June 1991
#13

Nonpoint Source EPA News-Notes

Commentary . . .

A Comptroller General Looks at Nonpoint Pollution. . .

. . . the general consensus is that nonpoint pollution is often a significant problem and, unless it is solved, many rivers and lakes will not be able to meet our Nation's water quality goals. The EPA estimates that nonpoint sources of water pollution account for more than half of the pollutants entering national waters. The Council on Environmental Quality estimates that pollution from nonpoint sources, such as feedlots, landfills, and agriculture, are five to six times the pollution load from municipal and industrial point sources. The Council believes that even if municipalities and industries would meet minimum treatment levels for point sources, the 1983 water quality goals[1] would not be met because of nonpoint pollution.

Hon. Elmer B. Staats, *Comptroller General of the United States, in testimony before the House of Representatives, Subcommittee on Oversight and Review, Committee on Public Works and Transportation, July 17, 1979*

Notes of National Interest

League of Women Voters Launches Three-Year Groundwater Education Project

The League of Women Voters Education Fund (LWVEF) recently announced the beginning of a three-year Community Groundwater Education Project, funded under a cooperative agreement with EPA's Office of Ground-Water Protection — now the Ground-Water Protection Division of the Office of Ground-Water and Drinking Water. The project seeks to increase citizen awareness of the threats to groundwater supplies and the range of state and local action that can prevent contamination. Ten models for community outreach will be developed to help stimulate the development of locally based groundwater protection programs.

1 *Sec. 101.(2) It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983. — Federal Water Pollution Control Act, as amended – the 1972 Act – ed.*

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League of Women Voters Launches Groundwater Education Project (continued)

The project began with a two-day groundwater education training workshop for selected League leaders, held in Washington, D.C., last March. At least 10 of the 40 participating leagues will be chosen by competitive application to receive grants to conduct local or statewide groundwater education programs. A variety of geographic/hydrogeologic settings will be represented in areas experiencing a range of contamination problems and current groundwater management practices. The LWVEF will produce a community action guide in the final year of the project to share the results of these efforts and generate interest in community involvement in groundwater protection beyond the 10 model programs.

Cindy Sanford, the Groundwater Project Manager for LVWEF made these comments:

> *Nonpoint source runoff has been addressed by the League as a major contributor to groundwater pollution. We hope that our local and state leagues work with EPA regional and State groundwater and nonpoint managers to help identify citizens' roles in local and statewide water quality programs.*
>
> *For the citizen involved in groundwater issues, the project will offer an information clearinghouse, publication of a twice yearly newsletter, and assistance to individuals and organizations wishing to learn more about options for groundwater protection.*

[For more information or to contribute information to the LWVEF Groundwater Education Project, contact Cindy Sanford, Groundwater Project Manager, or Joe Oosterhout, Research Assistant, League of Women Voters Educational Fund, 1730 M Street, NW, Washington, DC 20036. Phone: (202) 429-1965; FAX (202) 429-0854.]

National Conference Looks To Enhancing States' Lake Management Programs

A National Conference on Enhancing the States' Lake Management Programs was held on May 16 & 17, 1991, in Chicago, Illinois. This was the fourth consecutive year this conference was held to provide a medium for exchange of information between those involved in managing State lake resources. This conference focused on monitoring and was sponsored by the U.S. Environmental Protection Agency's Assessment and Watershed Protection Division, EPA's Office of Water Enforcement and Permits, the Northeastern Illinois Planning Commission, and the North American Lake Management Society. Approximately 125 attendees from Federal, State, and local agencies, Indian tribes, regional planning groups, private environmental consultants, and universities participated. Both the U.S. and Canada were represented. Thirty-one State lake program managers and representatives from seven other States attended.

The presentations and discussions at the conference included:

- Interactions between lake programs and other Federal programs, such as Section 319 Nonpoint Source Programs, USGS's National Water Quality Assessment Program, and Section 305(b) reporting
- Lakeshore management issues
- Communication among lake managers via a lake management computer bulletin board system
- Stream monitoring and stormwater management
- Approaches for lake assessment, including trophic status and sediment assessments
- Specific lake problems with aquatic plant growth and the Zebra mussel.

Two interactive workshops were held that involved three- to five-minute presentations by each of the State representatives, followed by group discussions. The first of these sessions addressed the initiatives that have been taken by the States under the Lake Water Quality

National Conference Looks at States' Lake Programs (continued)

Assessment grants they have received from the Clean Lakes Program. Twenty-nine States reported on their activities.

In the second of these workshops, 19 States reported on their citizen volunteer lake monitoring programs. Within just the States attending, there are over 5,000 citizens actively involved in collecting data on lake water quality and overall conditions of lake watersheds.

Software demonstrations of lake management and information systems and other displays from various Federal, State and local programs were available at the conference. Regionally-organized as well as informal discussions throughout the conference also provided a chance for exchange of ideas and experiences.

Proceedings from the conference will summarize questionnaires completed by the States regarding the lake water quality assessments and citizen monitoring activities, as well as the other presentations. These proceedings should be available within the next year.

[For more information and to obtain a copy of the proceedings, contact Bob Kirschner, Northeastern Illinois Planning Commission, Natural Resources Department, 400 W. Madison Street – Room 200, Chicago, Illinois, 60606. Phone (312) 454-0400.]

U.S. District Court Rules in State of Alaska 303(D) Lawsuit

On April 15, 1991, the U.S. District Court for the Western District of Washington issued a partial summary judgement in a citizens' suit triggered by the failure of the State of Alaska to comply with section 303(d) of the Clean Water Act (CWA), which requires States to identify water quality-limited segments and to establish Total Maximum Daily Loads (TMDLs) for those waters.[1]

There was no dispute that there are water quality-limited segments in Alaska and that the State has never submitted a list of waters, priority ranking, or TMDLs as has been required since 1979.

In light of Alaska's failure to identify any water quality-limited segments or develop any TMDLs over an 11-year period, the court ordered that EPA has a mandatory duty to develop the list of waters and TMDLs, requiring EPA to "initiate its own process of promulgating TMDLs, including any and all necessary steps needed to effectively identify the appropriate waterbodies at issue."[2]

Now that the issue of law concerning EPA's mandatory duty has been settled, the Court will next decide on a remedy. EPA is discussing potential settlement arrangements with the plaintiffs and with other relevant parties including the State of Alaska and the U.S Forest Service.

[For more information on this and other 303(d) lawsuits, contact Don Brady in the Watershed Branch, Assessment and Watershed Protection Division (WH-553), U.S. EPA, 401 M Street, SW, Washington, DC 20460. Phone (202) 382-7074.]

Guidance on Management Measures for Control of Coastal Nonpoint Sources Issued by EPA

Draft Guidance Issued for Comment

The Congress, in adopting the Coastal Zone Act Reauthorization Amendments of 1990 (enacted November 5, 1990), required in Section 6217 that States with approved Coastal Zone Management Programs develop and implement Coastal Nonpoint Source Pollution Control Programs in order to ensure the protection and restoration of their coastal waters. (For a full

1 *For a full discussion on TMDLs, see the story on EPA's newly issued TMDL Guidance in Issue #12 of NPS NEWS-NOTES.*

2 *See Alaska Center for the Environment, et al.* v. *Reilly, et al., No. C90-595R, U.S. District Court for the Western District of Washington.*

discussion of that legislation, see *NPS NEWS-NOTES*, Issue #9, December 1990, available on NPS Electronic Bulletin Board – *NPS/BBS*.)

Section 6217(g) charged EPA with the responsibility of publishing proposed guidance specifying management measures that States are to use to control nonpoint sources of pollution in coastal areas. EPA has developed such guidance, in consultation with the National Oceanic and Atmospheric Administration (NOAA), USDA (SCS, Extension, Forest Service), the Fish and Wildlife Service, and workgroups with representatives from other Federal agencies, and State water quality and coastal management agencies.

There will a 120-day public comment period from the date of publication. EPA is soliciting additional information and supporting data on the measures specified in this draft guidance. The Agency is also requesting information on additional measures that may be as effective or more effective in controlling nonpoint source pollution. Final management measures guidance is to be issued in May of 1992.

Content of Proposed Guidance

EPA's proposed guidance specifies those management measures that EPA, in consultation with Federal agencies and States, considers to represent the best available means for reducing nonpoint source pollution of coastal waters. These proposed management measures, when issued in final form, will serve as the basis for new State coastal nonpoint pollution control programs developed and implemented using State and local authorities. This proposed guidance is an important element of EPA's and NOAA's program to support States in their efforts to reduce coastal nonpoint source pollution and to protect coastal resources.

There are five major categories (with subcategories) of nonpoint sources for which management measures are specified in the guidance:

1. **Agricultural runoff:** erosion and sediment control, confined animal production facilities, nutrient management, pesticide management, grazing management, and irrigation water management;
2. **Urban runoff:** pre-development and post-development controls in urban areas including erosion and sediment control on construction sites, highways, bridges, households, and on-site sewage disposal systems;
3. **Silvicultural runoff:** forest road management, timber harvest planning and site preparation, and re-vegetation of disturbed areas;
4. **Hydromodification**, dams and levees, and shoreline erosion control;
5. **Marinas and recreational boating.**

Management measures that apply to multiple categories of nonpoint sources, such as protection of wetlands and riparian areas, and the use of vegetative filter strips, are also included.

Under the statute, the guidance, at a minimum, must include:

- a description of a range of methods, measures, and practices including structural and nonstructural controls that constitute each management measure;
- a description of activities and locations for which each measure may be suitable;
- an identification of pollutants that may be controlled by the measures and the water quality effects of the measures;
- quantitative estimates of pollution reduction effects and costs of the measures;
- a description of factors that should be taken into account in adapting the measures to specific sites or locations; and
- any necessary monitoring techniques to assess the success of the measures in reducing pollution loads and improving water quality.

Control of Coastal Nonpoint Sources Issued by EPA (continued)

Comments Requested

The following information is being sought by EPA during the comment period, to be used in preparing the final management measures guidance:

1. Information on the activities and locations for which each measure may be suitable and information on factors that should be considered in adapting the measures to specific sites of locations;
2. Information on the pollutants that may or may not be controlled by the measures;
3. Data regarding the pollution reduction effects of the measures;
4. Data regarding the costs and cost effectiveness of each measure;
5. Appropriate monitoring techniques for each resource category;
6. Monetary data on benefits of each measure; and
7. Information on opportunities for point/nonpoint source trading, including information on possible cost advantages of this approach in specific watersheds.

Coastal Nonpoint Pollution Control Program Guidance

EPA and NOAA are in the process of developing State program development and approval guidance to assist States in developing their coastal nonpoint source control programs within which management measures will be applied. This draft program guidance is planned to be issued in August 1991.

State coastal nonpoint pollution control programs must be submitted to EPA and NOAA for approval within 30 months after EPA issues the final section 6217(g) guidance in May 1992. Approved State coastal nonpoint programs will then constitute amendments to both the State's overall Coastal and section 319 CWA Nonpoint Management Programs administered by NOAA and EPA.

[To request copies of the draft guidance and to send comments and additional information, write to: Steve Dressing, Assessment and Watershed Protection Division (WH-553), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.]

Headquarters Notes

EPA Proposes New Criteria to Restrict Pesticides That May Contaminate Groundwater

On April 25, 1991, EPA issued a proposed rule (40 CFR Part 152) that would add new criteria for identifying pesticides as candidates for restricted use because of their potential for contaminating groundwater.

"The proposed rule reflects EPA's emphasis on preventing groundwater pollution, which is one of the guiding principles for all EPA programs," said EPA Administrator William K. Reilly.

The proposed rule is essentially a screening tool. It proposes that the Agency would consider classifying a pesticide product for restricted use if any of the ingredients are:

a. persistent and mobile (i.e., likely to "leach" through soil to contaminate groundwater), or

b. detected in groundwater in three counties anywhere in the United States.

Under an alternative proposal, called Option Two, EPA would consider classifying a pesticide for restricted use if existing data showed that an ingredient is persistent and mobile and that it had been detected in groundwater:

EPA Proposes New Criteria to Restrict Pesticides (continued)

a. in three counties anywhere in the United States at levels greater than 10 percent of the Maximum Contaminant Level established under the Safe Drinking Water Act, or

b. 25 times at any level of detection in four States.

Under provisions of the Federal Insecticide, Fungicide and Rodenticide Act, pesticide products that are classified for restricted use may be purchased and used only by certified pesticide applicators or individuals under their supervision. Restricting the use of a pesticide provides an added measure of protection for health and the environment and, in some cases, may be an alternative to cancellation. The Agency, in cooperation with the U.S. Department of Agriculture, has developed training materials, that include basic information to assist applicators in minimizing the risk of groundwater contamination.

Comments on the proposal must be received within 60 days of May 13, 1991, the date of publication in the Federal Register. Comments should be identified with the number "OPP 3617" and mailed to: Public Response and Program Resources Branch, Field Operations Division (H7506C), Office of Pesticides Programs, U.S. EPA, 401 M Street SW, Washington, DC 20460.

[For more information contact: David Alexander, Office of Pesticides Programs (H7058W) address same as above. Phone: (202) 308-8003.]

A Regional Note

Innovative Riparian Area Management Policy Issued by EPA Region X

EPA's Region X, Seattle[1], has issued a policy statement on the management of riparian areas—the first of its kind. The document was signed by Regional Administrator Dana Rasmussen on March 12, 1991.

Key Provisions are:

Definition

Riparian areas are zones that influence and are strongly influenced by an adjacent aquatic environment. They occur as complete ecosystems or as an ecotone between aquatic and terrestrial ecosystems but have distinct vegetation and soil characteristics because of seasonally free and unbound soil moisture. These areas are associated with rivers, lakes, reservoirs and intermittent or perennial streams. They may also be adjacent to springs, seeps, wetlands, and ephemeral streams.

Purpose and Scope

This document establishes Region 10 EPA policy on the management of riparian areas, primarily those affected by nonpoint source (NPS) activities. EPA recognizes that riparian areas serve many important functions and possess numerous values, including a major role in maintenance of the quality of the Nation's waters. . . . Riparian areas can provide many uses, such as recreation, forage and timber. EPA recognizes that riparian areas can be used for these and other activities if management practices are implemented that protect or restore natural functions.

According to the policy statement, the policy will serve to: 1) inform local, State, and Federal land managers, users and owners of "concerns in the riparian area planning and management process," 2) help States to implement or improve riparian area protection and management programs, and 3) guide Region 10 personnel with respect to EPA's responsibilities under the National Environmental Policy Act (NEPA), the Clean Air Act, and the Clean Water Act (CWA).

1 *Region X serves Alaska, Washington, Oregon, and Idaho*

Functions and Values

Healthy riparian areas are critical to environmental quality. Their presence increases landscape and species diversity and productivity. Continuous interactions occur between riparian areas, [and] aquatic and terrestrial ecosystems through exchanges of energy, nutrients, and movement of plant and animal species. Specific functions resulting from these interactions vary considerably from area to area. Their value is relative to these functions and the potential that they have to carry out these functions. Some of the functions include:

- *Water quality protection and improvement*
- *Habitat for aquatic and terrestrial life*
- *Improved channel and bank stability*
- *Flood storage and desynchronization*
- *Groundwater recharge and discharge*
- *Sources of primary production (detritus) for streams*
- *Aesthetics*

Riparian Management Policy

The policy indicates that, in the *Review of Section 319 Projects and Proposals*

> *EPA considers the protection, improvement, and restoration of riparian areas and the abatement of NPS pollution affecting riparian areas as a high priority for funding through Section 319 of the Clean Water Act. EPA will expect to see riparian areas addressed in all watershed improvement grant proposals. Attention will be focused on the condition of the riparian areas and the expected impact on riparian areas by treatment of the entire watershed.*

Additionally, EPA expects the issue of the value of healthy riparian areas to be addressed in the protection of designated water uses and in meeting States' Water Quality Standards; in environmental impact statements; and in State monitoring programs and public information and involvement activities.

With respect to NEPA documents and Natural Resource Management Plans, the policy states that "EPA will consider functions and values in assessing riparian area project impacts. EPA will actively promote alternatives which reduce or minimize adverse environmental impacts to riparian areas."

Finally, the policy states that "EPA will encourage and support innovative solutions to site-specific problems in riparian management."

Legal Authorities

Specific legal authorities for the Riparian Area Management Policy are cited:

> **Clean Water Act (33 U.S.C. 466 et seq.) Section 101 (a)**
>
> *The objective of this chapter is to restore and maintain the chemical, physical and biological integrity of the Nation's waters . . .*
>
> *(7) It is the national policy that programs for the control of NPS of pollution be developed and implemented in an expeditious manner so as to enable the goals of this act to be met through the control of both point and nonpoint sources of pollution.*

Additionally, EPA's responsibilities under the **National Environmental Policy Act (42 U.S.C. s4321 et seq.)** and the **Clean Air Act (Section 309) (42 U.S.C. 7609, Public Law 91-604 12(a), 84 Stat. 1709)** are cited.

[For more information and for copies of the policy, contact: Elbert Moore, Nonpoint Source Coordinator, Region X, U.S. EPA, 1200 Sixth Ave., Seattle, WA 98101. Phone (206) 553-4181.]

Notes from the States and Localities (where the action is)

The Environmental Quality Section of Utah's Department of Agriculture Manages Implementation of State NPS Program

The Environmental Quality Section of the State of Utah's Department of Agriculture (UDA) manages the implementation of the State's nonpoint source water pollution control program through an agreement with the State Department of Health. Essentially UDA conducts all of the activities necessary for NPS management program implementation, with the Department of Health conducting the monitoring of stream conditions and program performance.

As a part of this management, a broadly based NPS Task Force has been organized to coordinate Statewide NPS control and to provide program leadership. One of their recent publications explained the beginnings of this interagency cooperation:

> *Activities conducted in Utah before the Clean Water Act amendments were passed include local zoning and building regulations aimed at reducing urban runoff, incentive programs promoting the voluntary adoption of soil conservation practices, and education on the proper use of pesticides. Sometimes the direct goal of these programs was to control NPS Pollution, but more often the aim was to conserve soil or water. Activities were limited due to lack of funds, but this shortfall forced agencies to rely on one another to achieve their goals.*

The 19-member Task Force, chaired by the Environmental Quality Section, UDA, is made up of representatives of these groups:

State Agencies
- Governor's Office
- UDA
- Bureau of Water Pollution Control (Health Department)
- Div. of Water Resources
- Div. of Wildlife Resources

Federal Agencies
- Bureau of Land Management (DOI)
- UDSA Forest Service
- USDA Soil Conservation Service
- Agric. Stabilization & Conserv. Serv.

Local Governments
- Five County Assoc. of Governments
- Mountainland Assoc. of Governments
- Salt Lake City-County Health Dept.

Associations
- Assoc. of Conservation Districts
- Utah Farm Bureau Federation
- Utah-Idaho Farmers' Union
- Utah Wildlife Association
- Utah Wildlife Leadership Coalition

Other
- USU Cooperative Extension Service

The Task Force takes the lead in the coordination of Utah's nonpoint programs. Its goals include:

- Provide a forum for the exchange of information on activities that affect NPS pollution control.
- Serve as the coordinating body for the review and direction of Federal, State, and local government programs to ensure that they meet NPS goals.
- Provide guidance and application procedures for funding of NPS control projects and review and approve project proposals that request funds under section 319 of the Clean Water Act.
- Update list of priority watersheds for NPS control activities.
- Provide oversight of NPS control activities and prioritize activities.

There are four primary components to Utah's Nonpoint Source Control Program:

Environmental Quality Section of Utah Manages Implementation of State NPS Program (continued)

- **Watershed Program** — The Watershed Program is active in four areas: controlling NPS in priority watersheds, providing assistance for stream alteration projects, restoring wetlands in urban areas, and pinpointing the sources of salt- and sediment-loading of the Colorado River.
- **Education** — The general education program has been geared toward secondary and high school students and the general public. Slide shows, pamphlets, tips sheets, workbooks, activities and other informational materials are being developed. Almost 200 people participated in the first annual statewide NPS conference. The public learned about water quality issues at UDA's NPS display at Utah's annual Earth Day Fair.
- **NPS Surface Water Monitoring Program** — The Utah Dept. of Health has established water quality monitoring stations, essential to the tracking of Utah's progress in NPS cleanup, in three priority watersheds. New stations will be added as planning and control activities are scheduled in new watersheds.
- **Agricultural Groundwater Monitoring Program** — Instituted in 1988 by UDA, the Agriculture Groundwater Monitoring Program:
  - determines whether ag chemicals have contaminated Utah's groundwater;
  - develops a management plan to keep the State's groundwater clean; and
  - teaches pesticide users how to safely use pesticides.

UDA has recently published an informative bulletin entitled: *Polluted Runoff: A Guide to Utah's Strategy for Cleaning Up Nonpoint Source Water Pollution,* which is designed to inform interested citizens and public officials. It includes:

- Why You Should Care About Nonpoint Source Pollution
- Highlights of Utah's Nonpoint Source Control Program
- Coordinating Statewide Nonpoint Source Control
- Funding Nonpoint Source Pollution Solutions
- Nonpoint Source Contacts

The last item lists the names, addresses, and phone numbers of some 19 key participants in Utah's nonpoint program.

The Department of Agriculture has also released an eye-catching bumper sticker with the message: It's Your Water — Stop Poison Runoff, featuring a cartoon of a belly-up, dead fish. This item is sure to get the attention of a lot of people on Utah's highways.

[For more information, and copies of the Polluted Runoff brochure and the Poison Runoff Bumper Sticker, write to: Jim Paraskeva, Chair, Utah Nonpoint Source Task Force, Environmental Quality Section, Utah Dept. of Agriculture, 350 N. Redwood Road, Salt Lake City, UT 84116, Phone: (801) 538-7172.]

State of Washington Issues Call for Applications for Water Pollution Control Low Interest Loans, Including Nonpoint Source

Washington's Department of Ecology has announced that the State will accept applications for low interest loans from its State Revolving Fund (SRF) for high priority water pollution control projects. Loan proceeds can be used for both facilities (structures) and activities. The application period will begin May 28, 1991, and close June 28, 1991.

Approximately $41.7 million will be available. Interest rates are 0 percent for loans with terms up to 5 years, 4 percent for 6-14-year loans, and 5 percent for 16-20-year loans.

The Department of Ecology has earmarked 80 percent of the fund for construction of water pollution control facilities, 10 percent for nonpoint source pollution control projects, and 10 percent for estuary conservation and management projects on Puget Sound.

State of Washington Issues Call for Water Pollution Control Low Interest Loans (continued)

SRF loans have replaced EPA's construction grant program. This is the third round of such SRF funding in Washington. Examples of projects funded during last year's round include secondary treatment plant upgrades, a local loan program to address failing septic tanks, and a combined (stormwater/sanitary) sewer overflow reduction project. Loan amounts ranged from $200,000 to $7.9 million.

Congress authorized the establishment of SRFs with the enactment of the 1987 Amendments to the Clean Water Act. Through 1994, EPA will provide capitalization grants to States that have SRFs. This money, along with a required State match of 20 percent, provides the basis for Washington's current loan offerings.

Four workshops are being conducted around the State during the last week in May and the first week of June to train potential applicants and to distribute program guidelines and application packets.

[For further information contact: Dan Filip (206) 459-6061 or Steve Carley (206) 459-6104. Or write: Water Quality Financial Assistance Program, Department of Ecology, Mail Stop PV-11, Olympia, WA 98504-8711.]

North Carolina Prepares to Implement Watershed/Basinwide Stream Pollution Control Strategy; TMDLs to be Established

EDITOR'S NOTE: The following article was printed in the March/April 1991 issue of the *Water Resources Institute News* of the University of North Carolina. It explains the State of North Carolina's movement into watershed management. The article was headlined: *Strategy represents next step toward Clean Water Act water quality goal.* It is reprinted as it appeared, in the interest of informing other States how one State is reporting its emerging watershed actions to the public.

Using an approach that could be likened to giving the fabled blind men a look at the whole elephant, the North Carolina Division of Environmental Management's Water Quality Section (DEM) is preparing to implement a river-basin-wide strategy for protecting surface water quality in North Carolina. According to J. Trevor Clements, an assistant chief with the Water Quality Section and one of the coordinators of the basinwide initiative, the strategy will integrate information from water quality and biological monitoring, wastewater discharge permitting, and nonpoint source pollution control efforts to give regulators a complete picture of water quality conditions in each of the State's 17 river basins.

Being able to integrate all this information will allow DEM to estimate each major river's ability to assimilate wastes (assimilative capacity), to estimate the total maximum daily load (TMDL) that the river can absorb without impairment of its intended best use, and to control stream pollution in support of water quality goals more effectively than before.

In the past, said Clements, most water quality management decisions have been made on an ad hoc basis. Efforts have addressed specific requirements or specific problems and have therefore produced only a spotty picture of water quality conditions across the State. With the basinwide approach, staff management activities (monitoring, permitting, etc.) will be focused within one basin at a time to support more proactive strategies.

Today, as in the past, permits to discharge treated wastewater (called NPDES or National Pollutant Discharge Elimination System permits) are issued individually or renewed individually every five years. Each permit has limits on the concentration of pollutants that can be in the wastewater discharges. These limits are derived from minimum technology-based guidelines and/or more stringent water quality-based requirements.

Currently, there are approximately 3,200 active NPDES permits in North Carolina, including 144 municipal wastewater treatment plants that receive influent from more than 1,000 significant industrial users. Until this time, there has not been a consistent method for

assessing the cumulative impact of all dischargers and, just as importantly, all nonpoint sources of pollution within a river basin. That is why some rivers in North Carolina show signs of stress (in EPA parlance, they are "water quality limited") even though the majority of dischargers in the basin may be complying with their permits.

By integrating all information on activities that can affect stream water quality, the basinwide initiative will make it possible to modify permits to avoid exceeding a stream's assimilative capacity.

In Clements' words,

> *We can make our management decisions on upstream waters consistent with protecting uses downstream.*

Although the basinwide initiative has been on DEM's drawing board for some time, impetus for implementation is coming from the Environmental Protection Agency. EPA is beginning to push States to step up the implementation of the Clean Water Act (CWA). Section 303(d) of the CWA mandates that where technology-based pollution controls have not accomplished the primary CWA water quality goal, States must take the next step toward the goal of restoring and maintaining the "chemical, physical, and biological integrity of the Nation's waters." The next step EPA calls the "water-quality based step," and it involves just what N.C. DEM has been preparing itself for — establishing assimilative capacity and TMDLs for each water-quality limited water body in the State.

> *For the first time,* said Clements, *DEM is in a position to carry out its water quality charge as originally envisioned by the authors of the Clean Water Act. Formerly, we didn't have the tools to look at entire basins, to bring all the needed information together. Now, however, we're very close to being able to develop basinwide planning that will result in a consistent strategy, an equitable distribution of assimilative capacity, and more effective water quality protection.*

The basinwide strategy will be made possible by computer technology, including shared databases, mathematical modeling, and — most notably — the State's increasingly sophisticated Geographic Information System (GIS) capability. As funds become available, DEM will automate its discharge permit writing process and implement the framework it has developed to centralize its permitting and monitoring databases. These systems will generate some of the numbers that will be plugged into river basin models to determine assimilative capacity and TMDLs and will provide some of the information for the section's GIS.

In order to estimate a TMDL for a stream, regulators must first estimate the background pollutant load. This data will come from the ambient monitoring system. They must then estimate the amount of pollution contributed by nonpoint sources, such as agriculture, highway construction, forestry, and urban runoff. GIS capabilities will assist in this task by providing many kinds of information, such as land use data.

Regulators then must estimate how much additional pollution the stream can absorb without use impairment (or how much excess it already has — ed) and allocate a percentage of that assimilative capacity among point sources dischargers in the basin. Here both the modeling and GIS capabilities come into play; the GIS providing spatial and relational information and the models generating a "budget" for point source discharges.

To satisfy planning requirements of 303(d), North Carolina must (1) identify streams that are water-quality limited, (2) rank these streams according to the severity of their problems, (3) establish TMDLs for each stream, and (4) get EPA approval of the plan. DEM has already taken tentative steps toward meeting these requirements. In September 1990, the division submitted to EPA a priority listing and time schedule for development and implementation of basinwide management plans. This list essentially tells EPA which river basins in North Carolina DEM considers to have the most pressing water quality problems and the date by which the division expects to start actually using TMDLs to allocate assimilative capacity among discharges in each basin (see boxed list).

North Carolina Prepares to Implement Stream Pollution Control Strategy (continued)

PRIORITY LISTING AND SCHEDULE FOR DEVELOPMENT AND IMPLMENTATION OF RIVER BASINWIDE WATER QUALITY MANAGEMENT PLANS IN NORTH CAROLINA

1993: Lumber; 1995: Tar-Pamlico, Catawba, French Broad, New; 1996: Cape Fear; 1997: Roanoke, White Oak, Savannah, Watauga, Little Tennessee, Hiwassee; 1998: Chowan-Pasquotank, Broad, Yadkin-Pee Dee.

To distribute (or in some cases redistribute) assimilative capacity among point source dischargers within a single basin in an equitable manner, DEM must get all dischargers on the same permit renewal schedule. To accomplish this, the division began in January 1990 to issue short term permits, that is, permits that are in force for less than the standard five years. According to Clements, the division may have to issue some dischargers two permits within a period normally covered by one permit in order to get them in step with the basinwide implementation schedule.

> *Since EPA has ruled that we cannot exceed the maximum permit period of five years as mandated in Federal regulations, we'll have to issue some facilities a shorter permit to adjust the expiration dates to the appropriate year,* said Clements. *This strategy will, of course, doubled the permitting workload during this adjustment period and was a major reason for developing the automated permit writing system.*

Clements said that the basinwide approach will give municipalities and other dischargers a fixed target around which to plan waste treatment capacity and technology.

> *Those considering new or expanded wastewater treatment facilities will know where there is assimilative capacity and where there is no assimilative capacity. They'll know where higher treatment will be required. Wastewater treatment plants can adopt technology for the future, technology that they can build on rather than retrofit.*

In addition, Clements said, the basinwide approach will make it evident where water quality problems are and where major sources of pollution are. And, it will enhance public participation in water quality planning efforts.

> *In the past there has been a multitude of public notices and hearings on individual discharge permits, and that makes it difficult for the public to focus on anything and become involved,* he said. *In the future, we will be able to present a basinwide plan, and a major hearing can be scheduled so the public can be given a view of the entire basin, how each discharger or other pollution source fits in and impacts others. We expect public input will be substantially increased.*

The division will produce a written description of the basinwide initiative that will serve as a report to EPA, a reference document for the staff, and a document to introduce and explain the concept to the public.

[For more information contact: J. Trevor Clements or Beth McGee, DEHNR, Division of Environmental Management, P.O. Box 29535, Raleigh, NC 27626-0535. Phone: (919) 733-5083.]

For further information on TMDLs, copies of EPA's new TMDL Guidance (as reported in Issue # 12 of News-Notes), and/or progress on water-quality-based pollution control management in particular States, readers may contact the appropriate Regional TMDL Coordinator, listed below:

Region I
ME,NH,VT,MA,CT,RI
Dave Pincumbe,
Water Quality Mgmt Sec.
US EPA Region I
(WQM-2103)
J. F. Kennedy Bldg.
Boston, MA 02203
(617) 565-3544

Region II
NY,NJ,PR,VI
Rosella O'Connor,
WLA Coordinator
US EPA Region II
26 Federal Plaza, Rm 813
New York, NY 10278
(212) 264-8479

Region III
PA,DE,MD,VA,WV,DC
Tom Henry,
Water Mgmt Div, WQC Sec
(3MW12)
US EPA Region III
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-8243

For Further Information on TMDLs, Contact the Appropriate Regional TMDL Coordinator (continued)

Region IV
KY,TN,NC,SC,GA,FL,AL,MS
Jim Greenfield,
Water Quality Mgmt Division
US EPA Region IV
345 Courtland St., NE
Atlanta, GA 30365
(404) 347-2126

Region V
MN,WI,MI,IL,IN,OH
Robert Pepin,
Regional Wasteload Coor.
US EPA Region V
5WQS-TUB8
230 S. Dearborn Street
Chicago, IL 60604
(312) 886-1505

Region VI
NM,OK,TX,LA,AR
Mimi Dannel,
TMDL Coordinator
Water Mgmt Div (6W-QT)
US EPA Region VI
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 655-7145

Region VII
NE,IA,KS,MO
John Houlihan,
Planning & Eval.Sec.
US EPA Region VII
726 Minnesota Ave.
Kansas City, KS 66101
(913) 551-7432

Region VIII
UT,CO,WY,MT,ND,SD
Bruce Zander,
WQ REQ Sec
US EPA Region VIII
(8WM-SP), Suite 500
999-18th St.
Denver, CO 80202-2405
(303) 293-1580

Region IX
CA,NV,AZ,HI,GU,TT,AS,MP
Laura Tom ,
Wasteload Alloc Co
US EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2006

Region X
AK,WA,OR,ID
Bruce Cleland,
WLA Coordinator
Environ. Serv. Div
(ES-097)
US EPA Region X
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-2600

Colorado State Soil Conservation Board and Colorado Trout Unlimited Sign a Water Quality Memorandum of Understanding

Concern with the quality of the natural environment and the maintenance and improvement of riparian areas were prime considerations that led, late last fall, to the execution of a formal Memorandum of Understanding between the Colorado State Soil Conservation Board and Colorado Trout Unlimited, according to Bob Zebroski, who helped develop the agreement. Zebroski, State Soil Conservation Board Senior Soil Conservation Representative, emphasized the commitment of both sides to the issue.

The agreement itself, States it in a straightforward manner:

> *. . . The purpose of this MOU is to provide a partnership framework . . . for cooperative management activities to maintain and enhance the quality of coldwater resources on public and private land. . . .*
>
> *. . . CTU's purpose is to preserve, protect and enhance the coldwater habitat, resources, and fisheries of Colorado. It utilizes its extensive volunteer resources to accomplish this purpose . . . The Board's purpose is to provide leadership in the protection of Colorado's natural resources by a consistent soil and water conservation program. . . .*

The Board pledged that it will:

> *Encourage the soil conservation districts to develop a working relationship with local chapters of CTU so there can be a joint effort to address water quality concerns. . . .*

The Colorado Conservator, *The Nonpoint Source Newsletter of Colorado,* published by the State Soil Conservation Board and the Colorado Association of Soil Conservation Districts, commented on the agreement in its Spring 1991 issue:

> *The partnership formed by the Memorandum will provide an avenue for the funds and the extensive volunteer assistance of Trout Unlimited to be coupled with the technical assistance available through Colorado's 80 soil conservation districts. Representatives of each party will meet to identify segments of streams and rivers which may be endangered by pollution. Plans*

Signing of a Water Quality Memorandum of Understanding in Colorado (continued)

will be developed which will use the available resources of each to implement an agreed-upon solution.

Zabroski, in a conversation with *NPS NEW-NOTES*, added:

> *"This joint effort is the result of a mutual desire to implement the State of Colorado's Nonpoint Source Management Program prepared under section 319 of the Clean Water Act. Numerous priority watersheds have been designated by the Program and it will take the cooperation of everyone to get the job done.*
>
> *"A good example of the joint effort to address a nonpoint source water quality concern is the Threemile Creek area in Park County. Fourteen different agencies including CTU and the Soil Conservation Board have entered into an agreement to implement a plan which will protect the cold water fishery in the South Platte River of which Threemile Creek is a tributary."*

[For more information contact: Bob Zebroski, State Soil Conservation Board, 219 Centennial Bldg., 1313 Sherman Street, Denver, CO 80203. Phone: (303) 866-3351.]

Nebraska Finds Nonpoint Sources Threatening 101 Recreational Lakes

After assessing approximately 7,330 of the State's 13,089 miles of streams and rivers, the Nebraska Department of Environmental Control (NDEC) concluded that 71 percent (5,204 miles) of those stream miles were impaired by agricultural and urban nonpoint source (NPS) pollution, and estimated that more than 90 percent of Nebraska's 415 publicly owned lakes are affected by nonpoint sources. In 1989, the NDEC classified 101 public lakes as actually being "threatened," meaning that recreation and the aquatic life in them may be impaired if existing water quality conditions continue. Fish kills, closing of public beaches, and increased health concerns are just some of the consequences.

Nebraska and The Clean Lakes Program

The intent of EPA's Clean Lakes Program is to define the cause and extent of pollution problems and to develop and implement techniques to restore affected lakes. The NDEC is responsible for coordinating the program for Nebraska.

Work first began in Nebraska in 1979, when the NDEC received a grant to survey and classify publicly owned lakes in the State. State priorities and inconsistent Federal funding kept involvement in the program minimal until 1989, when Nebraska received funding to conduct studies designed to identify water quality problems, define problem sources, and develop a course of corrective action on 12 lakes. Three Natural Resources Districts (NRDs) are sponsoring these projects.

Lake restoration activities relating to NPS pollution are not, however, limited to the Clean Lakes Program or efforts of the NRDs. The Nebraska Game and Parks Commission's Fisheries Division has budgeted for enhancement of recreational sport fisheries in lakes impaired by NPS pollution in the past. One of their efforts includes a $200,000 rehabilitation project on Stagecoach Lake that will be completed this year. However, Wes Sheets, Chief of the Fisheries Division, emphasized that,

> *". . . Restoration efforts such as this are extremely costly, and they also take personnel resources that are badly needed in other areas. Much of this could be eliminated by conservation practices that would curb transport of the soil causing the NPS pollution problems."*

Pollution prevention is certainly encouraged by the recently completed USEPA *Guidance for Water Quality-based Decisions: The TMDL Process*, which States that identification of threatened good-quality waters is an important part of the TMDL approach. Since streams and rivers are the lifelines of lakes and reservoirs, the amount of NPS pollution that enters the former must

be curtailed to protect the latter. This is a goal of Nebraska's Nonpoint Source Management Program.

Nebraska's Nonpoint Source Management Program

Nebraska's "Nonpoint Source Pollution Management Program" was filed with the Environmental Protection Agency in January 1990. It calls for cooperative integration of the resources and efforts of an array of Federal, State and local agencies, as well as the University of Nebraska-Lincoln. The mission of this program is twofold:

- Protect the quality of Nebraska's surface and ground water resources from nonpoint source pollution.
- Improve waters that have been degraded by NPS pollution wherever and whenever possible.

A $865,000 USEPA grant is financing four NPS pollution projects in the State during the first year of a planned five-year effort to manage NPS pollution and its impacts.

One portion of the grant will finance measures to help control head cutting at the source of Long Pine Creek. The head cut, which moves as much as 400 feet a year, creates a large sediment load in the stream, and officials fear that sediment from the headwaters will negate the beneficial effects of improved land management practices and treatments downstream.

Fencing to exclude cattle from the immediate vicinity of the headwaters, and a "drop structure", designed to partially stabilize the stream bank at the origin of the creek, will be installed. These measures will reduce sloughing of the loose, unconsolidated streambed sediment.

Two other projects being financed by the grant focus on the effects of NPS pollution on groundwater. One, sponsored by the Central Platte NRD, is an intensive nitrogen management plan designed to help producers maintain corn yields while slowing the rate of increase in groundwater nitrate-nitrogen concentrations. The other, conducted by the University of Nebraska Water Center in cooperation with the NDEC, is a study to determine the extent and scope of NPS pollution leaching in Nebraska. Deep soil-cores are being taken to ascertain the movement of both nitrate-nitrogen and atrazine and to help design strategies to prevent leaching.

The USEPA grant will also finance sediment trapping structures — some of which function as wetland areas — upstream of the newly opened Czechland Lake in Sauders County. The intent of the project is to demonstrate the benefits of NPS pollution prevention by "filtering" sediment and accumulated nutrients and pesticides from water before it reaches the lake.

Czechland Lake

Czechland Lake, constructed on Cottonwood Creek about 1 mile north of Prague in Sauders County, Nebraska, was completed in the fall of 1989. When filled, it will have a surface area between 85 and 100 acres and will drain 3,475 acres. Czechland Lake is also known as Cottonwood Structure 7-A of the PL-566 Watershed Protection Project, under the Soil Conservation Service (SCS). It is the last of 12 flood control structures to be built in this watershed.

Because the lake is located within 50 miles of approximately 40 percent of Nebraska's population base, it has potential for heavy recreational use. The NRD, therefore, obtained a local agreement to convert it into the Czechland Lake Recreation Area, which will encompass 192 acres. Long-term goals for the area include prolonged use of the lake for recreation, including a thriving warm-water fishery, swimming, and wading. There is tremendous interest, therefore, in protecting Czechland Lake from degradation due to NPS pollution.

Nebraska's 1988 Nonpoint Source Assessment Report did not initially identify Czechland Lake as a problem area, due to its recent construction. The Cottonwood Creek Watershed, however, was assessed. Documented problems in the watershed included: poor buffer zones, moderate

Nonpoint Sources Threatening 101 Recreational Lakes in Nebraska (continued)

to severe streambank erosion and a sizeable silt and sedimentation problem. The water erosion potential was estimated at 32 tons/acre/year, a high loss rate that placed the watershed in the SCS critical erosion category and caused Czechland Lake's NPS pollution potential to be very high.

The USEPA NPS Pollution grant has enabled the NRD to begin dealing with the problem before water quality in the lake begins to degrade. The Czechland Lake Watershed Nonpoint Source Implementation Project will include sediment and erosion control programs to limit the amount of sediment and other pollutants entering the lake (some structures have already been installed), computer modeling of the watershed to assist in planning, an extensive monitoring plan, and a comprehensive NPS pollution information and education program.

The objectives of the Czechland Lake Watershed Nonpoint Source Implementation Project are consistent with the goals of Nebraska's Nonpoint Source Pollution Management Program that were mentioned above. The objectives are:

- Monitor the Cottonwood Creek and the lake to assess quality changes over time.
- Demonstrate nonpoint pollution prevention by installing treatments prior to the lake's existence and assessing the efficiency of sediment/nutrient traps above a reservoir.
- Demonstrate the effectiveness of targeting and treating critical NPS pollution areas as opposed to whole watershed treatment.

Lessons learned from experiences in the Czechland Lake watershed will be applied to future projects within the NRD and the State of Nebraska. Perhaps, in the future, these lessons can even serve projects throughout the Nation.

NOTE: A longer version of this article by Paul Brakage of NDEC appeared in the May 1991 edition of "Nebraskaland."

[For further information contact: Dave Jensen or Paul Brakage, Surface Water Section, NDEC, 301 Centennial Mall South, Box 98922, Lincoln, NE 68509-8922. Phone: (402) 471-4700]

California Model Educational Program Focuses on Pollution Prevention

The California State Water Resources Control Board recently awarded $227,000 to The Lindsay Museum in Walnut Creek for the creation of a model nonpoint source pollution prevention program. The money was a part of a section 319(h) grant to the State and was matched with $151,333 from the city of Walnut Creek, which has a long history of environmental action in the area of water resources.

Recognizing that many nonpoint source problems originate at the local level, the program will emphasize public "ownership," education and involvement. A Walnut Creek press release announcing the grant said that the campaign will "reach the public through the media, target the industrial and commercial sector through special seminars and involve children through the schools."

Developing educational curricula for the schools is considered a vital component of the model. "With proper teaching and training, children will take better care of the waterways in the future than adults do now," noted the press release.

Walnut Creek will be the testing ground for the model, which will then be replicated on a city-by-city basis throughout the State. The Lindsay Museum was selected for the project because of its excellence in environmental education.

[For more information, contact: Tom Howard, State Water Resources Control Board, PO Box 944213, Sacramento, CA 94244-2130. Phone: (916) 324-7970.]

Agricultural Notes

EPA–1990 Farm Bill Implementation Update

EPA Regional and headquarters staff participated in a workshop on May 2-3 to develop an action plan for the new 1990 Farm Bill implementation. Approximately 40 EPA staff from the EPA Regions and Headquarters attended the meeting, held at the State Plaza Hotel, in Washington, DC. Staff from four USDA agencies participated in the workshop to explain the new Farm Bill provisions and to help EPA Staff identify opportunities for further cooperation and program integration.

At the meeting, USDA indicated a strong interest in using State section 319 watershed and groundwater priorities for targeting conservation programs, including on-going activities under the President's Water Quality Initiative being undertaken at USDA. Headquarters and Regional EPA staff met in breakout groups to develop recommendations to followup on Farm Bill implementation. Specific recommendations include providing lists of State priority watersheds and groundwater areas to USDA for targeting the Conservation Reserve Program (CRP) and Agricultural Stabilization and Conservation Service (ASCS) Special Projects, and broadening eligibility of wellhead areas for the CRP. Workshop participants developed many recommendations on a broad array of issues, including data management, monitoring, and communication among Federal and State agencies.

A summary of the workshop proceedings and recommendations is being prepared by the Office of Ground Water and Drinking Water, Ground-Water Protection Division. A draft of the report will be sent to workshop participants by mid-June. A final report will be available for EPA senior management, USDA, and other interested individuals.

[For more information, contact John Reeder, Office of Ground Water and Drinking Water, (WH-550) U.S. EPA, 401 M Street, SW, Washington, DC, 20460. Phone: (202) 382-5512.]

Report Raises Questions About Progress With Farm Bill Conservation Compliance Programs

Money, Staff are Major Problems

While many farmers appear to be implementing their Federal soil conservation compliance plans on schedule, others are not, a national study conducted by the Soil and Water Conservation Society (SWCS) indicates. SWCS is a nonprofit organization of conservation professionals. The study was released April 17, 1991.

The study also points up important problems with implementation of the sodbuster and swampbuster provisions, which are among the four major programs contained in the Conservation Title of the 1985 farm bill, later extended in the 1990 farm bill.

The Conservation Title of the 1985 farm bill dramatically changed soil and water conservation programs in this country. Instead of a purely voluntary, first-come, first-served approach to the delivery of technical and financial assistance, Congress linked eligibility for a variety of Federal farm program benefits (commodity price supports, agricultural credit, and crop insurance) to appropriate conservation behavior on the part of farmers, specifically the application of soil erosion control measures and wetlands protection.

The three so-called compliance provisions of the 1985 farm bill—conservation compliance, sodbuster, and swampbuster—established a historic new linkage between farm program benefits and land stewardship. The conservation compliance policy requires all farmers with highly erodible cropland to obtain conservation plans for that land from their local Soil Conservation Service (SCS) office by December 31, 1989, and have those plans fully implemented by January 1, 1995.

The *Washington Post*, in reporting on the SWCS survey on April 22, 1991, and the role of the Soil Conservation Service (SCS), made these observations:

. . . the Soil Conservation Service was for decades the farmer's friend, doling out advice and financial assistance in a ceaseless struggle to save the nation's topsoil from the ravages of wind and water.

Then along came the 1985 farm bill, and suddenly everything changed. For the first time, farmers were told that in order to receive vital Federal crop subsidies, they would have to take better care of their land. Almost overnight, the venerable Soil Conservation Service went from adviser to enforcer.

The transition has not been easy.

Only Half in Compliance

Seven site visits conducted in the Corn Belt, Great Plains, and Pacific Northwest showed that 69 percent of the practices that were to have been applied by 1990 under the conservation compliance policy of the 1985 and 1990 farm bills were in place on schedule. Twenty-four percent of the practices were not in place or did not meet plan specifications. Another seven percent of the practices were in fields that proved inaccessible.

As a result of the practices not in place or not meeting plan specifications, about half of the 123 farms checked represented potential violations of the policy. According to the report, crop residue management practices, such as conservation tillage and contouring accounted for 75 percent of the practices missing or not meeting plan specifications.

In many instances crop residue management practices, such as conservation tillage, did not provide the planned level of soil cover, SWCS officials reported.

> *This wasn't unexpected,* said Max Schnepf, who directs the study for SWCS. *Our field work in 1989 showed that many plans called for crop residue levels that would be difficult to achieve by farmers who lack experience with conservation methods. Moreover, some plans call for residue levels that probably can't be achieved with current machinery and cropping practices.*
>
> *It's important that farmers not put off implementing their compliance plans,* emphasized Tony Vrana, SWCS executive vice-president, *particularly if they must significantly increase the crop residue on their fields. Experimenting with different forms of tillage prior to the plan implementation deadline could be important in achieving the required residue levels and remaining in compliance.*

Farmers with highly erodible cropland have until January 1, 1995, to fully implement their conservation plans.

One Third of U.S. Cropland Subject to Compliance

Conservation compliance is the most sweeping of the four provisions in the Conservation Title of the 1985 farm bill. About one third of all U.S. cropland, an estimated 140 million acres, is subject to this policy, according to SWCS. The SWCS study team found strong support for the conservation compliance policy among local USDA program managers, producer-committee members, representatives of agribusiness, and farmers.

Little Enforcement of Compliance

Little monitoring and enforcement of the conservation compliance policy has been done by USDA agencies to date. And much of what monitoring has occurred has been done at inappropriate times and without the use of accepted crop residue measurement techniques, according to the SWCS findings. SCS field office staff members were not making the required five percent annual spot-checks of conservation compliance plans at all locations visited by the study team.

The study team found that only one conservation compliance violation had been reported by SCS field office staff members to Agricultural Stabilization and Conservation Service (ASCS) officials prior to their visit in the seven study counties. No Federal farm program benefits had been withheld or denied under the conservation compliance policy by ASCS in any of the seven counties.

While sodbusting appears limited, according to the SWCS report, some land in native grass or trees is being converted to crop production, especially in the Great Plains.

The main problem with USDA's implementation of sodbuster, Schnepf said, *is that little attention is being given to enforcement of the policy at some locations. Members of our evaluation team witnessed a number of apparent sodbuster violations, but no farmers had been held accountable for the violations.*

Problems cited with implementation of the swampbuster policy also had to do with USDA's enforcement of the policy and with differences of opinion between farmers and government officials over the definition of a wetland and the policy's intent.

In spite of problems, 13 converted wetlands had been identified and documented in the six locations visited. One violation resulted in the loss of $77,000 in program benefits, according to the SWCS report.

Question Farmers' Understanding of Plans

According to the study report there continues to be a great deal of concern among USDA personnel and ASCS committee members at most locations about whether all farmers really understand their conservation compliance plans. Some doubt was expressed by farmers as to what will be required of them to implement the plans by the January 1, 1995, deadline.

These individuals, along with farmers and agribusiness representatives, also question if the conservation compliance policy will be enforced. In the mail survey of farmers made by the SWCS officials, 46 percent said they did not expect to lose benefits if they were found out of compliance; another 30 percent said they were not sure if they would lose benefits. An earlier survey of farmers conducted as a part of the study project also indicated that many producers did not expect the policy to be enforced or were not sure it would be.

Because of the variability in plan quality, the study team says they concluded in their earlier report that a significant portion of the conservation plans probably would need to be revised. That is proving to be true at some of the locations visited in their second (1990) round of field work. Local USDA program managers at all sites said they anticipated the need for many more revisions prior to the 1995 plan application deadline, however. About 15 percent of the 123 conservation plans in the study sample had been revised prior to the team's visit.

Many of the individuals interviewed in the study agreed that the graduated penalty for conservation compliance in the new 1990 farm bill, will help overcome a reticence at some locations to enforce the policy, reported SWCS.

The SWCS report does state that, in spite of any shortcomings in program performance cited, there are many positive things happening as a result of the Conservation Title in the 1985 farm bill. These include improved interagency cooperation in program administration, greatly improved awareness among farmers about soil erosion control and wetland protection needs, and the significant commitments made by many farmers to do something positive in response to these needs as a means of remaining eligible for many Federal farm program benefits.

The SWCS report recognizes that staffing levels in local USDA offices, particularly those of SCS, and a lack of public cost-sharing monies for the installation of certain conservation practices, especially terraces, pose significant constraints to the timely implementation of conservation compliance.

In commenting on the report, SWCS's Vrana remarked:

We concluded in our first project report released a year ago that the provisions of the 1985 farm bill held great promise for achieving important gains in soil erosion control and wetland protection on our Nation's farms. We think that promise still exists, particularly with some of the refinements, such as graduated penalties, included in the 1990 farm bill, but it appears we may not realize as much of the promise as quickly as we had hoped.

The SWCS report is the second from a three-year study funded mainly by The Joyce Foundation of Chicago, Illinois. A final report will be issued later this year after completion of 14 additional field visits.

[For more information contact: Max Schnepf, Soil and Water Conservation Society, 7515 Northeast Ankeny Road, Ankeny, Iowa 50021-9764. Phone: (515) 289-2331.]

EDITOR'S NOTE: Under 40 CFR 122.23, a Federal NPDES permit is required for *concentrated animal feeding operations* (feedlots) with over 1,000 animal unit capacity operations. As states have been certified to take over and operate the NPDES program, they have treated the 1,000 animal unit threshold in different ways. *NEWS-NOTES* will, from time to time, briefly report on some of the ways that States are regulating concentrated animal feeding operations. This report deals with the State of Wisconsin.

Wisconsin Includes Small Animal Feeding Operations

Animal feeding operations, fewer than 1000 animal units (AU), may be subject to the provisions of Wisconsin accepted animal waste management practices and WPDES requirements. Smaller animal feeding operations, identified under other animal feeding operations in the Wisconsin Administrative Code, are subject to its provisions if the Department of Natural Resources (DNR) determines through an onsite investigation that unacceptable practices of the operation are causing the discharge of a significant amount of pollutants to waters of the State. DNR does not intend to require that all animal feeding operations obtain a permit. Only those animal feeding operations which improperly manage their wastes and as a result cause ground or surface water pollution or those subject to the requirements for large animal feeding operations will be regulated.

Complaint Triggers the Process

Once a complaint has been received by DNR, the department works cooperatively with the State Department of Agriculture and County land conservation departments in making investigations, identifying solutions with the owner, and following through on issuance of permits and enforcement if necessary. If necessary the provisions for enforcement are carried out by the State Department of Justice.

Upon a determination that the discharge of significant amounts of pollutants to waters of the State is occurring or has occurred, DNR provides the owner or operator with a notice of discharge (NOD). The NOD contains a description of the discharge, suggestive corrective measures, and time period for implementing necessary corrective measures. Failure to implement the necessary corrective measures within the time period provided in the NOD will result in DNR notifying the owner or operator of the need to apply for a WPDES permit. The WPDES permit issued may contain a schedule of compliance designed to implement accepted animal waste management practices necessary to control the discharge. Operators subject to these provisions shall design and install permanent runoff control structures, according to the maximum amount of rainfall generated by a 10-year, 24-hour rainfall event for the location of the point source. WDNR actively attempts to locate and correct animal waste management problems from existing operations.

The Soil Conservation Service (SCS) standards and specifications are generally used in the design of waste controls for confinement operations. Alternative designs may be approved if they provide equivalent levels of waste control.

The types of unacceptable practices which may result in an NOD, according to WDNR, are as follows:

- overflow from an animal waste storage facility;
- over application of animal wastes;
- direct runoff of animal waste from the operation;
- discharge of leachate from a manure stack;
- seepage from an animal waste storage facility; or
- construction of an animal waste storage facility in permeable soils or over fractured bedrock without a liner of adequate design.

WDNR regulates confined animal operations, as well as animal feedlots. Many Wisconsin farms have dairy cows as a major enterprise.

Concentrated Animal Feeding Operations in Wisconsin (continued)

WDNR reports it has inspected more than 1,000 operations since 1984. Some 300 have received an NOD. According to WDNR 50 large operations, meeting U.S. EPA rules (over 1000 AU feedlots) are under the permit system.

Several programs are available to assist animal producers to comply with waste control requirements, including:

- technical assistance — SCS and county land conservation departments;
- State cost-share funds for storage capacity structures and feedlot facilities, administered by the State Department of Agriculture Trade and Consumer Protection; and
- information and education on facility operation by the Extension Service.

[For further information contact: Gordon Stevenson, Agricultural Engineer, Department of Natural Resources, 101 South Webster Street, Madison, WI 53707. Phone: (608)267-9306. FAX(608)267-7664.]

Notes on NPS Technology

Idaho Publishes Literature Search on Aquatic Macroinvertebrates of the Western U.S.

William H. Clark, of Idaho's Water Quality Bureau, Idaho Department of Health and Welfare has compiled a very useful listing of *Literature Pertaining to the Identification and Distribution of Aquatic Macroinvertebrates of the Western U.S. with Emphasis on Idaho.*

Listed publications are ordered by 17 major taxonomic groups. Additionally, the *General References* section includes listings of publications on *Taxonomy and Distribution and Macroinvertebrate Sampling Methods*, urging readers to check out these references "to obtain the best use of this publication . . ." We couldn't agree more. These general references are indeed a valuable contribution.

The author's *Introduction* states: "The purpose of this compilation is to give the reader references useful for the identification of macroinvertebrates" . . . rather than to serve as a detailed listing of sampling methods.

Copies are available. Write to:

> William H. Clark, Idaho Department of Health and Welfare, Division of Environmental Quality, Water Quality Bureau, 1410 N. Hilton Street, Boise ID 83720. Phone: (208) 334-5860. He will also answer inquiries.

State Nonpoint Source Program Managers will also be interested in a companion publication. Ask for this one to be sent also: *Coordinated Nonpoint Source Water Quality Monitoring Program* for Idaho.

Incidentally, we have arranged for this macroinvertebrate publication, with all of its references, to be placed on the Nonpoint Source Electronic Bulletin Board (*NPS/BBS*). Crank up your computer and its modem and call (301) 589-0205. You can then read the publication and/or download it to your computer for reproduction at your convenience.

Workshop Sets Priorities for Great Lakes Wetlands Research

A two-day workshop on *Great Lakes Coastal Wetlands Research* was conducted at Old Woman Creek National Estuarine Research Reserve (OWC/NERR) near Huron, Ohio, on the southern shore of Lake Erie, October 20 and 21, 1989. The event was sponsored by the Sanctuaries and Reserves Division (formerly the Marine and Estuarine Management Division) of NOAA, the Ohio Department of Natural Resources, and the Ohio Sea Grant College Program. Sixty invited wetland scientists, managers, and State and Federal regulatory personnel, from the United States and Canada, were in attendance. A report on the workshop conclusions and recommendations has recently been published.

Workshop Sets Priorities for Great Lakes Wetlands Research (continued)

The goals of the workshop were, first, to review the information base on all aspects of the ecology of the OWC wetland and other Great Lakes coastal wetlands; and, second, to construct a set of priorities for coordinated research aimed at filling gaps in the fundamental knowledge of the ecology of Great Lakes coastal wetlands. Coastal wetlands were defined as those wetlands which are influenced by Great Lakes water levels.

The need for such a conference had become apparent to the science committee of the OWC Advisory Council in that, while an unusual number of research studies had been performed in the OWC wetland by hydrologists, geologists, physiological and community ecologists, toxicologists, zoologists, botanists, and microbiologists, the results of most projects were independent and only indirectly interrelated, yielding a disjunct database and no comprehensive understanding of the structure and function of coastal wetland ecosystems. The committee envisioned that a list of priority research needs, established by a consensus of Great Lakes wetland researchers, managers and regulators, would identify important gaps in the knowledge of coastal wetland functions and their values, and thereby facilitate the management of the overall Great Lakes ecosystem.

The first day of the workshop consisted of presentations on the existing database and the conceptual understanding of the biotic and abiotic components of the OWC wetland, comparing it with other Great Lakes coastal wetlands. In addition, keynote addresses described wetlands as "metabolic gates" in aquatic ecosystems, compared Great Lakes coastal wetlands and freshwater tidal wetlands, and presented current views on marine estuary structure and function.

The second day of the workshop was devoted primarily to work group discussions of research needs from a functional perspective. Separate groups discussed energy flow, physical processes, biogeochemical cycles, or applied problems. A fifth group discussed means of strengthening the link between research, management and education. The findings of each group were presented to all the participants at an interim session for feedback from the other groups and again, in revised form, in a final session.

The research needs listed by each work group are set forth in a report. Where stated by the groups, the relative importance of specific activities is noted. Several recommendations regarding methodology and infrastructure are summarized separately, as are the findings of the research management and education work group. An executive summary is followed by the expanded recommendations of each of the work groups.

[The workshop report is now available as OWC Technical Report No. 6, Priorities for Great Lakes Coastal Wetlands Research. For more information and to obtain copies, write to: Dr. David M. Klarer, Old Woman Creek Preserve, 2514 Cleveland Road E., Huron, OH 44839. Phone: (419) 433-4601.]

What's New on The Nonpoint Source Electronic Bulletin Board (BBS)

How to Access the NPS Computer Bulletin Board System (BBS)

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 that will handle modem communications.

The NPS BBS phone number is: 301/589-0205.

The telecommunication parameters are: no parity, 8 bits, and 1 stop-bit (N-8-1).

When you first access the BBS, you will be asked to register and create a password. Write this password down as you will need to use it every time you access the BBS.

For further assistance in accessing the *NPS/BBS* refer to your computer and modem user's manuals, and/or write to *NPS NEWS-NOTES* and ask for a copy of the *NPS/BBS* Users' Manual. (Use the COUPON on page 27.)

Status Report

We are happy to report that the first two months of official operations of the NPS Computer Bulletin Board System (*NPS/BBS*) have been a resounding success.

The number of new users increased by 144 percent between March, when 43 new users registered, and April, when 105 new users registered. The total number of registered users at the end of April was 168, and by May 20th (when this article was written), the number of registered users was up to 238.

What this means is that a viable community of NPS professionals is building on the *NPS/BBS*—a community that will continue to grow and thrive as *News-Notes* readers and others access the system, use the materials available, discuss NPS issues online with other *BBS* users, and send in (upload) their valuable materials to the *NPS/BBS*.

To give you a sample of the materials available online on the *NPS/BBS*, the 10 most frequently read bulletins and the 10 most frequently downloaded files from the month of April are listed below:

BULLETINS

- Packed (.ZIP) files and how to unpack them
- List of EPA Libraries
- Ten most endangered rivers list
- Job announcement—senior scientist for Wetlands Team
- Software info: Daily Manure Production
- Software info: Agricultural NPS Pollution
- Water Quality regulations update
- Balancing Long-term Sustainability of Natural Resource Development with Cumulative Environmental Change
- Software info: Traverse Computation & Map Generation
- Discussion of Federal-State cooperation in water quality

FILES

- List of environmentally-related BBSs
- 3/10/90 update of PKZIP. Faster
- Software available at EPA's Center for Exposure Assessment Modeling
- Wildland hydrology/watershed management technote
- Software info: Agricultural NPS Pollution
- Chesapeake Bay Program—Report and Recommendations of the Evaluation Panel-12/90
- GAO environmental publications
- List of NPS-related events. Updated 3/91
- GIS databases available
- Keyword index to NPS NewsNotes—Issues 1-11

Announcing the Agriculture SIG

As of June 3, 1991, a Special Interest Group area (SIG) will be opened on the *NPS/BBS* to address agricultural NPS issues. The technical monitor will be Daniel Bard of the Maryland Department of Agriculture.

The Agriculture SIG on the *NPS/BBS* will be open to all *BBS* users and will act as a mini-*BBS*—with all the features of the Main Board, including bulletins and files on agricultural topics, messages between SIG users, and online help for all functions. Check the menu on the Main Board for the proper command to access the Agriculture SIG from the Main Board.

Networking — It works!

NPS/BBS users have been posting public messages requesting information from their fellow NPS professionals. The following are examples of such public messages:

> Date: 02-13-91 (17:14) To: ALL
>
> From: ANDREA KIESERMAN Subj: ACID MINE DRAINAGE
>
> Please send any information on acid mine drainage BMPs to Andrea Kieserman, EPA Region 3.

What's New on The BBS (continued)

Date: 03-30-91 (15:13) To: ALL

From: STEVE GETLEIN Subj: STORMWATER AND WETLANDS

I'm looking for information on the effects of stormwater, and the effects of stormwater management, on non-tidal wetlands. I'm especially interested in the following effects: thermal, nutrient, toxic, volume and velocity. I'm interested in both the effects of the above on wetlands and on what wetlands do to the above. I've already got a lot of material and would be delighted to share information with like-minded researchers. Call me at 703-780-2881 or write to Steve Getlein, 4424 Scarborough Square, Alexandria, VA 22309.

Other *BBS* users can respond to these requests with other public messages, thereby assisting not only the requestors but everyone else on the *BBS* with similar interests.

If you can provide information regarding these two requests or want to make your own requests for information from the NPS community, the public message area of the *NPS/BBS* is the place to do it!

A Footnote . . .

The Distribution of NPS NEWS-NOTES

We thought folks would be interested in a breakout that will tell who you, our readers, are. This issue, #13, June 1991, of *NPS NEWS-NOTES*, an occasional bulletin devoted to the management of nonpoint sources of water pollution, will go to some 5,700 persons throughout the country, and a few abroad. Here is a tally of where our readership comes from:

Government, Non-Federal	2,380		42%
State Agencies	1,790	32%	
Water Quality/Environmental	512	9	
Other State Agencies	784	14	
Universities/Schools	478	8	
State Legislators	16	*	
Other Public, Non-State	590	10	
Local & Areawide Governments	548	10	
Indian Tribes	*	*	
Interstate Agencies	*	*	
International	*	*	
Federal Agencies (Other than EPA)	978		17%
Agriculture	622	11%	
Interior	203	4	
Transportation	20	*	
Commerce	16	*	
Defense	58	1	
Other Federal Agencies	29	*	
Environmental Protection Agency	1,071		19%
Headquarters & ORD Labs	383	7%	
Regional Offices	688	12	
All Other	1,210		21%
Environmental Organizations	210	4	
Public Interest Groups	491	9	
Industry/Trade Associations	63	1	
The Media	22	*	
Private Sector	417	7	
Congress	7	*	
Total	5,690		100%

* Less than 1%

Datebook

This DATEBOOK has been assembled with the cooperation of our readers and *Conservation Impact*, newsletter of the Conservation Technology Information Center (1220 Potter Drive, Room 170, West Lafayette, IN 47906-1334). 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.

1991 Meetings and Events

June

18-19 Seminar on *Remedial Approaches for Sites with Contaminated Sediments.* Hyatt Regency, Peachtree Center, Atlanta, GA. Phone: (404) 577-1234. Sponsored by EPA's Center for Environmental Research Information. Contact: Barbara Morris, Conference Coordinator, EA Technology Group, PO Box 296, Dept EPA-06, Knoxville, TN 37901. Phone: Voice – (615) 688-0998; FAX – (615) 688-0999. Hotel cut-off date is May 18.

19-22 *History of Agriculture and The Environment, A Symposium.* National Archives Building, Washington, DC. Sponsored by the Agricultural History Society, the American Society for Environmental History, and agencies of the U.S. Department of Agriculture. This interdisciplinary symposium addresses the history of agriculture and the environment. Contact: Douglas Helms, National Historian, Soil Conservation Service, P.O. Box 2890, Washington, DC 20013, (202) 447-3766.

20-21 Seminar on *Remedial Approaches for Sites with Contaminated Sediments.* Wyndham Franklin Plaza, Philadelphia, PA. Phone: (215) 448-2000. Contact: Barbara Morris – see June 18-19 for details. Hotel cut-off date is May 20.

20-22 *Network Globally – Act Locally,* Washington Dulles Ramada Renaissance Hotel, Washington, DC. Sponsored by the Alliance for Environmental Education, the Tennessee Valley Authority, and the U.S. EPA. For corporate leaders, environmentalists, teachers and students, government leaders, and individuals who care about the environment. Contact: Alliance for Environmental Education, 10751 Ambassador Drive, Suite 201, Manassas, VA 22110, (703) 631-1651. FAX (703) 631-1651. Conference registration $150 w/discounts for early registration. Phone Dulles Ramada Renaissance (703) 478-2900, for hotel reservations at special conference rates. Cut-off date June 16. Discount air fares offered by United Air Lines. Call Ambassador Square Travel at 1-800-447-3900 for details. Conference registration is limited to 500 participants.

July

8-12 *Coastal and Ocean Management, The Seventh Symposium,* Hyatt Hotel, Long Beach, CA. Sponsored by The Coastal Zone Foundation, The American Shore and Beach Preservation Association, U.S. NOAA, Port of Long Beach, American Society of Civil Engineers. Themes include Coastal and Marine Policy, Institutional Relations; Global Environment; Public Participation, Information, and Access; Environment and Information; Development and Resource Management; and International Issues. Contact: Coastal Zone 91, Orville Magoon / Gail Oakley, PO Box 279, 21000 Butts Canyon Road, Middletown, CA 95461, (707) 987-0114.

9-10 Seminar on Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells. Atlanta Marriott Marquis, Atlanta, GA. Sponsored by The Center for Environmental Research Information (CERI). State-of-the-art technology and field-oriented practices will be emphasized. Targeted at regional, State and local personnel involved with the design, construction, and installation of groundwater monitoring wells. Contact: Elaine Brenner, Eastern Research Group, Inc., 6 Whitmore St., Arlington, MA 02174, (617) 641-5334/ Denise Gaffey (617) 641-5317.

10-11 Seminar on *Remedial Approaches for Sites with Contaminated Sediments.* The Westin-St. Francis, San Francisco, CA. Phone: (415) 774-0135. Contact: Barbara Morris – see June 18-19 for details. Hotel cut-off date is June 9.

23-24 Seminar on *Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.* Radisson Hotel, Denver, CO. See July 9-10 for details.

25 *Milan No-Till Crop Production Field Day and Planting Equipment Demonstration,* Milan, TN. Contact: John F. Bradley, Superintendent, Milan Experiment Station. 205 Ellington Drive, Milan, TN 38358. Phone: (901) 686-7362.

July

29-31 — *National Livestock, Poultry, and Aquaculture Waste Management Workshop.* Westin Crown Center Hotel, Kansas City, MO. Agenda includes: Impacts on Water Quality, Case Study: Chesapeake Bay Program. Contact: Richard Reynnells NPL-Poultry Science; USDA/ES, Room 3334 South Building, Washington, DC 20250-0900. Phone: (202) 447-4087.

30-31 — Seminar on *Remedial Approaches for Sites with Contaminated Sediments.* The Palmer House, Chicago, IL. Phone: (312) 726-7777. Contact: Barbara Morris – see June 18-19 for details. Hotel cut-off is June 29.

August

1-2 — Seminar on *Remedial Approaches for Sites with Contaminated Sediments.* Allis Plaza, Kansas, MO. Phone: (816) 421-6800. Contact: Barbara Morris – see June 18-19 for details. Hotel cut-off is July 9.

6-7 — Seminar on *Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.* The Palmer House, Chicago, IL. See July 9-10 for details.

18-22 — Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) will hold its annual conference at the Eugene T. Mahoney State Park, Ashland, Nebraska. Agenda focuses on Clean Water Act reauthorization as well as watershed management, point and nonpoint sources, wetlands and funding. Contact ASIWPCA at (202) 624-7782 for room reservation and meeting registration information.

21-22 — Seminar on *Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.* Worcester Marriott, Worcestor, MA. See July 9-10 for details.

September

4-6 — *The Natural Constructed Wetlands Treatment Systems Workshop.* Hyatt Regency–Denver. Sponsored by the U.S. EPA, Region VIII, and the Colorado Department of Health. Purpose is to provide information about the wastewater treatment and wetlands programs. The second day of this seminar will be of special interest to nonpoint source staff since constructed wetlands are a BMP that can be used from sources such as urban runoff or wetlands mitigation. Hotel reservations can be made at special rates by calling 1-800-233-1234 until July 15. Registration fee for the seminar is $125.00. For more information contact: Mohammad Razzian, P.O. Box 371, Denver, CO 80201. Phone: (303) 294-1166. Checks and registration can be mailed to the same address.

5-6 — *Eighth Annual Fall Field Days.* Demonstrations on rotational grazing, walk-through fly trap, raising your own cover crop, seven-year cash-grain rotation, farrow-to-finish hogs without antibiotics. The Thompson Farm, Boone, Iowa. Contact: Thompson Field Days, C/O Skip Kauffman, Rodale Institute, 222 Main St., Emmaus, PA 18098. Phone: (215) 683-6383. Or contact the Thompson Farm, Rt. 2, Box 132, Boone, IA 50036. Phone (515) 432-1560.

11-12 — *The Sixth Annual Ground Water Protection Seminar,* San Antonio Convention Center, TX. Sponsored by the Texas Water Commission. Will educate and inform attendees about protecting groundwater supplies from contaminants that may adversely affect public health. Topics include wellhead protection, NPS contamination, local emergency spill response, and groundwater protection strategy. Contact: Texas Water Commission, Ground Water Section, PO Box 13087, Austin, Texas 78711, (512) 371-6319.

11-13 — *Water Systems Modernization Symposium for STORET, BIOS, ODES.* Sheraton Park Central, Dallas, TX. Sponsored by EPA, Office of Information Resources Management. Contact: Irv Weiss, U.S. EPA, ORIM PM-218B, 401 M St., SW, Washington, DC, 20460. Phone: (202) 382-2324. E-mail EPA 3754. OR Sandy Gehring/Ken Green, ViGYAN, Inc., 5203 Leesburg Pike, Suite 900, Falls Church, VA 22041. Phone: (703) 931-1100. FAX (703) 820-4332.

12-13 — Seminar on *Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells.* Meany Tower Hotel, Seattle, WA. See July 9-10 for details.

17-19 — *Ohio State Farm Science Review,* London, OH. Contact: R. Craig Fendrick, 232 Agricultural Engineering Building. 590 Woody Hayes Dr., Columbus, OH 43210-6131. Phone (614) 489-4278.

17-19 — *3rd Annual EPA Tri-Regional NPS Conference.* Sponsored by the NPS Coordinators, EPA Regions III, IV & VI for the States in those regions. Host: Region III. As arrangements are firmed up DATEBOOK will report.

The Coupon

Nonpoint Source Information Exchange Coupon #13

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Nonpoint Source NEWS-NOTES *is an occasional bulletin dealing with the management of nonpoint sources of water pollution. NPS pollution comes from many diffuse 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 and manmade pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters. NPS pollution is normally associated with agricultural, silvicultural, mining and urban runoff. NPS NEWS-NOTES, Hal Wise, Editor, 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. Produced and distributed by The Terrene Institute under EPA grant # X-817133.*

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Assessment and Watershed Protection Division
Office of Wetlands, Oceans and Watersheds
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401 M Street, S.W.
Washington, D.C. 20460

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