Protocol (IP) address, at least a 386 or comparable personal computer, four megabytes of RAM, and tools for reviewing the graphics on the World Wide Web.

Early focus of the WIN has been on EPA's resource programs for watersheds, wetlands, coasts, and oceans. Added information, links to partners, homepages, and other services are coming to the WIN. For more information on this effort, contact Karen Klima at (202) 260-7087, or send email to klima.karen@epamail.epa.gov.



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Under
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Wastewater
Management

Under
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Drinking Water


EPA
Regions

Did You Know?

- ◆ A family of four in the United States consumes 360 gallons of water per day at home. Only 10 gallons of this is used for cooking and drinking.

- ◆ Watering the lawn and washing the car consume 100 gallons of water.
- ◆ Every living thing on earth is mostly water. An elephant is 70 percent water; a tomato, 90 percent water; and humans, 65 percent water.



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