United States
Environmental Protection
Agency

Office of Water (WH-553)
Washington, DC 20460

EPA-841-N-92-005
August–September 1992
#23

EPA News-Notes

The Condition of the Environment and the Control of Nonpoint Sources of Water Pollution

A Water Quality Highlight

EPA Region VI Develops a Nonpoint Source Environmental Excellence Awards Program

EPA's Region VI, headquartered in Dallas, contains the states of Texas, Oklahoma, Arkansas, Louisiana, and New Mexico. In 1991 the region initiated the Regional Administrator's Environmental Excellence Awards Program for the control and prevention of nonpoint source pollution. Winners for 1992 have just been announced.

The 1992 Winners are:

I: Regulatory Program
"The Lake Travis Nonpoint Source Pollution Control Ordinance," Lower Colorado River Authority, Austin, Texas

II: Technical Assistance Program
"Technical Assistance Program," Barton Springs/Edwards Aquifer Conservation District, Austin, Texas

III: Educational Program
"Colorado River Watch," Lower Colorado River Authority, Austin, Texas

IV: Other/Pollution Prevention
"Household Hazardous Waste Collection Program," City of Austin, Texas

V: Individual Achievement
No award this year.

VI: Agency/Organization Recognition
Washington County Conservation District, Fayetteville, Arkansas

All nominees, including those nominated in Category V where no award was made, received Certificates of Appreciation from the Regional Administrator.

INSIDE THIS ISSUE

EPA Region VI Develops a Nonpoint Source Environmental Excellence Awards Program (continued)

The purpose of the program is to recognize agencies, organizations, individuals, and projects that have made significant accomplishments in the control and prevention of nonpoint source pollution; to promote state, federal, and public support in attaining and maintaining water quality; and to heighten public awareness of NPS pollution problems and solutions.

Here's how the program works:

- There are six categories of awards:
  - I. Regulatory Program
  - II. Technical Assistance Program
  - III. Educational Program
  - IV. Other (e.g. demonstration project, innovative technology, watershed project, pollution prevention, etc.)
  - V. Individual Achievement Award
  - VI. Agency/Organization Recognition
- Each state may nominate as many as two candidates for any category, but not more than seven nominees per state for all categories.
- Nominations are screened by Region VI for any non-compliant facilities, etc.
- One regional winner for each category is selected by a 12-member awards committee. This year the committee included representatives from the University of Arkansas at Little Rock; the League of Women Voters, Texas; Conoco Inc., Oklahoma; Oklahoma Farm Bureau; the Soil Conservation Service, Louisiana; and EPA Region VI staff from the Office of Groundwater, the Permits Branch, the Marine and Estuarine Section, the Wetlands Program, and the Pesticides and Toxics Branch.

[For more information, contact: Petra Sanchez (6WQS), U.S. EPA Region VI, First Interstate Bank Tower at Fountain Place, 1445 Ross Avenue, 12th Floor, Suite 1200, Dallas, TX 75202-2733. Phone: (214) 655-7140.]

A Commentary . . .

Lakes Conference Brings Citizens, States, and Feds Together— Presents Exciting Opportunities

EDITOR'S NOTE: The following comments were contributed by EPA's Clean Lakes Program Chief Frank Lapensee. Next year's conference is already in the planning stages. The theme will be the role of watershed analysis and controls in lake protection.

The national conference entitled *Enhancing the States' Lakes Management Programs*, was held May 6-8 in Chicago for the fifth consecutive year. This year the theme was "Strengthening State and Local Interactions," and it was the most productive, rewarding and exciting of the meetings we have had. The opportunities it presented were beyond my wildest expectations. We have made a giant step forward in meeting our goal to support and improve state lake programs and beyond that, to restore and protect our nation's lakes.

This year, we invited 28 state-wide lake associations to join our conference to discuss lake issues important to volunteer citizen organizations. Twenty-seven of the 28 associations accepted our invitation and participated as full partners in exchanging ideas and interacting, in many cases for the first time, with other lake associations, state lake program managers, and federal lake program managers.

The conference was sponsored by EPA's Clean Lakes Program and EPA Region V under a grant to the Northeastern Illinois Planning Commission, in cooperation with the North American Lake Management Society. The conference featured 11 sessions, including a very active workshop on strengthening relationships between states' lakes programs and state-wid citizen lake associations. There was also an exceptional presentation by Robert Korth on improving communication skills; a very effective training session by Dianne Russell on enhancing leadership skills for volunteer organizers; and an informative presentation by Dave Sabock on lake water quality standards.

Lakes Conference Brings Citizens, States, and Feds Together— Presents Exciting Opportunities (continued)

It is clear that state lake programs must have the active support and involvement of citizens to survive and grow. This conference was our first attempt to bring together the state lake program manager and the citizens represented by their state-wide lake associations. We wanted the citizen to be a full participant in this conference, and it really paid off. We feds learned, the states learned, and the citizens learned; we all walked away from this conference with something we can use to improve the quality of our programs.

The feds and the states learned about the capabilities and enthusiasm that citizens can bring to the program and the potential support they can provide toward maintaining a state program. The citizens learned of the strengths and limitations of the federal and state programs, who to contact for assistance in developing their programs, and how to effectively run a volunteer organization.

The conference demonstrated the values of broadly-based teamwork.

[Single copies of the conference proceedings will be available at no cost later this year. To reserve a copy, please contact Bob Kirschner, Northeastern Illinois Planning Commission, Natural Resources Department, 400 W. Madison St., Room 200, Chicago, IL 60606. Phone: (312) 454-0400.]

EDITOR'S NOTE: Anyone interested in using volunteers for lake monitoring should write to the Watershed Branch (WH-553), USEPA, Washington DC 20460, and ask for their publication: *Volunteer Lake Monitoring: A Methods Manual,* EPA 440/4-91-002, December, 1991. No charge. Also, on the general use of volunteers for water quality monitoring, there is an excellent EPA publication entitled *Volunteer Water Monitoring: A Guide for State Managers,* EPA 440/4-90-0109, August 1990. Copies can be obtained by writing to the Monitoring Branch (WH-553), USEPA, Washington DC 20460.

News-Notes Editorial Policy

EDITOR'S NOTE: During recent weeks there have been inquiries regarding the Editorial Policy under which *NPS News-Notes* is written and published. In response, we are sharing the policies that we have followed over the three years that *News-Notes* has been in operation.

We invite comment and our readers' views, pro and con. The big question is how may we best meet the needs for information on the condition of the environment and the control of nonpoint sources of water pollution. Another challenge is presenting information and various perspectives on controversial issues in a lively and straightforward manner without offending the sensibilities of our readers. Use the Coupon on page 27 and let us have your views on how we are doing and on our editorial policies. We need to be sure that our policies fit your needs.

Policies

1. ***Purpose and message*** — *NPS News-Notes* performs a communications and outreach function. It is a publication of the Assessment and Watershed Protection Division of EPA's Office of Wetlands, Oceans, and Watersheds. *News-Notes* is published in the public interest and is available to interested readers without cost. It is an occasional bulletin concerned with the condition of the environment and the management and control of nonpoint sources of water pollution. *News-Notes* deals with nonpoint sources, watershed management, the environment, and affected ecosystems in a holistic, inter-related, and inter-dependent manner. Its purpose is to provide readers with information on current happenings — public and private — and emerging public policies and technologies on its range of environmental concerns.

2. ***Subject Matter*** — *News-Notes* subject matter comes from wherever environmental and water quality things are happening, including local, state, other federal agency, and private sector activities. Occasionally, some of the material in News-Notes will be considered controversial by some people. *News-Notes* seeks to presents ranges of views on controversial topics and strives to maintain an objective voice. The commentary section of *News-Notes* is normally devoted to a range of attributed views of people active or influential in nonpoint source or environmental matters, including members of the editorial staff. These views are not statements of EPA policy unless specifically identified as such.

3. ***Audience*** — *News-Notes*' primary audience is state and local government; those on-the-ground where the action is. Other audiences, federal agencies, the private sector, citizen's groups, and the academic community are welcomed as readers, since they too are important actors and participants in the development of environmental policies and action.

4. ***Authorship*** — Unless otherwise attributed, all material in *News-Notes* is prepared by the editorial staff.

Noteworthy Water Quality Happenings

Water Quality 2000 Identifies National Water Quality Problems

The Water Quality 2000 project, which last June concluded Phase II with the publication of "Challenges for the Future," expects to issue a Phase III report in September.

Phase II was an extensive effort to document the problems facing surface water, groundwater, and drinking water. The report was the product of 18 months of effort on the part of 10 workgroups involving more than 150 people. It describes the present condition of the country's water, the causes of water resource problems, and obstacles to improvement. It concludes by pointing the direction for Phase III workgroups to go in seeking solutions.

The four-phase Water Quality 2000 project is a cooperative effort by representatives of over 80 groups with diverse interests in water policy. The project brings scientists, engineers, industry, environmental organizations, and governments together to develop recommendations for the 21st century's water quality goals and policies. Phase I, identifying the organizations goals and objectives, began in 1988 with a conference organized by the Water Environment Federation (WEF).[1]

A year later, a second conference produced a goal statement:

> *To develop and implement an integrated policy for the nation to protect and enhance water quality that supports society living in harmony with healthy natural systems.*

Participants at the conference pledged to take a "long-range, visionary, and holistic perspective" in developing a national water quality agenda.

The Phase II workgroup found that the lack of such an integrated approach in legislation, funding, water quality institutions, and policies, is the major impediment to solutions. Other impediments are inadequacies in research, public education, and the number of trained professionals.

Evaluation of Present Conditions Hampered by Lack of Data

Even the task of describing the condition of the nation's water was made uncertain by irregular, inadequate, and inconsistent monitoring approaches. "Ideally," the report states, "to measure progress of clean water programs nationally, investigators would have access to regularly collected data on physical, chemical, and biological conditions in fresh and marine waters, groundwater, and aquatic habitats." But, the report continues, these data are not often available. 305b reports are supposed to provide data to evaluate progress toward CWA goals, yet they are quite limited in the type of data they contain. Data on sediment and aquatic life are two areas the report says are insufficient.

Existing data indicate that much groundwater and surface water is contaminated. Fish tissue is also contaminated in many waterbodies. The loss or degradation of aquatic habitat is not monitored in any comprehensive way nationwide, but indications are that it is continuing; the report states that one-third of North American fish taxa are in danger of extinction.

"Challenges for the Future" does not paint a completely bleak picture, however; it notes that many point sources have come under control and many waters have regained their designated uses. The return of certain fish species to their native waters has marked a turning point for some waterbodies.

Lifestyle Choices Root Cause of Water Quality Problems

"Challenges for the Future" reported the sources of impairment as: agriculture, community wastewater, atmospheric deposition, industry, land alteration, introduction of exotic species and overharvest of native species, transportation, urban runoff, and hydromodification.

The root causes of water quality problems, however, were attributed to societal values and lifestyle choices. The report categorized these as:

- How (and where) we live

[1] Formerly the Water Pollution Control Federation (WPCF).

Water Quality 2000 Identifies National Water Quality Problems (continued)

- How we produce and consume goods
- How we farm
- How we transport people and goods
- How we plan
- How we have acted in the past

Phase III Will Target Solutions

The report concluded by pinpointing areas for which Phase III will develop solutions: urban and rural runoff, groundwater, toxic constituents, aquatic ecosystems, and drinking water. But, the major challenge, it stated, is to "move the debate over water quality toward the root causes of degradation in water resources presented in [the] paper. In practice, this means thinking more carefully about how to pursue societal goals for living, working, farming, and producing in ways that are consistent with improving the quality of the nation's water."

In Phase IV, the project will focus on communicating the policy recommendations within the participating groups and to Congress, other decision-makers, and the public.

[More information on the project and copies of "Challenges for the Future: Interim Report" ($20) are available from Tim Williams, Water Quality 2000, 601 Wythe St., Alexandria, VA 22314. Phone: (703) 684-2418.]

National Wildlife Federation Issues a Report — Waters at Risk: Keeping Clean Waters Clean

EDITOR'S NOTE: The following article was prepared by the National Wildlife Federation. Their views are printed here as a matter of general interest to our readers in this period of continued discussion on the reauthorization of the Clean Water Act.

The National Wildlife Federation recently issued a report, *Waters at Risk: Keeping Clean Waters Clean,* that concerns the failure of state and federal governments to protect pristine surface waters from degradation.

In 1972, Congress passed the Clean Water Act establishing two fundamental goals: attainment of prescribed water quality standards in already polluted waters and *maintenance* of existing high quality in non-polluted waters, including pristine lakes, rivers, estuaries, and coastal waters. Significant progress had been made on the "attainment" goal. However, efforts of the U.S. EPA to develop programs that prevent degradation of high quality waters have been meager and half-hearted. Instead of taking action to protect pristine waters in this nation, EPA has deferred to the states. EPA's guidelines, which call for *no* degradation to "outstanding resource waters," are merely advisory.

To evaluate state efforts, the National Wildlife Federation requested states to complete a voluntary survey. Of the 46 states that responded, eight reported having no state legal authority to protect outstanding resource waters, ten reported using state guidelines less protective than EPA's standards, and only 13 reported using a systematic inventory process to identify such waters. Moreover, in states where a designation program exists, only 3.53 percent of the river miles had in fact received designation as outstanding resource waters; 0.37 percent are protected under stringent federal guidelines; and the remaining 3.16 percent are designated under the less protective state classifications.

Because of the lack of adequate protection, many historically clean watershed areas are now beginning to show the effects of pollution and other human activities. Several areas are profiled in the report, including Lake Superior, Flathead Lake in Montana, Acadia National Park in Maine, and the Florida Keys. These areas will remain clean and beautiful only if they receive increased protection. The report therefore calls upon Congress to mandate a meaningful and uniform federal program for the protection of pristine waters nationwide through amendments to the Clean Water Act that would:

(1) require EPA to establish and enforce minimum requirements for state outstanding national resource waters programs to ensure equivalency with federal classifications;

(2) require the states to identify waters eligible for designation and determine whether specific waters should receive designation;

National Wildlife Federation Issues a Report — Waters at Risk: Keeping Clean Waters Clean (continued)

(3) require EPA to review state programs and decisions on designating specific waters, especially when the waters are in or affecting nationally designated sensitive lands such as parks, forests, wildlife refuges, recreational areas, and wilderness areas;

(4) impose an affirmative duty on federal land managers to seek designation of waters in or affecting their areas; and

(5) allow citizens to nominate specific lakes, rivers, or coastal waters for designation.

[Copies of the report may be ordered from the National Wildlife Federation, Correspondence Department at a cost of $6.00 plus shipping and handling, by calling 1 (800) 432-6564. Questions concerning the report itself should be directed to Stephanie Grogan, National Wildlife Federation, Resource Conservation Department, Environmental Quality Division, at (202) 797-6898.]

USGS Reports on Fertilizers and Pesticides in Delmarva Groundwater

A report on nitrate and pesticides in the groundwater of the Delmarva Peninsula of Delaware, Maryland, and Virginia was released at the end of May by the U.S. Geological Survey (USGS), Department of the Interior.

This report, USGS Circular 1080, is the first in a series of general interest publications that the USGS plans to release on findings from the USGS National Water Quality Assessment (NAWQA) program. The reports are designed to increase public awareness of the importance of water quality and to aid decision-makers at all levels of government on water-quality issues that affect human life and health and the health of the nation's natural resources.

According to the report, elevated concentrations of nitrate are found at all depths in the water-table aquifer (the aquifer closest to the surface) but are not found in the deeper confined aquifers that are the chief source of public water supplies on the peninsula.

"Fifteen percent of the samples from the water-table aquifer contained nitrate concentrations that exceed the level set for safe drinking water," said Pixie A. Hamilton, hydrologist and principal author of the report.

Pesticides generally were not found in the parts of the water-table aquifer that are commonly used for water supply. Only four samples in the entire project area had pesticide concentrations in excess of the drinking water standards. These results suggest that the human health risk from pesticides in groundwater is minimal in most of the Delmarva Peninsula at this time.

The report was written by USGS hydrologists with assistance from an advisory group of about 20 representatives from federal, state, and local agencies and university programs involved with water resources or agriculture.

"Applications of lime, commercial fertilizer, and manure have changed the natural quality of groundwater in the water-table aquifer in a large part of the peninsula," said Hamilton. "Nitrate from fertilizers has become one of the major dissolved constituents in shallow groundwater in agricultural areas, which cover nearly 50 percent of the land area on the peninsula," explained Hamilton.

"Nitrate concentrations exceed the maximum contaminant level (MCL) for drinking water established by the U.S. EPA in about 15 percent of nearly 300 groundwater samples collected from the water-table aquifer from 1980 to 1990," said Hamilton.

Less than one percent of the samples from the deeper aquifers exceeded the MCL for nitrate. However, the potential movement of groundwater with high nitrate concentration in the water-table aquifer to the deeper aquifers is a concern in the project area.

According to the EPA, the MCL is the maximum permissible level of contaminant in water that is delivered to any user of a public water system. MCLs are based on health effects, techniques for analyzing and treating contaminants, and costs associated with compliance. The value of the MCL for nitrate is 10 milligrams per liter as nitrogen (or 44 milligrams per liter as nitrate).

In contrast to nitrate, 94 percent of the detections for pesticides were at concentrations below the MCL values established by EPA as of November 1990.

The samples were tested for about 40 different pesticides, including most agricultural pesticides used in the project area.

Most of the pesticides detected were herbicides used on corn or soybeans. The concentrations detected were mainly in samples collected from wells in the upper 20 feet of the water-table aquifer at sites near farmland.

USGS Reports on Fertilizers and Pesticides in Delmarva Groundwater (continued)

The report also notes that the quality of shallow groundwater in the Delmarva Peninsula affects the quality of surface water. For example, groundwater with elevated nitrate concentrations discharges into the Chesapeake Bay and its tributaries and is probably a significant source of nutrients to the ecosystem of the bay.

Ongoing changes in crop-management practices will probably reduce the amount of nitrate that moves from the soil to the groundwater and may eventually reduce nitrate concentrations in surface water. Because of the slow flow rates of groundwater, however, improvements in water quality may lag behind changes in agricultural practices by years or decades.

"This report is a product of a USGS assessment of groundwater quality in the Delmarva Peninsula," according to Robert J. Shedlock, hydrologist and chief of the Delmarva Peninsula project. The Delmarva Peninsula is one of seven pilot project areas in the nationwide NAWQA, which began in 1986.

NAWQA is designed to develop an improved understanding of the status and trends in the quality of a large part of the nation's groundwater and surface water resources. Information from NAWQA will address specific water-quality concerns relevant to policymakers and managers at all levels of government. The full scale NAWQA program began in 1991 with the selection of 20 additional projects and will eventually include 60 projects that will cover a large part of the United States.

The interagency communication and cooperation that were fostered during the pilot projects will continue in the full-scale NAWQA program. Each of the 20 new projects has formed an advisory group similar to the one formed for the Delmarva Peninsula project.

As the nation's largest agency dealing with science and information about water resources, the USGS routinely monitors the quantity and quality of the nation's surface and groundwater resources. Measurements are made at more than 45,000 sites across the nation in cooperation with more than 1,000 federal, state, and local agencies.

[Published as USGS Circular 1080, single copies of the report, entitled "Are Fertilizers and Pesticides in the Ground Water? — A Case Study of the Delmarva Peninsula, Delaware. Maryland and Virginia," by P. A. Hamilton and R. J. Shedlock, are available at no charge from the USGS Books and Open-File Section, Denver Federal Center, Box 25425, Denver, CO 80225.]

Audubon's America Conservation Project and 1992 National Wetlands Protection Awards Announced

At a reception hosted by Congressman Wayne T. Gilchrest (R-Md.), a major new landscape conservation project was launched, "Audubon's America," cooperatively sponsored by the National Audubon Society and EPA's Wetlands Division.

A descriptive brochure developed by the National Audubon Society has this to say about the project:

> *The purpose of Audubon's America is to protect, conserve, restore, enhance, and interpret the natural and cultural resource values of the land and water areas where John James Audubon lived, traveled, wrote, painted, and observed. This will be accomplished by recognizing and establishing a system of connected public and privately owned natural areas within a 34-state region.*
>
> *The network will grow through the voluntary long-term coordinated efforts of local, state, and federal governments, private organizations, and landowners who will prepare and implement landscape conservation plans.*
>
> *Audubon's America will be developed to commemorate John James Audubon's past and to use his work as an inspiration to influence the future use of our natural and cultural resources. The theme of commemorating Audubon's work and experiences will be used to organize, recognize, and coordinate a series of local initiatives that will raise the pubic's awareness of the need to protect wetlands and other natural resources, encourage local action, and help develop an appreciation of the nation's natural heritage.*
>
> *A series of workshops, organized as a part of the National Audubon Society's Save Our Wetlands campaign, will be used to begin the project. Technical and financial assistance will be provided by other government agencies and private funding sources.*

The reception, held at the Rayburn House Office Building at the end of May, also served to launch American Wetlands Month and to honor 1992 National Wetlands Protection award winners.

Audubon's America Conservation Project and 1992 National Wetlands Protection Awards Announced (continued)

New Jersey ecologist Ralph E. Good received the National Wetlands Lifetime Achievement Award posthumously for his innovative work in wetland protection. He established a research station in the New Jersey Pinelands.

North Dakota Governor George A. Sinner received a special award for his public policy leadership in wetlands protection that resulted in North Dakota's 1987 no-net-loss-of-wetland law and the state wetlands management committee.

Other award winners included Henry N. Barkhausen, director of Citizens to Save the Cache River in Jonesboro, Ill.; Kenneth F. Bailey, wetlands program manager, Division of State Lands, Salem, Ore.; and David G. Burke, Nontidal Wetlands Division chief for the Maryland Department of Natural Resources in Annapolis.

Steve Gordon, senior program manager for the Lane Council of Governments in Eugene, Ore.; Ray McCormick, a farmer from Vincennes, Ind.; and Ross Murphy, director of the Deep Fork Wetlands Coalition in Tulsa, Okla., were also honored.

The reception was sponsored by the Environmental Law Institute's *National Wetlands* newsletter and the Terrene Institute.

[For further information on Audubon's America, contact: EPA's Wetlands Protection Hotline at 1-800-832-7828; Wetlands Division, U.S. EPA, (A-104F), 401 M Street, SW, Washington DC 20460; or the National Audubon Society, Mid-Atlantic Regional Office, 1104 Fernwood Avenue, Suite 300, Camp Hill, PA 17011; Phone: (717) 763-4985.]

Three Water Projects Included in 1992 EPA Administrator's Awards for Excellence

EPA Administrator William K. Reilly's awards program recognizes excellence in efforts to work toward a cleaner environment. The 1992 program focused on outstanding achievements in pollution prevention and included three water projects — one point source and two nonpoint source. Recipients included two local government units and a state university. The awards and their projects were:

■ ***County Sanitation District of Orange County, California,* Pollution Prevention Program:** As a result of the Orange County District's Pollution Prevention Program, the quantity of industrial wastewater flow tributary to the district's sewerage system has been reduced by 50 percent. The reduction in toxics has been so effective that for the last three years, the influent heavy metals have met the district's National Pollution Discharge Elimination System standards without benefit of treatment. Implementation of the program has also resulted in over 95 percent of the metal finishers and federally regulated industries installing flow restrictors or control valves to reduce wastewater usage, or installing basic waste minimization equipment to reduce the volume of hazardous wastes and wastewater discharged to the district's sewerage system.

■ ***Bourne, Plymouth, and Wareham Planning Boards, Massachusetts,* Buttermilk Bay Nitrogen Overlay Protection District:** The towns of Bourne, Plymouth, and Wareham share the drainage area to a shallow coastal embayment, Buttermilk Bay, which is part of the larger Buzzards Bay estuary in southeastern Massachusetts. Nitrogen levels in Buttermilk Bay are increasing, and some localized areas are already experiencing nuisance conditions characterized by excess algae growths. The pollution prevention goal was to limit the amount of nitrogen to that which the bay could assimilate without harming the delicate ecosystem and denying beneficial uses. After determining that the expected development pattern would overextend the bay's nitrogen carrying capacity, the towns changed zoning in the drainage area and formed the first Nitrogen Overlay District in the nation. (See *News-Notes* #21, page 21, for a review of a video on the Buzzards Bay and Buttermilk Bay situation.)

■ ***Virginia Polytechnic Institute, Blacksburg, Virginia,* Agricultural Nonpoint Source Pollution Prevention:** The Virginia Tech Department of Agriculture Engineering is committed to the agricultural nonpoint source pollution component of the Chesapeake Bay cleanup effort. The program goals have been advanced through numerous research, demonstration, and technology projects. In cooperation with state and federal agencies, interdisciplinary teams of research and extension personnel, citizen action organizations, and the agricultural community, the Department of Agriculture Engineering is making a strong contribution to the state's, and the nation's, commitment to restore the Chesapeake Bay.

Utah State University/Utah Extension Create New Watershed/Riparian Extension Specialist Job

The Utah Extension Service may be the first in the nation to have created a position that has as its main focus enhancing surface water quality and riparian area management. Watershed/Riparian Extension Specialist Dr. Thomas L. Schmidt started in April 1992 with his initial goals being to:

(1) provide technical assistance and expertise on watershed/riparian issues to public land managers, county agents and state extension specialists, federal and state agency personnel, and watershed user groups;

(2) act in a liaison capacity to coordinate riparian and water quality management among commodity producers and environmental groups; and

(3) conduct educational programs on the importance of riparian areas for enhancing water quality and providing other amenities such as high quality recreation and wildlife habitat.

The unique position grew out of Utah State University's (USU) recognition of how important watersheds and riparian areas are for overall environmental health. Water quality was recognized as being one of the primary management goals for natural resources, but the specifics of riparian area management were generally addressed through existing specialists. USU realized that future land management actions will be approved and evaluated based initially on their impacts on water quality. As a result, USU, in conjunction with Utah Extension Service, created the position.

Schmidt said that an additional goal for him is to demonstrate the potential for similar programs in other states. "There are tremendous opportunities for Extension-related activities to deal directly with watershed/riparian area management issues in all 50 states. It is a matter of developing the program to fit the specific needs of each state."

EDITOR'S NOTE: Dr. Schmidt has advised *News-Notes* that because this is a relatively new position, he is looking for watershed/riparian area-related brochures, guides, circulars, etc., designed for general audiences. If any of our readers have produced, or have available, examples of these types of publications, he would appreciate receiving copies. In addition, if you are interested in being involved in the development of similar publications and projects, please contact him. He may be reached by mail or phone: Thomas L. Schmidt, Watershed/Riparian Extension Specialist, College of Natural Resources, Utah State University, Logan, UT 84322-5240. Phone: (801) 750-4036.

New Water Quality Standards Video Stresses Economics

A new video, *Economic Considerations in Water Quality Standards,* has been released by the EPA Office of Water's Office of Science and Technology. The 15-minute video focuses on the economic factors that are considered in the water quality standards process. The video discusses *why* economics may be considered, describes *where* in the process economics are considered, and discusses *how* economic considerations are used.

[This video is available for loan and may be obtained by calling Frances A. Desselle at (202) 260-1320.]

News From The States

Wisconsin Extension's Six Building Blocks for Volunteer Programs

The University of Wisconsin-Madison has developed a plan for volunteer programs in water quality. The foundation of the plan is based on six principles or building blocks.

In the March/April issue of *Keeping Current,* Sara M. Steele and Cathaleen Finley of UW-Madison concluded that drawbacks in time needed to find and train volunteers are outweighed by multiple advantages:

- Volunteers can reach people that agency staff may not.
- By their skills and numbers, volunteers can broaden the effectiveness of a project.
- Volunteers build community support for projects and for the agencies involved.

Wisconsin Extension's Six Building Blocks for Volunteer Programs (continued)

- By helping volunteers build skills important to protecting water quality, a project can help a community increase its long-term capacity to deal with water quality concerns.

According to Steele and Finley, the building blocks make the time and effort expended in developing volunteer programs worth the effort and are effective in both large and small programs. They note, "Like many activities, the potential of a watershed project volunteer program grows in proportion to the effort made to learn from the experience of others."

Six Building Blocks For a Successful Volunteer Program

1. **Program and Staff Commitment** — The program must at all levels acknowledge that volunteers have something to contribute. This can be encouraged through actively seeking roles for volunteers in a project and by recognizing and rewarding attempts at volunteer program development; providing in-service education on working with volunteers; building roles for volunteers into annual plans of work; providing staff with the opportunity to share experiences they have had with volunteers; and providing the assistance of a specialist who focuses on volunteerism.

2. **Recruitment Strategy** — This entails developing a volunteer job description and considering where to look for potential volunteers.

3. **Communicating Effectiveness** — Formal or informal assessments of achievement are important to uncover problems and to help volunteers know that others view the work as effective.

4. **Enjoyment** — Enjoyment is important when people are volunteers. This is achieved through both social interaction and a pleasant working environment. It is important to set a congenial climate and to find tactful ways of handling problems.

5. **Personal Development** — Gaining knowledge and skills is an incentive for many volunteers. By providing opportunities for personal development, project staff help volunteers to be better equipped to carry out their task. They also help develop people who can take their own initiative to protect water quality in the future.

6. **Shared Ownership** — The commitment of volunteers to a watershed project rests in part on their feeling that they "own" part of it. Staff members working with volunteers need to acknowledge the shared ownership and be willing to share coordination and management tasks. For example, citizen advisory committees have a greater sense of shared ownership when they are given responsibility to decide how often to meet, to chair meetings, and to set the agenda.

According to Steele, the building blocks are based on experiences from the National Impact Study of Volunteerism in Extension.

[For a complete copy of the "Six Building Blocks For a Successful Volunteer Program," contact Keeping Current, Environmental Resources Center, Room 216 Agricultural Hall, 1450 Linden Drive, Madison, WI 53706. Phone: (608) 262-1916.]

Kansas Economists Report Young Farmers and Large Corporate Farms Most Likely to Invest in Conservation

Kansas State University agricultural economists have found that conservation improvements were more likely on farms with relatively young operators and on large corporate crop farms in the 1980s. The likelihood of conservation expenditures increased with farm size.

"Conservation investment in terraces, windbreaks, land leveling, waterways, or lagoons varied based on farm characteristics," said ag economist Allen Featherstone, one of the researchers.

The research team correlated various Kansas farm and farm operator characteristics with conservation investment. "Corporate farms were 5.3 percent more likely to invest than were sole-proprietor farms. And the likelihood of investment increased with the size of the household," Featherstone said. The researchers also found that farms receiving direct government program payments were more likely to invest in conservation and that conservation investment fell each year during the 1980s. There was a high correlation between government cost-sharing programs and investment in conservation.

Kansas Economists Report Young Farmers and Large Corporate Farms Most Likely to Invest in Conservation (continued)

Other study findings included:

- Crop farms were more likely to invest in conservation than were operations that were crop/livestock or primarily livestock.
- Corporate farms' conservation expenditures were more than double those of sole-proprietor farms.
- Older farmers had lower levels of investment in conservation technologies.
- More highly capitalized farms were more likely to make conservation improvements.
- Farms that rented land had lower levels of conservation investment.
- Higher levels of debt increased the probability and expected level of conservation investment.

The likelihood of a farm's investing in conservation improvements dropped by 8.6 percent from 1981 to 1989. The average investment was $114 in 1989, down from $380 (in 1989 dollars) in 1981. Nearly 17 percent of the expenditures on conservation were made in 1981; only 6 percent in 1989. The average cost of each investment was $1,815. Nearly 26 percent of 14,463 Kansas Farm Management Association farm data sets for 1981-89 reported conservation investments, the researchers said.

Policymakers can design more effective erosion-control programs if they correlate program goals with likelihood of investment, Featherstone said.

"If society's goal is to get the most erosive land protected, programs may need to target livestock operations, older farmers, and sole-proprietorship farms — farmers less likely to invest in conservation. But it may take fairly large incentives to reach these target groups. If the goal is the most erosion protection per government dollar, programs should probably continue to be untargeted," he said.

[For more information contact: Allen Featherstone, Agricultural Economist, Kansas State University, Manhattan, KS 66506. Phone: (913) 532-6702.]

In Alabama, TVA Develops a Cooperative Watershed Nonpoint Source Cleanup

EDITOR'S NOTE: This story contains an interesting piece of history, in as much as the nonpoint source cleanup detailed here was initiated in July 1986, before §319, the NPS section of the Clean Water Act, became part of the law. The Bear Creek Floatway, closed in 1984, was reopened in August 1990. The story documents how determined leadership can get the clean-up job done using persuasion, the resources at hand, and the cooperation of land management agencies. The story was prepared by Gary Springston of TVA.

Between 1969 and 1978, TVA constructed four earthen dams in the Bear Creek watershed of northwest Alabama. The purposes of these dams were flood control, water supply, and recreation. Associated with the project was development of a section of Bear Creek immediately downstream of Upper Bear Creek Dam for whitewater recreation. This section is known as the Bear Creek Floatway.

The floatway is a 25-mile reach of Bear Creek between Upper Bear Creek Dam and the headwaters of the Bear Creek Reservoir. At flows greater than 150 cubic feet per second (cfs), the floatway is physically suited for whitewater recreation such as rafting and canoeing.

The Bear Creek Floatway was closed to recreational use in 1984 because of high fecal coliform concentrations. TVA was requested by Congress to determine the causes of contamination and to undertake corrective actions that would allow the floatway to be reopened.

A watershed pollution inventory indicated that several wastewater dischargers were impacting the floatway. The wastewater treatment plant in Haleyville, Alabama, was consistently violating its NPDES limits because of overloading. The package wastewater treatment plant at Phillips High School in Bear Creek, Alabama was discharging virtually untreated waste because of hydraulic overload and poor operation and maintenance. However, the inputs from these point sources did not completely explain the high level of bacterial contamination seen in the floatway.

TVA used aerial photographs and ground-truthing to locate and quantify the nonpoint sources of pollution in the watershed. Livestock operations were found to be the primary source of

bacterial contamination. Results from this inventory were used to identify those livestock operations having the greatest impact on water quality in the floatway.

The prevalent animal operations in the floatway watershed were swine, poultry, and unconfined beef cattle operations. Although the livestock operations were small in size as compared to the national average, the manner by which they were operated directly contributed to bacterial contamination of the floatway.

The cooperative abatement project that resulted between TVA, SCS, and ASCS involved cleaning up both the priority point and nonpoint sources of pollution. The ASCS provided an established mechanism for providing cost-share assistance. County administrators for the ASCS administered the waste management contracts with each landowner and arranged for payment of cost-share monies. Payment of cost-share monies was made after invoices were submitted to the ASCS by the landowner and approved by TVA as legitimate installation expenses.

TVA supplied the ASCS with money to make cost-share payments to landowners. Waste management system designs submitted by the SCS were reviewed by TVA and approved before construction was initiated. TVA also implemented a water quality monitoring program and an education and inspection program to track water quality improvements and system operation.

The SCS designed the waste management systems and supervised their installation. This involved determining the problem and its magnitude, designing the most effective waste management system, supervising the installation of the system, and certifying the completion of the system.

Realizing that the effectiveness of a pollution clean-up program depended on its compatibility with individual farming operations, each system was specifically designed to meet the needs of each particular farm.

Clean-up Priorities Set

After individual landowners signed up to participate in the cost-share program, SCS and district officials inspected the operations to view the waste management problems. Based on this inspection and results of aerial analyses, each operation was assigned a priority ranking (high, medium, low). The installation of waste management systems was then targeted to those sites with the highest priority.

The swine waste problems were corrected by relocating the operation from the streambanks to a pasture away from the stream. State-of-the-art farrowing and finishing houses were constructed, with the water supply coming from a spring development or drilled well. Waste from the houses were flushed into two-cell lagoons that could later be used for fertilization. Rotational grazing pastures were developed around the houses to keep the vegetative cover from becoming permanently denuded on any one area.

The cattle waste problems were corrected by fencing the streams to prevent access and developing a water supply either in the form of spring developments or a drilled well. Strategically located watering troughs ensured that the cattle did not have to travel long distances for water. In those areas where runoff was a problem, ponds were constructed to intercept any runoff before it entered local streams.

The poultry waste problems were corrected by installing underground concrete disposal pits for the dead birds and constructing covered drystacks for stockpiling waste products.

The priority agricultural nonpoint sources in the floatway watershed were controlled by installing 140 animal waste management systems on 50 farms. The cost for installing these systems was $1,164,122.06 ($919,865.96 TVA cost and $244,256.10 landowner cost).

On August 9, 1990, the floatway was reopened to recreation after water quality monitoring indicated it was safe for recreational use. The reopening concluded a successful nonpoint source water quality improvement project in which many agencies and individuals played a vital role.

The cost to clean up the pollution sites in the floatway was $1.2 million dollars or one-fifth the cost for cleaning up a comparable amount of domestic waste. The targeted watershed approach for identifying high priority pollution sites helped make it economical to control these nonpoint sources of pollution.

In Alabama, TVA Develops a Cooperative Watershed Nonpoint Source Cleanup (continued)

Lessons Learned

Several conclusions regarding watershed management and control of nonpoint sources of pollution are apparent from the Bear Creek experience.

(1) Participation by land management agencies, water quality specialists, and local interests is required. This participation is needed to economically address nonpoint sources of pollution, improve water quality, and restore beneficial uses.

(2) Many nonpoint sources of pollution can be controlled at a cost significantly less than that which is routinely spent to treat point sources. In addition, substantial benefits may result if the right areas are targeted.

(3) Even though the cost of controlling nonpoint sources is low in comparison to point source and potential benefits exist, implementation will not happen without either regulations, incentives, or a combination of both.

(4) To ensure that corrective actions are for the greatest benefit to water quality, it is critical that monitoring be related to the objective or water use and that it be carried out before, during, and after implementation.

(5) Monitoring alone is not sufficient for determining watershed management needs. A complete pollution source inventory that focuses on the specific objective parameters impairing water quality or use is needed.

(6) One problem in nonpoint source pollution and watershed management is trying to look at everything. Corrective efforts that take into account technical, geographical, and economical factors, must be targeted to the specific objective.

(7) Because nonpoint source pollution control projects are so complex, success will not be achieved without partners and public support.

(8) No nonpoint source program will have long-term success without a proper operation and maintenance program.

[For further information, contact: Gary L. Springston, Tennessee Valley Authority, 1101 Market Street, HB 2C, Chattanooga, TN 37402. Phone: (615) 751-7336.]

South Carolina Implements Statewide Stormwater Management Regulations

EDITOR'S NOTE: The following article is based on an article in the June 1992 issue of *The Nonpoint Source*, the nonpoint source pollution control newsletter for South Carolina, published by the S.C. Land Resources Commission, funded in part by a U.S. EPA grant from the S.C. Department of Health and Environmental Control.

With the approval of a set of stormwater management regulations, South Carolina took the final step in implementing the State Stormwater Management and Sediment Reduction Act. The act, signed into law in May 1991, charges the Land Resources Commission to develop a state stormwater management and sediment control program. In addition to the rules and regulations, the program includes education, technical assistance, research, design, construction, and public involvement. This act does not regulate activities of the SC Department of Highways and Public Transport (DHPT). However, rules and regulations for the 1984 Erosion and Sediment Control Act have been amended to require DHPT to develop site-specific erosion/sediment control and stormwater management plans to be included in their bid packages. Amendments will also require DHPT to submit all plans to the Land Resources Commission for prior approval.

The act calls for the Land Resources Commission to develop a stormwater management and sediment reduction program that will apply statewide. Activities on the coast will be coordinated with the SC Coastal Council. According to Flint Holbrook, P.E., chief of the stormwater management section, there are two key design considerations applying to two-year, 24-hour and 10-year, 24-hour design storms: (1) Post-development runoff rates must be equivalent to pre-development runoff rates, and (2) sediment controls must demonstrate 80 percent trapping efficiency or meet a .5 ml/L peak settable solid concentration in effluent based on 10-year design storms. Agricultural and forestry activities are not covered by the act, nor are other activities that are already covered by other regulations.

All land disturbing activities covered by the act and regulations will require an approved stormwater management and sediment control plan.

South Carolina Implements Statewide Stormwater Management Regulations (continued)

Conservation districts are authorized to review and comment on plans. Local governments may contract with conservation districts, councils of government, or others to implement the program. If a local government does not wish to establish a local program, the conservation district may administer the state program. If neither is the case, the Land Resources Commission will administer the program.

Incidents of property damage and water pollution from stormwater runoff are on the rise in urban areas as more land is developed. The regulations are being welcomed by homeowners throughout the state who have no wish to see their homes flooded, their property values plummet, and their health and safety threatened by flooding from uncontrolled stormwater.

Stormwater runoff is one of the least recognized threats to land and waterbodies. Beyond the obvious flooding problems, stormwater can carry harmful pollutants such as fertilizers, pesticides, oil, grease, urban litter, and other materials, and contaminate surface water and groundwater that supply the water we drink. "The Commission commends Governor Campbell and the South Carolina General Assembly for their timely action in adopting this important legislation," said Commission Executive Director John W. Parris.

[For further information, contact: Flint Holbrook, Chief, P.E., Stormwater Management, SC Land Resources Commission, 221 Devine Street, Suite 222, Columbia, SC 29205. Phone: (803) 734-9100. FAX: (803) 734-9200.]

Notes on The Coastal Environment

State Growth Management Act Requires Localities to Draft Growth Plans to Protect Puget Sound Water

The state of Washington is taking the initiative in protecting coastal water quality. The Puget Sound Water Quality Authority's bimonthly *Sound Waves* reported recently on guidelines to help local governments develop policies for planning growth management and protecting water quality. The 12 counties bordering the Puget Sound were to have submitted policy statements by July 1, 1992. Most have complied at this time.

The local policy statements were part of a process required by the Growth Management Act, and the guidelines are based on the 1991 Puget Sound Water Quality Management Plan. In the next step required under the act, localities must submit comprehensive plans based on their policy statements by July 1, 1993.

Sound Waves listed the following as suggested elements in local planning policies:

1. *Cooperate in protecting water quality within a watershed.*
   - Each jurisdiction should define necessary protection actions based on its own needs as well as the overall needs of the watershed region.
2. *Protect, maintain, and improve water quality at commercial and recreational shellfish beds so shellfish are safe to eat.*
   - Control pollution from both potential and existing sources.
   - Establish shellfish protection districts to restore and protect shellfish beds from pollution threats.
3. *Maintain and increase wetlands and fish and wildlife habitat function and acreage.*
   - Preserve and restore wetlands and other habitats.
   - Provide and protect open space.
   - Control development density and location using innovative land-use techniques, such as transfer of development rights programs.
   - Regulate new development.
   - Educate the public.
4. *Identify priority watersheds.*
   - Develop and implement nonpoint pollution watershed action plans.
   - Integrate watershed plans into local comprehensive plans.

State Growth Management Act Requires Localities to Draft Growth Plans to Protect Puget Sound Water (continued)

5. *Reduce and generally eliminate harm to water quality from stormwater runoff and combined sewer overflows.*
   - Implement on-site BMPs.
   - Control development density and location.
   - Preserve natural stream corridors and buffers.
   - Develop and maintain a system of stormwater retention and detention facilities.
6. *Coordinate water quality monitoring and database management interlocally and with state agencies.*
   - Use common protocols.
7. *Address industrial and commercial discharge treatment.*
   - Use regionally consistent requirements for industrial and commercial discharge pretreatment.
   - Guide potential new indirect dischargers to locations with appropriate sewer service.
8. *Coordinate with state programs to locate and manage confined and unconfined dredged material disposal sites.*
9. *Involve the public.*
   - Increase community awareness of the importance of water quality protection.
   - Involve the public in water quality planning and implementation strategies.
10. *Concentrate urban land uses in existing urban areas to prevent degradation of water quality in rural areas.*

[For more information, contact Gretchen Hanna, Puget Sound Water Quality Authority, PO Box 40900, Olympia, WA 98504-0900. Phone: (800) 54-SOUND]

Agricultural Notes

Utah Forum Considers Livestock Grazing as a Sustainable Agriculture Practice

EDITOR'S NOTE: In recent months *News-Notes* has had several articles concerning grazing, the environment, and water quality in the west, particularly on the public lands. To add to this important continuing dialogue, the following article is reprinted, with permission, from *Your Water*, the official publication of the Utah Nonpoint Source Task Force, published on a quarterly basis. The NPS Task Force Executive Committee is represented by the following: Utah Department of Agriculture (Commissioner Miles 'Cap' Ferry, Chair of the Task Force); USDA-Soil Conservation Service; Utah Department of Environmental Quality; and Utah State University-Extension Service.

"I think as long as we keep talking, there's hope," said Lorin Moench, a sheep rancher in Summit County and one of 12 panelists who considered the issue of livestock grazing on the public land in a recent public forum.

The idea behind the forum was to help end polarized thinking about this issue and increase understanding between ranchers and environmentalists. The desire to work together was echoed by many of the panelists.

"Neither side has the answer. I think together we can come to a solution," said Ed Marsten, editor of the *High Country News*. "I look at ranching as the most hopeful area for cooperation between the environment and commodities," Marsten added.

While the panelists agreed that any solution starts with a meaningful dialogue and increasing understanding, there was some disagreement over range condition.

Ken Boyer, with the Bureau of Land Management, said the range condition on BLM land has improved in recent decades, but Melissa Blackwell, district ranger for the U.S. Forest Service, said the range condition in much of the Unita Mountains area she monitors is good in the upland areas but unsatisfactory in the riparian areas (the green, sub-irrigated areas near streams, lakes and springs, and seeps).

Utah Forum Considers Livestock Grazing as a Sustainable Agriculture Practice (continued)

Doc Hadfield, a rancher from Oregon who was on the panel as a rancher who uses innovative rangeland management techniques, said in order to repair riparian areas people must first agree on what makes up good riparian health. Hadfield suggested one definition might be baby willows living along side teenage willows and middle-aged willows.

Another issue that brought out disagreement is what would happen if livestock were completely taken off the public range. Blackwell and Gray McFarlane, of the Utah Wilderness Alliance, maintained the condition of all the range, but particularly the riparian areas, would improve dramatically. Gary Briggs, of the USDA Soil Conservation Service, disagreed with that assessment. He said there would be an immediate but shortlived improvement. Initially, he said, grasses that help the soil absorb water would flourish, and the range health would improve. But the woody plants, which actually promote soil erosion and hurt range health, would take over.

Some panelists also disagreed over the issue of wildlife and livestock on the same range. McFarland talked about decreasing numbers of elk, coyotes and other species of wildlife, but David Pace, a part-time rancher from southern Utah, and a resource coordinator for the Utah Association of Conservation Districts, said he sees elk and coyotes on the range today, where there were none 20 or 30 years ago. He also said the numbers of antelope and deer he sees today have increased dramatically from when he was a boy. Pace also talked of improved range condition during that time.

The issue of grazing fees brought many questions from the audience, as well as some disagreement among the experts. Some people are upset that the fees are so low ($1.97 per animal unit a month on federal land) and that tax dollars are subsidizing the rancher's jobs.

However, Pace was quick to point out that recreation and wildlife are also subsidized. And Bruce Godfrey, an economist at Utah State University, quoted the state statistic that says it costs more to graze the public land than the private land. Marsten said the debate over the grazing fee is a "red herring," "You could raise the fee a factor of five, but if the condition of the land doesn't improve it's a hollow victory."

No problems were solved by the panel. As one audience member put it, "You guys on the panel are the good guys." The question of how to get the people on polar ends of the issue to engage in rational dialogue is the real problem. It was apparent, however, that educational forums are a step in the right direction.

The forum was held in Park City on May 21, 1992, and was cosponsored by Park City Radio Station KPCW and the Utah Chapter of the League of Women Voters.

[For further information, contact: Karil Froebose, Utah Chapter, League of Women Voters. Phone: (801) 649-3968.]

*Farm*A*Syst Program Sweeping Country*

A recent study shows 80 percent of the states have started, or plan to start, state-level Farm*A*Syst programs, the groundwater assessment tool, reports Jerry Griswold, Soil Conservation Service (SCS) Coordinator, in the May 1992 issue of *Farmstead Pollution Prevention Update.*

Farm*A*Syst uses a series of questionnaires and fact sheets to help farmers and rural residents assess their farmstead structures, soil geology, and management practices. In an easy-to-use format, these materials provide a mechanism for farmers and rural residents to assess pollution risks associated with their farmsteads and home sites and to take decisive action to preserve the quality of their drinking water.

Results of the survey conducted by the national joint USDA-EPA Farm*A*Syst staff, Madison, WI, revealed that 40 states have started their own programs or are planning activities within the next 18 months. Of that group, 19 states have already initiated programs.

The survey was sent to Extension Service, SCS, and state lead water quality agencies in each state early in March. The national staff reports that responses were evenly distributed among all agencies, with most states providing responses from more than one agency.

The national program staff provides guidelines and educational support to states interested in starting their own Farm*A*Syst programs. The program is jointly supported by EPA, USDA's Extension Service and Soil Conservation Service. The national staff is headquartered at the University of Wisconsin, Madison.

*Farm*A*Syst Program Sweeping Country (continued)*

The national staff provides assistance to states interested in starting the program, providing basic packets of worksheets and fact sheets at a cost of $12.00 each, plus shipping. Word-processed versions of the Wisconsin packet that states can edit on disk costs $25.00, plus shipping. Contact the national staff for details on ordering.

News-Notes issues #9, #16, and #18 carried items about the development and distribution of the Farm*A*Syst program.

*[For more information contact: Jerry Griswold, SCS Coordinator, Gary W. Jackson, ES Coordinator, or Susan A. Jones, EPA Coordinator, Farm*A*Syst Program, B142 Steenbock, 550 Babcock Drive, Madison, WI 53706-1293. Phone: (608) 262-0024. FAX: (608) 265-2775.]*

National Livestock, Poultry, and Aquaculture Waste Management Workshop Proceedings Published

These are the proceedings of a national workshop organized to discuss issues relating to water quality and animal waste management. Growth and concentration of the livestock, poultry, and aquaculture industries have resulted in large volumes of waste that must be used in an environmentally sound manner. A cornerstone was laid in the workshop to define problems and solutions that will help ensure the soundness of our national resources.

The workshop, held July 29-31, 1991, at Kansas City, MO, was a cooperative effort of USDA-Extension Service, universities, state and national organizations, related agribusiness, and allied industries. Cosponsors included USDA's SCS and Agriculture Research Service; U.S. EPA; Tennessee Valley Authority, and Michigan State University, Department of Animal Science.

The proceedings are a valuable reference for all who are concerned with animal waste management and water quality. They include a series of priority nominations on educational, research, and technical assistance requirements developed by the attendees at the workshop, as well as a listing of potential solutions and opportunities. Commodity groups identified potential barriers and constraints encountered in dealing with water quality issues.

The proceedings were published by the American Society of Agricultural Engineers.

[For copies of the proceedings, contact the American Society of Agricultural Engineers, 2950 Niles Rd., St. Joseph, MI 49085-9659. Phone: (616)429-0300 ext. 41. Cost $45.00, plus handling $3.50, ASAE; members $37.00, plus handling. Order No. PO392.]

Video Explains How and Why to Seal Abandoned Wells

Some old wells may pose a health, safety, or financial threat to owners. Since they are a direct pipeline to groundwater, unused old wells also carry the risk of transporting contaminants into the water supply. Often, the best fate for an old well is proper "abandonment."

A new 20-minute video, *Proper Well Abandonment Techniques: How To Fill and Seal a Well,* explains how to properly abandon the three major types of wells: dug, driven, and drilled. The video explains why old wells are risky, and it discusses water quality issues, health and safety, property values, and liability. It also helps well owners assess their wells and make informed decisions as to whether or not they will need a contractor's assistance to properly fill and seal the well.

It is targeted for well owners, both urban and rural. But it is also full of practical information and is a great training tool for municipal water departments, community officials, contractors, well drillers, conservationists, elected officials, and policymakers.

The video is a joint effort of the U.S. Soil Conservation Service, Wisconsin Cooperative Extension Service, Wisconsin Department of Natural Resources, and the National Farm Medicine Center in Marshfield, Wisconsin.

[Copies may be purchased through Golden Sands Resource Conservation and Development Council, UW-Stevens Point, Nelson Hall, Stevens Point, WI 54481. Phone: (715) 346-3161. Cost $15.00, which includes shipping and handling. In Wisconsin, copies of the video are also available for loan from county Cooperative Extension offices, SCS offices, DNR, and the Wisconsin Rural Water Association.]

Notes on Riparian & Watershed Management

Oregon State University Produces Audio-Visual Program on Forest Riparian Areas

Forest managers are increasingly recognizing the importance of riparian areas as critical elements of sound forest and water quality management. These areas provide habitat for both aquatic and terrestrial wildlife and are highly valued recreation sites. Riparian areas also provide water quality protection functions and reduce the effects of forest management activities on surrounding uplands. Sound management of riparian areas is an essential part of any watershed-level protection or management program.

An Oregon State University College of Forestry audio-visual program, *Managing Riparian Areas on Forest Lands*, provides an overview of the functions and values of forest riparian areas and discusses the appropriate types of forest management activities needed to maintain them.

This program focuses on riparian area conditions in the Pacific Northwest, but natural resource professionals in other regions will also find it of interest, since many of the riparian area attributes and management considerations are similar.

The 28-minute program is available in either video or slide (with cassette soundtrack) format. The purchase price is $130, or the program may be rented for $25 for five days. When ordering, please specify VHS video transfer #987-V-T or slide-tape #987-S-T.

[For more information or to order, contact: Forest Media Center, Oregon State University, Peavy Hall, Room 248, Corvallis, OR 97331-5702. Phone: (503) 737-4702.]

Forest Service, Pacific Southwest Region, Initiates Forestry BMP Evaluation Program

EDITOR'S NOTE: In an innovative action, the U.S. Forest Service's Pacific Southwest Region (FS Region 5) has developed and is now implementing an ongoing program to evaluate the effectiveness of forestry BMPs in protecting the official state-designated beneficial uses of water in the national forests in California.

The story below was prepared by the USDA-Forest Service, Pacific Southwest Region, for Forest Service personnel in the region to explain the concept behind the new program and how it is intended to operate. It is reprinted here by *News-Notes* to let the rest of the country know how seriously other federal agencies are taking the clean water mandates of federal law.

We believe that similar BMP evaluations, rigorously designed and applied, can and should be developed for urban, agriculture, mining, and other categories of nonpoint source pollution. Editorially, we applaud the USDA-Forest Service Region 5 for its initiative and wisdom.

Best management practices are a continuous loop of implementation, monitoring, and refinement. The Clean Water Act requires that BMPs be iterative processes. After initial development and implementation, BMPs must be monitored for implementation and effectiveness, then modified to improve their efficacy, then monitored again. BMPs are a loop, and there is no endpoint.

In early 1989, the watershed management staff of the Pacific Southwest Region began developing a system to evaluate the effectiveness of BMPs[1] in protecting the beneficial uses of water. It is through the implementation of BMPs that the Forest Service is designated as the water quality management agency on national forest lands in the Pacific Southwest Region. (This designation was originally made under the provisions of Section 208 of the Clean Water Act. It is still effective. – eds.)

A system of BMP evaluation has taken shape during the last two years, and is about to be implemented throughout Region 5. The system provides detailed information on both implementation of BMPs and BMP effectiveness.

The monitoring system is called the "Region 5 Best Management Practices Evaluation Program" (BMPEP).

[1] BMPs are procedural and structural practices approved by the state of California Water Resources Control Board and certified by the EPA to be used by the Forest Service in planning and implementing all management activities.

Forest Service, Pacific Southwest Region, Initiates Forestry BMP Evaluation Program (continued)

The objectives of the BMP Evaluation Program are to:

- Assess the degree of implementation of BMPs;
- Determine which BMPs are effective;
- Determine which BMPs need improvement or development;
- Fulfill forest land and resource management plan BMP monitoring commitments; and
- Provide a record of performance for management of nonpoint source pollution in Region 5.

Many people were consulted in 1989 and 1990 to determine what the BMPEP should include. Contributing were representatives from many of the forests in California, EPA, state and regional water quality control boards, universities, industry, and environmental groups. Proposals were field tested in 1989 and again in 1990 on nine forests representing the wide range of environmental conditions and management emphasis that exist on California's national forests.

The procedures went through many revisions, based on the results of field testing and comments from people who did the test evaluations. The procedures are refined to the point where they yield repeatable results based on readily collected information.

The BMPEP has three primary components: Administrative Evaluations, On-Site Evaluations, and In-Channel Evaluations.

- ***Administrative Evaluations*** are broad-scale subjective assessments of multiple BMPs at the project level. There are six different evaluations: Timber Sales and Roads, Grazing, Prescribed Fire, Mining, Activities Under Special Use Permit, and Watershed Restoration.

  These evaluations are used to assess administrative or process BMPs — such as the timber sale planning process — as well as structural or physical practices. The evaluations are post-implementation assessments conducted by teams of reviewers to document observations on BMP implementation and effectiveness. They will usually be incorporated into general project or activity reviews. Though such reviews have long been a part of Forest Service operations, the evaluations provide a focus and documentation format to better capture and preserve information on BMPs.

- ***On-Site Evaluations*** provide a means to gather objective data on the state of BMP implementation for specific practices. The evaluations are based on actual measurements of key criteria (ground cover, canopy closure, etc.) and ocular estimates (presence or absence of rills, presence or absence of debris at culvert inlets, etc.). Criteria were selected that related to the objective of the individual BMP and field tested and refined to yield repeatable results by independent observers.

  There are 28 different On-Site Evaluation Procedures; each assesses an individual or closely related BMP. For instance, two BMPs govern water quality protection on timber skid trails; they are assessed as one procedure. On-Site Evaluations assess timber harvest, roads, recreation, minerals, fire, range, and vegetation management practices.

  A detailed assessment of BMP implementation is also conducted. Rating implementation involves a review of project plans, environmental assessments, and the actual practices on-the-ground, to gauge how well the implemented practice matches what was planned.

  Evaluations from randomly selected sites to test effectiveness ratings between sites where practices were and were not implemented will be compared. Evaluations will also be conducted at additional sites pre-selected because of their sensitivity, public interest, or management interest.

  All results will be stored in a relational database (BMP-DB) . . . developed in ORACLE, for ready retrieval and query at both the forest and regional level. The database development was complex and was achieved with the able assistance of ace programmer Steve Mathews of the Six Rivers National Forest.

- ***In-Channel Evaluations*** are measurements of selected parameters to assess the cumulative downstream result of project BMPs in protecting beneficial uses. These evaluations monitor condition or change in parameters indicative of the physical,

Forest Service, Pacific Southwest Region, Initiates Forestry BMP Evaluation Program (continued)

chemical, or biological nature of the stream channel. Parameters selected will be indicators of the beneficial use most sensitive to change as a result of upstream/upslope land management. If drinking water is the use of concern, then turbidity or microbiological sampling might be used. If fisheries are the use of concern, parameters might include changes in residual pool volume or substrate composition.

Each In-Channel Evaluation will be described in a monitoring plan that will detail the selected parameters and data collection requirements, analytical techniques, and the hypothesis to be tested. Each monitoring plan will be peer-reviewed. Comparisons will most frequently be between stream reaches above and below the project, though comparisons between watersheds will also be used. Each national forest in Region 5 will have one or more In-Channel Evaluations beginning in 1992.

Each BMPEP component outlines steps to be taken in the event that poor implementation or effectiveness are observed.

A user's guide details all procedures, provides blank evaluation forms, and documents the storage and retrieval system: "Investigating Water Quality in the Pacific Southwest Region: Best Management Practices Evaluation Program: A User's Guide." May 1992. USDA-Forest Service, Pacific Southwest Region. 362 pages.

[A limited number of user's guides are available for those engaged in forestry/water quality monitoring matters. For further information, contact any of the authors: Ken Roby, USDA-Forest Service, Plumas National Forest, Greenville, CA. Phone: (916) 284-7126; John Rector, USDA-Forest Service, Regional Office, San Francisco, CA. Phone: (415) 705-2515; Michael J. Furniss, USDA-Forest Service, Six Rivers National Forest, Eureka, CA. Phone: (707) 441-3551.]

EDITOR'S NOTE #2: This is a highly commendable move. We would like to make one observation. The application of the BMP Evaluation Program, itself, could be approached as an iterative process. Parts of it might be "tightened up" or made more rigorous, as experience is gained. For example, the guidelines for in-channel effectiveness monitoring are very broad and only recommend, initially at least, that one application, or one monitoring project be conducted for each forest for either recreation, roads, grazing, mining, or silviculture areas. Another example is the endpoint of assessments (the protection of the beneficial uses of water). Applicable state water quality standards (WQS) also could be used to define endpoints. WQS include: (1) designated beneficial uses, (2) criteria to protect uses, and (3) a state anti-degradation policy. If the focus is just on uses, then it is possible that those uses can be interpreted by the investigator on a site-by-site, day-by-day basis with no real "criteria" to determine if those uses are being protected or not. State water quality agencies could be invited to be on the team that develops the in-stream monitoring plans. Thus state and forest service in-stream water quality monitoring would be more closely integrated and mutually supportive. This would be especially valuable where states are strengthening their biological criteria (condition of habitat, for example) for the evaluation of the ability of their waters to support fish and wildlife uses.*

A last comment. Through the application of this BMP evaluation program and its resultant database, the Forest Service in California may be among the first in the nation to actually have consistent multiple-project information to close the iterative loop. That is an exciting prospect.

* See the article entitled "EPA Issues Policy on the Use of Biological Assessments and Criteria in the Water Quality Program," *News-Notes* Issue #14, July 1991.

Notes on Environmental Education

Wisconsin High School Teachers and Students Study a Watershed and a Lake

EDITOR'S NOTE: This article was submitted to *News-Notes* by Paul Tweed, a biology teacher at Augusta High School, Augusta, Wisconsin. Thank you, Paul.

Watershed Study Completed in 1991

Since the summer of 1991, teachers and students from Augusta High School in Wisconsin have been studying nonpoint impacts on local watersheds. Stream and lake quality around the small community of Augusta has been significantly impacted by agriculture.

In 1991, high school biology teacher Paul Tweed and four students spent the summer assessing the water and habitat quality of a 90,880 acre watershed with six sub-watershed streams, 52

miles of which are classified as trout streams. To do this work, Tweed had received a grant from the Wisconsin Academy of Sciences, Arts, and Letters's "Field Involvement, Research by Science Teachers" (FIRST) program. The grant covered basic expenses of the research and a teacher stipend.

Using the Wisconsin Department of Natural Resources' (DNR) habitat quality index and Hilsenhof's Biotic Index, the group surveyed all the streams and compared data with a previous study from 1983-87. The results of this work substantiated efforts by state and local agencies to control erosion from fields, animal stream access, and runoff from livestock waste. Several water quality factors showed improvement from the 1986 data.

This study carries over to the classroom at Augusta High where ninth grade students study the physical and chemical factors related to watershed quality, tenth graders investigate the biological parameters, and eleventh and twelfth grade ecology students undertake related research projects on the streams.

Lake Eau Claire Focus of Current Study

In the summer of 1992, Tweed was joined by a second science teacher. Jeff Hadorn, also from Augusta High, and Tweed both qualified for grants from the Academy's FIRST program.

Twenty-two students from eighth to twelfth grades worked with the teachers throughout the summer to collect limnological, biological, and geographical information about Lake Eau Claire, just north of Augusta.

A reservoir on the Eau Claire River, the lake is approximately 1,100 acres and experiences many problems related to nutrient excess and siltation. During the National Eutrophication Survey of the 1970s, Lake Eau Claire was designated eutrophic. This condition persists in the lake today.

Much about the lake remains to be investigated. For instance, several unexplained fish kills have occurred over the years. One explanation that has been offered to account for the fish kills is a sudden overturn of anoxic water in the lake. Tweed and his students are exploring this hypothesis by monitoring lake temperature and dissolved oxygen (DO).

During the summer, teachers and students spent two to three days a week in the field and lab collecting samples, running the tests on the desired parameters, and discussing the implications of their findings. The teacher and student team studied water quality parameters that included nitrogen, phosphorous, chlorophyll, DO, pH, temperature, bacteria, algae, macrophyte populations, and water clarity.

Several students are independently investigating such issues as relative tributary input of nutrients, algal species and their distribution, and primary productivity in the lake.

The DNR West Central District office is supporting this project from the information and technical side. DNR Water Quality Specialist Buzz Sorge worked with the teachers and continues to help refine and monitor the project. "Without the help of the DNR and Buzz Sorge, we would be at quite a disadvantage in framing this investigation." says Hadorn.

The group is also mapping the lake for the first time since 1960. Local engineering firms have volunteered equipment and personnel to help set up a system that can track siltation in the lake over the next few years. The research group will develop both topographical and three-dimensional maps of the basin for use in further studies.

Throughout the school year, the data collected during the summer will be brought into the classroom for projects by Tweed's advanced classes. While students write up parts of the project for possible presentation at student conferences, Tweed will analyze and write up the summer's work to present to the Academy in the fall. He hopes to continue next summer with another study based on results from this year. It is important, he notes, to continue weekly monitoring for several years to eliminate the effect of seasonal fluctuations.

Both Tweed and Hadorn feel this type of program is the very best way to involve students of all ages in scientific inquiry and environmental responsibility. Students move from passive learners in a classroom to active scientists in the field and lab. They ask questions, collect data, and perform the routine of the field and lab worker. They do science.

Wisconsin High School Teachers and Students Study a Watershed and a Lake (continued)

"Many of the experiences the students had this summer are not usually available until one reaches upper-level undergrad or grad school." says Tweed, "That's a shame, because it is the seventh, eighth, and ninth grade student who still cares, is still curious, and is ready to be involved. These kids are the future of the country and the planet. This research may not be earth-shattering in its scientific result, but it can change lives."

[For more information, contact: Paul Tweed, Augusta High School, Rt. 2, Box 65, Augusta, WI 54722. For information on the FIRST program, contact Gary Lake, Wisconsin Academy of Science, Arts, and Letters, 1922 University Ave., Madison, WI 53705-4099. Phone: (608) 263-1692.]

TVA Produces Classroom Activities Guide On Nonpoint Source Pollution Prevention

The Environmental Education Section of the Tennessee Valley Authority has produced an Environmental Resource Guide (ERG) on nonpoint source pollution prevention, a series of classroom activities for grades 6-8. The guide was produced for the Air and Waste Management Association (AWMA) Education Council.

The ERG, *Nonpoint Source Pollution Prevention*, presents basic information on the relationships between land use and water quality in a series of ten fact sheets and 15 activities. This guide provides middle school science, math, social studies, and language arts teachers with a concise introduction to nonpoint source pollution issues so they can present this basic information to their students. The material is "teacher-friendly" and can easily be integrated into existing curricula.

Additional ERGs are in the process of preparation for grades K-2, 3-5, and 9-12.

AWMA will distribute the guide and hold teacher-training workshops throughout the country. The first such workshop was held in June in Kansas City. Twenty-four teachers participated. Workshop evaluations indicated that all participants (except one who is currently not teaching) said they would use the ERG in their classrooms.

Several federal agencies cooperated with TVA in the production of the guide, including USDA–SCS; U.S. DOI, Bureau of Reclamation; U.S. EPA (OWOW, Assessment and Watershed Protection Division; and U.S. EPA, Region V, Wetlands and Watershed Section).

[For more information and to order the guide, contact: Beth O'Toole, Education Program Manager, Air and Waste Management Association, PO Box 2861, Pittsburgh, PA 15230. Phone: (412) 232-3444. FAX: (412) 232-3450. Order: Environmental Resource Guide - Nonpoint Source Pollution Prevention (code ERG-ENS6). Cost: 1-14 copies, $30 each (AWMA members - $20); 15-49 copies, $15 each; 50 or more, $12 each.]

NPS Electronic Bulletin Board (BBS) News

Nonpoint Source Computer Bulletin Board System — (NPS BBS). The *NPS BBS*, through the user's personal computer, provides timely, relevant NPS information, a nationwide forum for open discussion, and the ability to exchange computer text and program files. Special Interest Group Forums (mini-bulletin boards) are dedicated to specific topics and have all of the features of the main *BBS*. The service is free except for any long distance phone charges incurred by the user.

To access the *NPS BBS*, you will need • a PC or terminal, • telecommunications software (such as Crosstalk or ProComm), • a modem (1200 or 2400 baud), and • a phone line.

The *NPS BBS* phone number is (301) 589-0205.

For a copy of the user's manual, complete *THE COUPON* on page 27 and mail or fax it in.

Do you need to know the major NPS concerns in forestry? Funding for water resources projects in Wisconsin? Maybe you remember a *News-Notes* article about South Carolina sediment control but can't recall what issue it was in. Short of spending all day browsing through *News-Notes* back issues, what can you do?

The *NPS News-Notes* database on the *NPS BBS* contains the articles from all the issues of *News-Notes* in a searchable format. A recent upgrade has made the database much easier to use. Users can now choose to view a list of keywords from inside the database rather than having to get out of the database to check a bulletin containing the keyword list.

Users can also choose to read detailed instructions on how to conduct a search of all *News-Notes* issues, or they can type "**?**" at any point to get help with specific types of searches.

To access the database, or Door, from the "Main Board Command?" prompt, type **open**. Then choose the *NPS News-Notes* database from the list of Doors.

Capturing or Logging Your Search to Disk

Remember to turn on the capture or log function of your telecommunications software before you start a search so that the record and results of your search will be written to disk. Refer to the manual for your telecommunications software if you haven't done this before. If you use CrossTalk, you must press ESC to get the Crosstalk command line, and then type **ca**. After you have finished capturing your search, press ESC and type **ca off**. If you use ProComm, press Alt-F1, type a file name, and press enter. Be sure to press Alt-F1 again when you are done logging.

You may search the database for article numbers or keywords, or you may search the title and text of *News-Notes* articles for any words you specify.

Searching for Article Numbers and Keywords

The Article Number field contains a code for each article. For example, if you are looking for an article and you know only that it was in issue #2, a search for the text string "**2-**" would locate all articles from that issue.

The Keywords field contains keyword and keyword phrases assigned to each article. Type **L** at the *News-Notes* database menu to see a list of keywords from which to choose. Enter the entire keyword or keyword phrase exactly as it appears on the keyword list or truncate the keyword or keyword phrase with an "*****". For example, searching for "Soil Conservation*****" will find articles keyworded for both "Soil Conservation" and "Soil Conservation Service."

Searching for Words in the Title, Text, or All Fields

A Title search locates article titles that contain a given word.

A Text search locates articles with a given word in the text of the article. An All Fields search searches all fields, but serves primarily as way to do simultaneous searches of the Title and Text fields.

Again, if you search for "pest*****", records containing the words "pest," "pests," "pesticide," and "pesticides" will be located.

Narrowing or Broadening Your Search

You can narrow the search by entering additional words on new lines. (This is known as the logical AND operation.) You may enter as many single words as you wish for this type of search. For example, if you enter "pesticide" on one line, and then enter "lawn" on the next line, the database will locate only articles that have *both* the words "pesticide" *and* "lawn" in them.

In contrast, if you enter "pesticide,lawn" on one line, the database will locate all records that have either the word "pesticide" *or* "lawn" in them (the logical OR operation). This broadens your search. Separating words with a comma specifies that either word may occur in selected records. You may include as many words separated by the comma as will fit on one line.

Displaying Search Results

The results of your search can be displayed in several different ways. Those who keep a complete collection of *News-Notes* back issues may want to see only the article numbers and titles of the selected articles. Others will want to view the entire text of the selected articles. Either choice may be read on-line or scrolled non-stop across the screen. If you are capturing to disk, non-stop may be the most practical alternative, allowing you to read or print the article later when you log off.

The *News-Notes* database can be a great time and effort saver. The searches are amazingly fast, and the upgrade has made finding specific information easy.

Datebook

This DATEBOOK has been assembled with the cooperation of our readers and CTIC. If there is a meeting or event that you would like placed in the DATEBOOK, contact the *NPS NEWS-NOTES* editors. Due to an irregular printing schedule, notices should be in our hands at least two months in advance to ensure timely publication. A more complete listing can be found on the *NPS BBS*.

Meetings and Events

1992

August

25-27 — *Fracture Trace and Lineament Analysis Short Course*, Portland, ME. Contact: National Groundwater Assoc., PO Box 182039, Dept. 017, Columbus, OH 43218-2039. (614) 761-1711. Call Sheraton Tara Hotel (207) 775-6161 for room.

31-9/2 — *National Irrigation-Induced Erosion and Water Quality Conference*, Boise, ID. Contact: William Carmack, USDA-SCS, South Ag Building, 14th and Independence Ave.,SW, Washington, DC 20013. (202) 720-6037 or 720-0428.

31-9/3 — *Water Quality Standards for the 21st Century: Program Direction and Issue Decisions*, Las Vegas, NV. Contact: Michele Vuotto, Dynamac Corporation, 2275 Research Blvd., Suite 500, Rockville, MD 20850-3268. Rooms at Riviera Hotel: (800) 634-3414.

September

8-9 — *Lake Champlain: It's Future Depends On Us*, South Burlington, VT. Contact: Don Hipes, Rt. 2, Box 92, Jericho, VT 05465. (802) 244-4510. Cosponsored by the New Hampshire, Vermont and Empire State (NY) Chapters of the Soil and Water Conservation Society.

9-10 — *The District Role in Remedial Action Plans Workshop*, Milwaukee, WI. Contact: Bill Horvath, NACD, 1052 Main, Stevens Point, WI 54481-2895. (715) 341-1022. FAX: (715) 341-1023. Focuses on Lake Michigan.

13-17 — *National RCWP Symposium: Ten Years of Controlling Agricultural Nonpoint Pollution: The RCWP Experience*, Orlando, FL. Contact: Lisa Grayson, Terrene Institute, 1000 Connecticut Ave., NW, Suite 802, Washington, DC 20036. (202) 833-3380. FAX: (202) 466-8554.

13-17 — *The Year 2000: Will We Be Ready Technically? Socially? Politically? 1992 Annual Meeting of the American Fisheries Society*, Rapid City, SD. Contact: Clifton Stone, AFS 92, PO Box 291, Chamberlain, SD 57325-0291. (605) 734-6633. FAX: (605) 734-6691.

13-17 — *Fourth International Wetlands Conference*, Columbus, OH. Contact: William Mitsch, School of Natural Resources, OSU, 2021 Coffey Rd., Columbus, OH 53210. (614) 292-9774.

14-16 — *The District Role in Remedial Action Plans Workshop*, Rochester, NY. Focuses on Lake Ontario. See September 9–10 above for details.

1992

September

20-24 *Surface Water Quality and Ecology: 1992 Annual Water Environment Federation Conference*, New Orleans, LA. Contact: Maureen Novotne, WEF Technical Services, 601 Wythe St., Alexandria, VA 22314-1994. (703) 684-2400.

21-25 *Status and Management of Neotropical Migratory Birds*, Estes Park, CO. Contact: Neotropical Bird Conference, Office of Conference Services, Colorado State University, Fort Collins, CO 80523. (303) 491-6222. FAX: (303) 491-0667. Registration: $75, $85 after 8/19. Rooms at YMCA (303) 586-3341. Hosted by "Partners in Flight." (See *News-Notes* issue #21, page 2 for EPA Office of Water's involvement.)

27-30 *1992 National Environmental Health Association Conference: Protecting Our Nation's Waters*, Norfolk, VA. Contact: NEHA, 720 S. Colorado Blvd., Ste. 970, Denver, CO 80222-9490. (303) 756-9090. FAX: (303) 691-9490. Topics: oil spill response, lessons from Kuwait and Valdez, shellfish and seafood safety, constructed wetlands for sewage disposal. Call Marriott Hotel for rooms: (804) 627-4200.

October

1-2 *3rd Annual Utah Nonpoint Source Water Quality Conference*, Ogden, UT. Contact: Jack Wilbur, Utah Dept. of Agriculture, Environmental Quality Section, 350 N. Redwood Rd., Salt Lake City, UT 84116. (801) 538-7098. Theme: Urban Runoff and Stormwater Management.

6-8 *National Poultry Waste Management Symposium*, Birmingham, AL. Contact: Richard Reynells, NPL Poultry, USDA/ES, Room 3334, South Agriculture Bldg., Washington, DC 20250-0900. (202) 720-4087. FAX: (202) 720-4924. Sponsored by of USDA-Extension Service, land-grant universities, and state and national poultry organizations.

14-15 *7th Annual Groundwater Protection Seminar*, Irving, TX. Contact: Brad L. Cross, Texas Water Commission, PO Box 13087, Austin, TX 78711. (512) 371-6470. Seminar covers NPS contamination of groundwater. Topics: delineation of wellhead protection areas, local emergency spill response, comprehensive groundwater protection strategy.

14-16 *Watershed Resources: Balancing Environmental, Social, Political, and Economic Factors in Large Basins*, Portland, OR. Contact: Conference Assistant, OSU College of Forestry, Peavy Hall 202, Corvallis, OR 97331. (503) 737-2329. Explores how environmental and human factors interact in watershed management challenges.

16-22 *Interdisciplinary Approaches in Hydrology and Hydrogeology*, Portland, OR. Contact: Helen Klose, American Inst. of Hydrology, 3416 University Ave., SW, Minneapolis, MN 55414-3328. (612) 379-1030.

27-29 *Ecosystem Restoration in the Great Lakes Basin*, Green Bay, WI. Contact: JT&A, Inc., 1000 Connecticut Ave., NW, Suite 802, Washington, DC 20036. (202) 833-3380. Register by 10/9. Reserve poster presentation space by 9/14. Call Radisson Inn Hotel, (414) 494-7300, for room by 9/28. Sponsored by the EPA Region V. Topics: restoration, mitigation, preservation, protection of ecosystems.

30-31 *Nonpoint Source Pollution: Causes, Consequences, and Cures*, Fayetteville, AR. Contact: Martha L. Noble, Nat'l Center for Agricultural Law, University of Arkansas, Fayetteville, AR 72701. (501) 575-7646. FAX: (501) 575-5830. Registration fee: $75 before 10/1; $100 after. Rooms at Fayetteville Hilton: (501) 442-5555. Sponsored by National Center for Agricultural Law Research and Information and AR Water Resources Research Center. Topics: agricultural, urban and forestry NPS; federal and state laws; BMPs; watershed management; and voluntary vs. mandatory controls.

November

2-7 *12th Annual North American Lake Management Society International Symposium on Lake, Reservoir, and Watershed Management*, Cincinnati, OH. Contact: Bob Mason, Hamilton County Park District, 10245 Winton Rd., Cincinnati, OH 45231. (513) 521-7275. FAX: (513) 521-2606. Topics: zebra mussels, hydropower, wetlands, urban runoff, agricultural NPS, acid lakes, phosphorus inactivation, computer modeling, citizen workshops. Sponsors: U.S. EPA Clean Lakes, TVA, and OH Sea Grant.

1992

November

4-6 *Partnerships for Clean Water: Making Nonpoint Projects Work in the Year of Clean Water*, Angola, IN. Contact: Randall Seelbrede, USDA SCS, 219 Paw Paw St., Paw Paw, MI 49079. (616) 657-4220.

18-20 *Integrated Watershed Management: Overcoming Obstacles*, South Lake Tahoe, CA. Contact: Ken Roby, USDA Forest Service, 410 Main St., PO Box 329, Greenville, CA 95947. (916) 284-7126. Sponsored by Watershed Management Council.

19-21 *1st New Mexico Riparian Conference: A Call to Action*, Albuquerque, NM. Contact: Russ LaFayette, New Mexico Riparian Council, PO Box 22538, Coranado Station, NM 87502. Sponsored by Soil and Water Conservation Society (NM chapter) and NM Riparian Council. Will clarify issues and options for riparian conservation in Southwest.

December

14-15 *6th National Drainage Symposium*, Nashville, TN. Contact: ASAE, 2950 Niles Rd, St Joseph, MI 49085-9659.

1993

January

10-13 *The Development of Soil and Groundwater Cleanup Standards for Contaminated Sites*, Washington, DC. Contact: Dr. Eileen O'Neill, Water Environment Federation, 601 Wythe St., Alexandria, VA 22314-1992. (703) 684-2400. FAX: (703) 684-2492.

19-20 *Stormwater Management and Combined Sewer Overflow Technology Transfer Seminar*, Contact: Ms. B. Pasian, Conference Secretary, Wastewater Technology Center, PO Box 5068, Burlington, Ontario L7R 4L7. (416) 336-4588. FAX: (416) 336-4765.

Calls For Papers — DEADLINES

1992

September

1 *Gulf of Mexico Symposium*, December 10-12, 1992, Tarpon Springs, FL. CALL FOR POSTERS. Abstracts due by 9/1. Contact: Frederick Kopfler (601) 688-3726.

30 *Riparian Ecosystems in the Humid U.S.*: Functions, Values and Management, March 15-18, 1993, Atlanta, GA. CALL FOR ABSTRACTS. Contact: John Greis, EPA Region IV, (404) 347-2126. Topics: water quality/quantity, wildlife, fisheries, recreation, aesthetics, and landowner economics.

October

31 *Managing Riparian Areas: Common Threads and Shared Benefits*, February 4-6, 1993, Albuquerque, NM. CALL FOR POSTERS. Contact: Water Resources Center, University of Arizona, 350 N. Campbell Ave., Tucson, AZ 85721. (602) 792-9591. Submit poster abstracts by October 31, 1992.

1993

January

1 *Prairie Ecosystems: Wetland Ecology, Management, and Restoration*, August 9-13, 1993, Jamestown, ND. CALL FOR PAPERS. Contact: Dr. Ned Euliss, U.S. Fish and Wildlife Service, Northern Prairie Res. Center, RR 1, Box 96C, Jamestown, ND 58401. Topics: Past, Present, and Future of Wetlands; Chemical and Physical Characteristics of Wetlands; Wetland Policies, Programs, and Politics; Biological Characteristics of Wetlands; Perspectives on Wetlands; Positive and Negative Aspects of Management. Also: Created and Restored Wetlands: Functions, Values, and Technologies; Wetlands in the Landscape; and Innovative Strategies for Wetland Conservation. Paper titles due by 1/1/93; abstracts by 5/1/93.

The Coupon

Nonpoint Source Information Exchange Coupon #23

(Clip or Photocopy and Mail or FAX this coupon to us)

Our Mailing Address: **NPS News-Notes (WH-553),** Assessment and Watershed Protection Division
U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460

Our Fax Number: **NPS News-Notes** (202) 260-1517

Use this Coupon to: (check one or more)

- ❑ *Share your Clean Water Experiences, OR*
- ❑ *Ask for Information, OR*
- ❑ *Make a Suggestion*

Write your story, ask your question, or make your suggestions here:
Attach additional pages if necessary.

- ❑ *Please send me a copy of "Agents for Change," the OECD Workshop Report on Sustainable Agriculture.*
- ❑ *I want the NPS/BBS Users' Manual. Please send me a copy.*
- ❑ *Please add my name to the mailing list to receive News-Notes.*

Your Name: _____

Organization: _____

Address: _____

City/State: _____ **Zip:** _____

Phone: _____ **Fax:** _____

Nonpoint Source NEWS-NOTES is an occasional bulletin dealing with the condition of the environment and the control of nonpoint sources of water pollution. NPS pollution comes from many sources and is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural pollutants and pollutants resulting from human activity, finally depositing them into lakes, rivers, wetlands, coastal waters and groundwater. NPS pollution is normally associated with agricultural, silvicultural, mining, and urban runoff. Hydrologic modification is a form of NPS pollution that often adversely affects the biological integrity of surface waters.

NPS NEWS-NOTES is published under the authority of section 319(l) of the Clean Water Act by the Nonpoint Source Information Exchange, (WH-553), Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds, Office of Water, U.S. Environmental Protection Agency, 401 M St., SW, Washington DC 20460. FAX # (FTS/202) 260-1517. Hal Wise, Editor; Elaine Bloom (contractor), Associate Editor; Susan V. Alexander and Anne Weinberg, Contributing Editors. Corresponding Editors: Margherita Pryor, Oceans and Coastal Protection Division, OWOW; and John Reeder, Office of Ground Water and Drinking Water. Unless otherwise attributed, all material in this bulletin has been prepared by the editors. For inquiries on editorial matters, call (FTS/202) 260-3665 or FAX (FTS/202) 260-1517. For additions or changes to the mailing list, please use the COUPON on page 27 and mail or FAX it in. We are not equipped to accept mailing list additions or changes over the phone.

Moving?
Send present mailing label and new address including zip code to:

NPS NEWS-NOTES (WH-553)
Assessment and Watershed Protection Division
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Official Business
Penalty for Private Use, $300

First Class Mail
Postage and Fees Paid
EPA
Permit No. G-35

★ 1992 ★
THE YEAR OF
CLEAN WATER
Celebration & Commitment

Printed on recycled paper