

EPA News-Notes

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

A Commentary . . .

Designation of Sockeye Salmon as an Endangered Species Gives Sharper Focus For Local Watershed Clean Water Actions

Decades of tinkering on a grand scale with the flow of the Snake and Columbia rivers for power generation and irrigation water have sadly but inevitably led to the National Marine Fisheries Service's formal designation of the Snake River sockeye salmon as an endangered species.

It seems to us that this federal action must now provide a sharper focus for many of the CWA watershed activities in the states and localities throughout the country, under the umbrella of a lot of law and policy that is already in place. Consider:

- 1) One of the primary goals of the 1972-enacted Clean Water Act, succinctly detailed in its opening section 101(a), is "to restore and maintain the . . . biological integrity of the Nation's waters."
- 2) The 1987 amendments to the CWA expanded 101(a) to make the role of nonpoint source controls absolutely clear:

It is the national policy that programs for the control of nonpoint sources 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.

- 3) In its Nonpoint Source Guidance issued to implement the new nonpoint control section 319 (December 1987), EPA lists

Hydrologic/Habitat Modification: Channelization, Dredging, Dam Construction, Flow regulation-modification, Bridge construction, Removal of riparian vegetation, and Streambank modification-destabilization as major categories and subcategories of nonpoint source pollution to be dealt with under the provisions of the Act.

The mission of state and local water quality managers has been clearly enunciated.

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The *Washington Post*, in a front page story reporting the Marine Fisheries' designation action on November 15, 1991, had this to say:

The designation, which automatically triggers a federal campaign to restore the Snake River sockeye, probably comes too late to save the fish as a truly wild species. Only four of the fish this year completed the epic 900-mile journey from the Pacific to spawn in an alpine lake in Idaho's Sawtooth Mountains. The lone female in that group was taken for artificial spawning in a desperate attempt to produce hatchery-raised fish with the genetic traits of the wild species.

Although it may be too late for the Snake River species, the decision is expected to lend a new urgency to longstanding efforts to restore threatened runs of other salmon species on the Columbia and its tributaries — magnificent, storied migrations that have symbolized the Pacific Northwest since aboriginal times.

Obviously the *biological integrity* of the entire Columbia/Snake migratory system has been seriously violated. The key here is that clean water, as defined in the processes of the CWA, and fishery restoration go hand in hand. In March 1991, we reported on the Klamath River restoration efforts (*News-Notes #11*):

This . . . report is concerned with how a major fisheries restoration mission of the U.S. Fish and Wildlife Service . . . and the clean water mission of the California State Water Resources Control Board, operating, in part, with federal funds provided through the Clean Water Act's nonpoint source control program, have found common cause and mutual support in carrying out their respective missions.

In Issue #15, September 1991, we reported that failure to implement streambank protection BMPs as part of a ten-year Rural Clean Water Project meant that the fish-spawning beneficial use of the lower reaches of Rock Creek, Idaho (a tributary of the Snake River) remained impaired. The creek had lost its biological integrity and could not support its use as a cold-water fishery.

It seems to us that the clean water community needs to assume a well-recognized, clearly acknowledged, out-in-front leadership position in habitat preservation and watershed protection and restoration . . . and do it now. We cannot afford to wait until there are only four remaining fish of any other species coming home to spawn.

We have the tools and the mandates. But our management and restoration tools need sharpening. The challenge is obvious. The many federal, state, local, private, public actors and participants in the enormous watershed restoration job that lies ahead have to sort out their roles and develop a mutually understood common cause. Because many of the critical decisions will be local decisions, the need for this kind of comprehensive environmental collaboration is best seen at the state and local grassroots level, and that's where the leadership is going to have to come from to get this big job underway.

That's how we see it.

National Notes of Interest

Congress Appropriates \$52.5 Million For Nonpoint Source Control in FY 92

This year, the congressional appropriation process, with the President's signature on the appropriations bill, resulted in \$52.5 million for implementation of the nonpoint source control program for FY 92, which began October 1, 1991. The program is contained in section 319 of the Clean Water Act.

The submitted budget request provided for \$25 million. Congress added \$27.5 million to bring the appropriation to \$52.5 million. Last fiscal year the appropriation was \$51 million with \$3 million earmarked for specific projects. Therefore, this year's appropriation process increases funds generally available for 319 implementation by \$4.5 million.

Additional appropriations were \$1,450,000 for a nonpoint source pollution project at the University of Kansas, Iowa State University, and University of Nebraska (all in EPA Region VII)¹ and \$500,000 for the Illinois River basin nonpoint source pollution program. (The Illinois

¹ This Nonpoint Source Assessment project continues from last year. It is looking at nonpoint source effects in agricultural watersheds using a Geographic Information System based on remote sensing data. Each university has a specific role in the project.

River drains from Arkansas into Oklahoma. The basin NPS control program is being administered through EPA Region VI.)

The House-Senate Conference Report which Congress adopted as EPA's appropriations bill, directed EPA to reprogram its manpower to provide ten new federal positions for the implementation of the section 319 program.

Finally, the appropriations measure contains this admonition:

The Committee of Conference believes that, in order to encourage highly effective and innovative state nonpoint source control and water quality programs, section 319 and section 106 grants should be awarded to states with effective programs in an expeditious manner.

Section 106 of the CWA supports a wide range of continuing state water quality management activities, including NPDES permit issuance, enforcement, water quality standards development, water quality assessment and planning, and groundwater protection.

Venerable WPCF Changes Its Name To Water Environment Federation

After 64 years, the Board of Control of the Water Pollution Control Federation voted by overwhelming majority to change the name of the organization to the Water Environment Federation. The change was approved October 6, 1991, in Toronto, Canada during the organization's 64th annual conference and exposition.

"The purpose of the name change is to solve the problem that our previous name had," said Roger Dolan, WPCF president. "To the outside world, our people came to be seen as 'pollution people.' It was an image issue. Also, in today's world — even if you accurately interpret the old name — the word 'control' just isn't good enough. We don't control pollution anymore, we eliminate it. That's why we changed."

The Water Environment Federation is a not-for-profit technical and educational organization founded in 1928. Its mission is to preserve and enhance water quality worldwide. Federation members are 38,000 water quality specialists from around the world, including engineers, biologists, governmental officials, treatment plant managers and operators, laboratory technicians, college professors, students, and equipment manufacturers and distributors.

[For more information, contact our liaison to the Water Environment Federation, Harvey Olem, The Terrene Institute, 1000 Connecticut Ave., NW, Suite 802, Washington DC 20036. Phone: (202) 833-8317. Or contact Nancy Blatt, Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314. Phone: (703) 684-2400.]

National Newsletter Addresses Volunteer Water Quality Monitors

"The *Volunteer Monitor* gives monitoring groups a place to express their ideas and exchange practical information," says Eleanor Ely, editor of the national newsletter of volunteer water quality monitoring. Although the publication has been in existence for two years, recent changes have ensured that this important periodical will more effectively link citizen monitors throughout the country.

The *Monitor* was first published in 1989 through a one-time EPA grant to the Alliance for the Chesapeake Bay. The second issue came out in 1990 through an EPA grant to Seattle's Adopt a Beach program. Starting with the third issue, Fall 1991, the newsletter has operated with ongoing EPA (Office of Wetlands, Oceans and Watersheds) funding and will be published twice a year.

Other changes have taken place since the first issue. For each issue, a different monitoring group is asked to provide associate editors and its own perspective. The unique "rotating staff" arrangement creates an ideal mechanism for the newsletter's national focus, while Ely's presence as permanent editor provides continuity. The Fall 1991 issue was co-edited by two groups in Rhode Island, and an upcoming issue will be co-edited by members of Adopt-A-Stream in Washington State.

The *Monitor's* format, too, has evolved from the early days. Each issue now features a special topic. The Fall '91 issue revolves around biological monitoring and contains articles on indicator organisms, monitoring of aquatic plants and coliform testing. Ely, currently hard at work on Spring 1992's "Monitoring for Advocacy" issue, notes that the combined changes will

ensure stability and continuity while at the same time providing diversity in point of view, expertise, and geographic region.

A very useful feature incorporated into the new format is the practice of including contacts for each story. "I want to get people all over the country talking to each other," says Ely. "I think it's really working; the authors of articles tell me they are getting phone calls from readers."

Although readers include interested local, state and federal agency staffs, the publication targets the volunteer groups and individuals that are out in the field getting their hands wet. One group coordinator told Ely that her members value the *Monitor* because it makes them feel that their work is an important part of a larger, nationwide effort.

Ely emphasizes that the newsletter's function is to serve as a communications link: "It's a way for someone in Florida to check out what someone in Oregon is doing."

On a practical level, the *Volunteer Monitor* offers technical tips and resource reviews. The biological monitoring issue, for example, includes a feature article entitled "Canaries of the Stream," which explores the ins and outs of macroinvertebrate monitoring. The story is accompanied by lists of equipment suppliers and reviews of identification aids as well as a listing of volunteer "bug"-monitoring groups.

Elizabeth Jester, Chief of the Monitoring Branch of EPA's Office of Water's Assessment and Watershed Protection Division, says she is pleased to see the publication taking this focused, in-the-field approach. "Working with volunteer monitoring groups is a priority for the Monitoring Branch," she said. "There is an enormous amount of expertise, enthusiasm, and energy in the thousands of volunteer groups across the country, and it is important for us to work with volunteers to strengthen monitoring and use the data nationwide as well as within individual states. This publication will be both an inspiration and an information exchange."

Jester also noted that the Monitoring Branch has a volunteer monitoring coordinator, Alice Mayio, who is currently concentrating on the Third National Volunteer Monitoring Conference to be held in the spring. (See *News-Notes'* DATEBOOK for details.)

Newsletter editor Ely is not associated with any monitoring group. In this way, the *Monitor* avoids pushing any one agenda. Instead, she says, "The newsletter serves as a forum for many views." Ely's involvement with volunteer monitoring dates to 1988, when she edited a national directory of volunteer monitoring groups. She also served as editor of the proceedings of the Second National Volunteer Monitoring Conference in New Orleans.

Both professionals and volunteers contribute generously to the *Monitor's* content. Because each issue has a theme, Ely and her co-editors identify people who are knowledgeable about a particular topic and ask them to send in material. Ely says she doesn't worry about the initial quality of the writing—she works with her authors to produce articles that are both accurate and well-written. Her recipe works: the *Monitor* is packed with useful information presented in a pleasing manner. We wish her luck in her ambitious undertaking.

To obtain a copy of the Fall 1991 issue of the *Volunteer Monitor*, please send a SASE with 52 cents postage to Eleanor Ely (address below). For Fall 1991 plus Fall 1990, send a 9" x 12" envelope with 75 cents postage.

[For more information on the *Monitor*, contact: Eleanor Ely, Editor, *The Volunteer Monitor*, 1318 Masonic Ave., San Francisco, CA 94117. Phone:(415) 255-8049. For more information on the EPA Monitoring Branch volunteer activities, contact Alice Mayio, AWPDP, U.S. EPA, 401 M St. SW, Washington, DC 20460.]

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

Eight Local Government Nonpoint Source Projects Financed by Washington State Revolving Loan Fund

After receiving 23 applications for State Revolving Loan (SRF) financing, Washington's Department of Ecology has approved 15 projects with loans totaling \$43.8 million for fiscal year 1992 funding. Eight of the approved projects are to control nonpoint sources of water pollution, while seven are for sewage treatment (point source) facilities.

The nonpoint projects cover four types of projects:

Failing Septic Tank Repair

- **Project Description:** To establish local loan funds that assist property owners by providing low-interest loans to repair failing septic tank systems. Recipients guarantee the SRF loan with a general fund pledge. Most recipients place a lien on the property to guarantee the loan. If each applicant signs the loan agreement, it will bring to eight the number of counties in Washington with this type of program.
- **Local Governments:** Pacific County, \$175,000; Thurston County Public Health, \$200,000; Clallam County Department of Community Development, \$300,000; Mason County, \$300,000; Snohomish Health District, \$500,000.

Implementation of Agricultural BMPs

- **Project Description:** To establish a local loan fund that assists farmers by providing low-interest loans to implement agricultural best management practices. Whitcom County will provide the dedicated source of revenue for the local conservation district.
- **Local Government:** Whitcom County Conservation District, \$200,000.

Stormwater Management

- **Project Description:** To conduct stormwater monitoring of both low-flow and storm-event discharges. To map and take inventory of the existing drainage system facilities. To implement stormwater best management practices and a public education program. General funds will provide the dedicated source of repayment.
- **Local Government:** Snohomish County Public Works, \$400,000.

Lake Management

- **Project Description:** To control phosphorus loading in Pattison and Long lakes through in-stream alum treatments, stormwater and septic system programs. To eradicate Eurasian milfoil by harvesting and implementing other methods. To continue regular lake monitoring, surveys and public involvement. Property owners around the lake have created a lake management district to repay the loan. Assessments will be collected with property taxes.
- **Local Government:** Thurston County Public Works, \$250,000.

There is no doubt that Washington State is a leader in the innovative financing of nonpoint source control measures through the use of the State's Revolving Loan Fund.

[For more information, contact: Dan Filip, Water Quality Financial Assistance, Washington Department of Ecology, Mail Stop PV-11, Olympia, WA 98504-8711. Phone: (206) 459-6061. FAX: (206) 438-7750.]

In Colorado, St. Elmo Abandoned Mine Wastes Cleaned Up

Two miles upstream of the old mining town of St. Elmo, in a glaciated valley of the Sawatch Range east of the Continental Divide, the St. Elmo Nonpoint Source Project Team has completed construction that consolidates and stabilizes 13 acres of mine tailings waste. The project also treats a mine draining tunnel left over from Colorado's gold boom days. The 100-year-old sand, silt and clay mill tailings (crushed ore remaining after mineral extraction) and the draining Golf Tunnel were contributing heavy metals, particularly zinc and cadmium, to Chalk Creek, thus adversely impacting the water quality and fish habitat of the creek.

Under the direction of the Colorado Mined Land Reclamation Division, contractors removed approximately 60,000 cubic yards of mill tailings from four locations, consolidating them with the existing Mary Murphy Mill tailings pile. The consolidated pile, graded to slopes no greater than 3:1, was covered with two feet of rock to protect the highly erosive tailings from the penetrating forces of wind and water. To enhance surface stabilization of the consolidated tailings pile, four tons per acre of manure and seven tons per acre of native hay mulch were included in the revegetation efforts. Homestake Mining Company contributed material, equipment and manpower to fertilize, hydromulch, and seed the entire 13 acres of affected land with a mixture of sub-alpine grasses, wildflowers and shrubs.

Following earth-moving operations, another contractor prepared the site below the Mary Murphy tailings pile for the creation of a constructed wetland to passively treat the draining Golf Tunnel. Locations from which tailings were removed were also prepared for wetland restoration, thus returning the impacted areas to natural conditions. The "Volunteers for Outdoor Colorado" group organized more than 160 volunteers to transplant native wetland sod plugs and plant 840 Englemann spruce and lodgepole pine saplings in the prepared areas.

The tailings consolidation, stabilization, and mine drainage treatment and the wetland creation/restoration project were completed in less than three months, from July 14 to October 4, 1991.

The Colorado Division of Wildlife will conduct three years of post-reclamation water quality monitoring of Chalk Creek. The Mined Land Reclamation Division will inspect the site for three years to assess and implement maintenance requirements.

Total project costs have come to \$400,000, including post-reclamation water quality monitoring. The Nonpoint Source Program of the Water Quality Control Division, Colorado Department of Health, authorized the project. Nonpoint source control funding was provided under section 201(g)(1)(B) of the Clean Water Act in the amount of \$76,800.

Additional funding and/or "in-kind" contributions to make up the project costs have been provided by Chaffee County; Colorado Division of Wildlife; Colorado Mined Land Reclamation Division; Colorado Soil Conservation Board; Coors Pure Water 2000; Cyprus Minerals Company; Kaess Contracting, Inc.; T.H.E. Consultants; Volunteers for Outdoor Colorado; and the following federal agencies:

- Bureau of Reclamation, Bureau of Mines, Forest Service, Soil Conservation Service, and the U.S. Environmental Protection Agency.

[For further information, contact: Camille Meyer, Colorado Mined Land Reclamation Division, 1313 Sherman Street, Room 215, Denver, CO 80203. Phone: (303) 866-3567. FAX: (303) 832-8106.]

Notes on Management of Coastal Pollution

EPA/NOAA Propose Program Development and Approval Guidelines To Get Coastal Nonpoint Program Under Way

EDITOR'S NOTE: On October 16, 1991, EPA and NOAA jointly issued for review and comment a proposed "program" guidance for state coastal nonpoint pollution control programs. (See *News-Notes*, issue #16. A companion management measures guidance was issued for review in June.) When the final guidance is issued in May 1992, it will assist states in designing programs to combat the serious problems posed by nonpoint source pollution of the nation's coasts. Our counterpart at *Coastlines* newsletter, Paul Shuette, has generously agreed to share his detailed report on this proposed program guidance with *News-Notes* readers. The article below is adapted from his article that appeared in the October/November *Coastlines*. Thanks, Paul!

Federal guidelines proposed in October spell out in explicit terms the requirements states must meet in developing and implementing coastal nonpoint source pollution control programs mandated by Congress a year ago.

The 44-page *Program Development and Approval Guidance* draft was prepared by the National Oceanic and Atmospheric Administration (NOAA) and EPA, which share responsibility for administering the 1990 legislation. (The document is referred to as the *program guidance*.) A summary of the guidance document was published in the *Federal Register* on October 16. Written comments are due by December 16.

The coastal nonpoint program was created by Congress in the course of reauthorizing the Coastal Zone Management Act (CZMA). It will draw upon elements of two major environmental statutes—CZMA and the Clean Water Act—to toss a unique combination punch at coastal nonpoint pollution.

All states currently receive EPA grants under the Clean Water Act to help them implement nonpoint source management programs. Twenty-nine states and territories also have coastal zone management programs funded by grants from NOAA.

Under the new program, states with federally approved CZM programs are obliged to develop acceptable Coastal Nonpoint Pollution Control Programs or face a loss of federal dollars from both EPA and NOAA.

The program guidance, in effect, defines what is "acceptable." The guidance is linked to a proposed manual of nonpoint pollution *management measures* issued by EPA and NOAA in June. (The comment period for the *management measures guidance* issued by EPA and NOAA in June is also December 16.) Both the guidance document and the management measures are to be issued in final form in May 1992. States will then have 30 months to complete and submit their nonpoint control proposals to EPA and NOAA.

The new program should aid the 17 National Estuary Programs (NEP) in coping with nonpoint pollution problems that beset virtually all coastal watersheds. The 1990 legislation requires coordination of the coastal nonpoint control plans with other activities under the Clean Water Act, including the NEP. (NEP is administered by OWOW's Oceans and Coastal Protection Division.)

The proposed guidance describes in some detail what states must do to comply with statutory requirements in areas such as:

- geographic scope of control programs
- pollutant sources to be controlled
- management measures to be implemented
- designation of critical areas
- technical assistance
- public participation

The proposed guidance also defines criteria EPA and NOAA propose to use in reviewing state submittals.

Putting Together A Nonpoint Plan

The law requires NOAA to review state coastal zone boundaries to determine whether they extend far enough inland to control nonpoint pollution having a significant impact on coastal waters. The proposed guidance states:

Using generally available information, NOAA will evaluate the impact of land use activities throughout coastal watersheds draining into the state's coastal waters. If the existing boundary is found to be inadequate, NOAA will recommend to the state how the inland boundary should be changed to meet the water quality goals of the legislation. The state coastal nonpoint program must then include a proposal to modify the existing boundary to respond to NOAA's recommendation. . .

NOAA will work with EPA in making these analyses, and it will give states a chance to respond to the findings before making final recommendations next May on boundary changes considered necessary.

The law says each coastal nonpoint program must include a proposal to modify coastal zone boundaries as necessary to carry out the NOAA recommendations. That doesn't necessarily mandate a change in CZM boundaries, the proposed guidance explains, but the only acceptable alternative would be for states to demonstrate that enforceable policies and mechanisms are at hand to control nonpoint sources throughout the areas defined by NOAA.

The proposed guidance would also require states to fully document any departures from the management measures. The proposed management measures guidance specifies measures to control nonpoint pollutants from five source categories: agriculture, silviculture, urban runoff (including construction activities), hydromodification, and marinas.

States must provide for implementation of management measures in each of those categories (as well as measures to protect wetlands) unless they can clearly show that one or more categories either is not present or does not contribute significantly to coastal water pollution.

The overriding factor to be considered by states in identifying sources that may be excluded from program implementation is the goal . . . to protect coastal waters from nonpoint source pollution generally . . . States should assure that their programs address all sources that, individually or cumulatively, significantly contribute to adverse effects upon coastal waters.

Selecting Nonpoint Control Measures

States would also have some leeway in choosing the control measures they will implement but, again, they would have to assume the burden of proof if they chose to depart from EPA's guidance.

States must provide specific supporting information on the performance of any alternative management measures in order to justify their selection of those measures . . . States will need to identify the procedures used to evaluate the measure, address specified factors in the technical evaluation process, and provide specific technical documentation of the evaluation as part of their coastal nonpoint program.

State plans are also to include detailed information on how coastal nonpoint programs will be implemented once they are approved by EPA and NOAA.

Each state must designate a lead agency to carry out each category of a plan, demonstrate that adequate funding and staff are available, and provide a step-by-step schedule for achieving full implementation within three years of a plan's approval.

Programs are to identify enforceable policies and mechanisms that will ensure implementation, describe mechanisms to improve coordination among all agencies and officials involved, describe monitoring plans, and outline practices that will ensure proper operation, maintenance and continuing performance of management measures.

States must be prepared to adopt additional management measures at the time programs are approved, if available information indicates that core measures specified by EPA will not adequately protect coastal waters. States also must be able to implement additional measures in designated critical areas adjacent to impaired or threatened waters. Additional measures would be required, too, if core measures implemented under a plan do not achieve water quality standards in a reasonable time.

Both EPA, NOAA Must OK Coastal Nonpoint Source Control Programs

States are to submit their coastal programs to both EPA and NOAA by November 1994, after the plans have undergone public review and comment. The two agencies will have six months to evaluate submittals. Both NOAA and EPA must concur on approval of complete plans. States will not receive partial approval for programs.

No new agencies or programs are to be set up to carry out the coastal nonpoint plans. The law stipulates that implementation is to be achieved through changes in existing coastal zone management programs and state nonpoint source pollution programs established under the Clean Water Act.

Citing the legislative history of the statute, the guidance document says that "coastal nonpoint pollution control programs are not intended to supplant existing coastal zone management programs and nonpoint source management programs. Rather, they are to serve as an update and expansion of existing programs."

All of the nation's coastal states except Texas come within the scope of the new legislation. Texas does not have a federally approved CZM program at this time. Of the states bordering the Great Lakes, Pennsylvania, Wisconsin, Michigan and New York have approved CZM programs, while Indiana, Ohio, Minnesota and Illinois do not. (Several of the eligible states without approved CZM programs are currently preparing programs for approval.)

The law provides that any state that has approved CZM programs but fails to submit approvable coastal nonpoint programs would lose a share of its grants under both the CZM and nonpoint source programs. Penalties will start at 10 percent in fiscal 1996 and increase to 15 percent in 1997, 20 percent in 1998, and 30 percent in 1999 and years thereafter.

Public Participation Required by Law

The 1990 legislation requires states to provide "opportunities for public participation in all aspects of the program, including the use of public notices and opportunities for comments, nomination procedures, public hearings, technical and financial assistance, public education, and other means."

The guidance document suggests that states define at the outset the goals of their public involvement and education programs:

The public involvement and education program should include a schedule for initial public contact and education activities and milestones for further involvement through the development and implementation of the coastal nonpoint program . . . The coastal nonpoint program should also specify how the public involvement and educational programs will be funded for both program development and implementation activities . . .

States also are to describe how they will periodically evaluate the effectiveness of their public participation programs.

The guidance document also suggests that public involvement can include the use of volunteers in the implementation phase. “. . . federal and state funds are often limited for monitoring and enforcement programs, but volunteers can help to fill the gap,” the guidance said. “. . . studies and reports demonstrate that volunteers can effectively provide accurate, useful, long-term water quality monitoring data.”

Comments Due by Dec. 16

Written comments on the proposed state program development and approval guidance will be accepted through December 16. As noted, the comment period for the management measures guidance proposed in June has been extended to December 16.

Comments on the program guidance should be sent to: Marcella Jansen, Office of Ocean and Coastal Resource Management, NOAA, 1825 Connecticut Avenue NW, Washington, DC 20235.

Comments on the management measures guidance should be sent to: Steve Dressing, Assessment and Watershed Protection Division (WH-553), U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460.

Copies of the proposed guidance documents are available from the same individuals.

[For more information, contact: Marcella Jansen, Office of Ocean and Coastal Resource Management, NOAA, 1825 Connecticut Avenue NW, Washington, DC 20235. Phone: (202) 606-4181. Or contact Ann Beier, Assessment and Watershed Protection Division (WH-553), U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460. Phone: (FTS/202) 260-7085.]

Coastal Nonpoint Program Milestones

- May 1992** NOAA makes recommendations for coastal zone boundary changes
Final program development / approval guidance published
Final management measures guidance published
- Nov. 1994** State coastal nonpoint programs due to NOAA and EPA
- April 1995** NOAA and EPA approve / disapprove state programs
- FY 1996** First year a percentage of NOAA and EPA grant funds are withheld
from states failing to submit approvable programs

Notes on Forestry and Water Quality

In Montana, A Broad Coalition Publishes Forestry BMPs Booklet

Bob Logan and Bud Clinch have written a booklet called *Montana Forestry BMPs: Forest Stewardship Guidelines for Water Quality*. Logan is a forestry and natural resources specialist with the Montana State University Extension Service. Clinch is an industry BMP education coordinator employed by the Montana Logging Association, a trade association.

The publication was developed in cooperation with Montana's Department of State Lands, Service Forestry Bureau, Forest Management Bureau and Field Operations Division.

Funding was provided by an amazing coalition of state and federal agencies and seven timber firms and related private associations. The booklet lists the following organizations as providing "cooperative funding":

Private

Brand S Corporation
Champion Timberlands
Stoltze Land & Timber Company
Louisiana Pacific Corporation
Plum Creek Timber
Montana Logging Association
Montana Wood Products Association

State

Montana Water Quality Bureau
Montana Stewardship Program
Montana Tree Farm System
Montana Department of State Lands
Montana State University Extension Service

Federal

U.S. Department of Interior,
Bureau of Land Management
U.S. EPA

This publication is first class and perhaps the most enlightened, readable, attractively designed and illustrated document of its kind that we've come across. And it's all done on 32 colorful pages.

The forestry BMPs are right on target, too.

The clever use of two graphic symbols scattered throughout the book carry special messages to readers that cannot be missed:

1. The "do not" symbol indicates practices to be avoided;
2. The black blocks indicate official BMPs adopted by the state of Montana.

An introductory two-page spread discusses and illustrates a basic message about watersheds. It deals with perennial and intermittent streams, ephemeral areas and wetlands and answers the question, why protect water quality:

Excessive runoff and sedimentation into streams can increase filtering costs for drinking water, interfere with irrigation systems and increase flood potential. Fish eggs laid in stream gravels become buried in sediment and suffocate. Removing shade from streambanks can raise water temperatures which affects fish and other aquatic life. Streamside damage also affects wildlife which rely on these habitats.

Five brief sections deal with the key issues of roads, streamside management, timber harvesting, hazardous substances and stream crossings.

The booklet describes Montana's 1991 Streamside Management Act, which became effective on October 1, 1991. The Act defines Streamside Management Zones (SMZ) as being

... at least 50 feet wide on each side of a stream, lake or other body of water — wider to include wetlands and areas with steep slopes or erosive soils.

Montana State Forester Gary Brown said that when rules implementing the act are promulgated and finalized, those rules will consider steepness of slope and wetlands as well as erosive soils.

The new law prohibits the following activities within SMZs in Montana:

1. Broadcast burning.
2. The operation of wheeled or tracked equipment except on established roads.
3. The forest practice of clear-cutting.
4. The construction of roads, except when necessary to cross a stream or wetland.
5. The handling, storage, application, or disposal of hazardous or toxic materials in a manner that pollutes streams, lakes, or wetlands or that may cause damage or injury to humans, lands, animals, or plants.
6. The side-casting of road material into a stream, wetland or watercourse.
7. The deposit of slash in streams or other water bodies.

The law is administered and enforced by the Montana Department of State Lands. Landowners are responsible for compliance unless such responsibility is specifically transferred in a timber harvest contract. Fines of up to \$1,000 per violation may be imposed.

Sherm Anderson, who is the president of the Montana Logging Association, made this comment about the booklet:

While applying BMPs appears to be just good common sense, making those on the ground isn't quite so simple. This booklet should greatly help loggers and landowners apply BMPs correctly.

Paper for the publication was provided by Champion International Corporation. Fifteen thousand copies of the document were printed with private and public funds. The total cost was \$45 thousand; \$19,450 were from section 319 funds.

The forest industry and the involved public servants of Montana are to be warmly congratulated for a such a cooperative effort well done.

[For more information and to obtain a copy of the publication, contact: Gary Brown, State Forester, 2705 Spurgin Rd., Missoula, MT 59801. Phone: (406) 542-4217. FAX: (406) 542-4217. There is no charge for the booklet.]

Salmonids: Forest and Rangeland Management, A Review

Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. Edited by William R. Meehan 1991. 751p. American Fisheries Society Special Publication 19. American Fisheries Society, 5410 Grosvenor Lane, Suite 110. Bethesda, Maryland 20814.

This book is a timely contribution to the available information on the interrelationships between salmonids, stream ecosystems and the management of forest and rangeland resources. It provides a comprehensive and detailed review of the "state of the art" regarding these widely distributed and highly valued fishes. The book is an excellent reference for natural resource managers in federal and state land management agencies, researchers, environmentalists, and perhaps fishermen with scientific inclinations. The editor has done an admirable job incorporating the work of 35 contributing authors into an accessible and informative presentation of the influences of land management activities on salmonids. The contributors are natural resource managers and researchers from the Forest Service, forest industry, universities, state fish and wildlife departments, the National Marine Fisheries Service, and consulting firms.

The editor has organized this book into 18 chapters. The introduction surveys the current situation for salmonids and their ecosystems, as well as the land use activities and management influences that are discussed in the subsequent chapters. "Stream Ecosystems," "Salmonid Distributions and Life Histories," "Habitat Requirements of Salmonids in Streams," and "Natural Processes" provide biological and ecological descriptions of salmonids and their ecosystems. Key physical and geomorphological processes are also discussed as they relate to these ecosystems.

In the chapter "Timber Harvesting, Silviculture and Watershed Processes," the effects of these management activities, and their influence on fish is described. Also included are sections on cumulative effects and new directions for forest management. Separate chapters focusing on forest chemicals, road construction and maintenance, water transportation, processing mills, and storage of logs round out the forest management-related activities. The forest chemicals chapter is particularly extensive and reviews the behavior and toxicity of some of the more commonly used forest chemicals. The chapter on roads provides useful guidelines to prevent or minimize impacts to stream ecosystems and to allow fish migration.

Grazing and land management activities involving mining and recreation uses are also discussed in Chapters 11-13. These discussions of land management activities are followed by chapters covering various aspects of salmonid habitat management, including stream rehabilitation, economic considerations and planning. The book has an extensive bibliography that should prove useful to individuals interested in further reading on these topics.

Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats should become a standard reference for forest, range, and fisheries managers. One indication of this is that the Forest Service has obtained and distributed half of the first printing of this book. Water quality managers who must deal with watersheds wherein the maintenance of a cold-water salmonid fishery is an important designated beneficial use of the water will find this book of great value.

The book provides a synthesis of knowledge from a number of different scientific and professional disciplines. Resource managers and other interested readers should find this compendium of information useful in understanding the influences of forest and rangeland management on salmonids and avoiding impairment to these fisheries resources and their

habitats. Current concerns related to threatened and endangered species, from the sockeye salmon to the apache trout (and to habitat loss) would seem to require nothing less.

[For information on ordering, contact the American Fisheries Society at the address above or phone them at (301) 530-8506. Cost is \$68.00 per copy. Discounts for bulk purchases.]

Monitoring Guidelines for Evaluating the Effects of Forestry on Pacific Northwest Streams

"Nonpoint sources of pollution more commonly limit the designated uses of water in forested areas than do point sources," observes the new publication, *Monitoring Guidelines to Evaluate Effects of Forestry Activities on Streams in the Pacific Northwest and Alaska*. The guidelines were developed by EPA Region X and the Center for Streamside Studies in Forestry, Fisheries & Wildlife, College of Forest Resources/College of Ocean and Fishery Sciences at the University of Washington in Seattle. Lee H. MacDonald is the principal author with Alan W. Smart and Robert C. Wissmer.

The purpose of the Guidelines is to assist in the development of water quality monitoring plans in forested areas, including the design of monitoring projects and the selection of monitoring parameters.

This publication is important and timely. Both EPA's and the states' water program priorities have focused on the management of end-of-the-pipe point sources in the 20 years since the adoption of the Water Pollution Control Amendments of 1972. This has meant a concentration on the chemical composition of effluents to measure the effectiveness of management measures; e.g., the ability of discharges from sewage treatment plants to meet water quality standards. The newer section 319 nonpoint source control program requires evaluation of nonstructural controls (largely BMPs and related institutional arrangements) to support designated uses of water. In forest areas, this usually means maintaining or restoring fish and wildlife populations and the integrity of the aquatic ecosystem. Hence, the measurement of habitat condition and other physical and biological parameters assumes new importance.

To meet these new needs, these forestry monitoring guidelines evaluate and review 30 monitoring parameters or groups of parameters:

- **Physical and chemical constituents:** temperature, pH, conductivity, dissolved oxygen, nitrogen, phosphorus, herbicides and pesticides
- **Flow characteristics:** size of peak flows, amount of low flow, water yield
- **Sediment:** suspended sediment, turbidity, bedload
- **Channel characteristics:** cross section, width and width-depth ratio, pool parameters, thalweg profile, habitat units, bed material particle size, embeddedness, surface vs. subsurface bed material particle size, large woody debris, bank stability
- **Riparian characteristics:** riparian canopy opening, riparian vegetation
- **Aquatic organisms:** bacteria, algae, macroinvertebrates, fish

The document reviews the legal background for water quality monitoring. Two key roles for water quality monitoring are to determine if the designated uses for a particular waterbody are being impaired and to determine whether water quality standards are being met. As the guidelines state:

Answers to these questions often determine the type and intensity of monitoring activities. Regular feedback of the monitoring results through well-defined feedback loops is an essential component of any monitoring project. The design and execution of monitoring projects must be considered an iterative process, as the process of data collection and analysis inevitably will have implications for frequency, location, and type of measurements.

Seven types of monitoring are discussed — trend, baseline, implementation, effectiveness, project, validation, and compliance monitoring.

Statistical considerations are examined, as are design and sampling procedures. The paper states:

The most important step in developing a monitoring plan is to clearly define the objectives. A clear and detailed set of objectives will help preclude unrealistic expectations and greatly facilitate the design of a monitoring plan. A pilot project can prove extremely useful and cost effective when there is some uncertainty about the type and location of monitoring activities.

Part I of the guidelines develops a monitoring parameter selection procedure — an overall evaluation of the usefulness of each parameter for the ten different management activities considered. Part II is a technical review of each of the parameters evaluated in Part I and serves as a useful reference section. Each parameter is examined under seven headings: 1) definition, 2) relation to designated uses (i.e., how changes in the parameter affect the designated uses of water, 3) effect of management activities on the parameter, 4) measurement concepts, 5) standards, 6) current uses, and 7) assessment.

The parameter selection procedure presented in Part I has been incorporated into a PC-based expert system. The executable version allows users to quickly identify appropriate monitoring parameters through an interactive series of questions and answers. The confidence level assigned to each recommended parameter provides a relative indication of the likely usefulness of that parameter, given a particular set of management activities, designated uses, and monitoring constraints. A "what if" function allows the user to quickly alter his or her response to a particular question and then generate a revised list of recommended monitoring parameters.

These guidelines should prove to be very useful for practioners in the nonpoint management field. It is a 'first of its kind' publication and much needed. The document points out that, "... although the focus is on forest management and streams in the Pacific Northwest and Alaska, a broader perspective is taken, and much of the information is more widely applicable." We agree.

[For further information, contact: Elbert Moore, Chief Nonpoint Source Section, EPA, Region 10, Mail Stop WD-139, Seattle, WA 98101. Phone: (206) 553-4181; FTS 399-4181.]

West Virginia Includes Landowner and Logger Training and Forestry BMPs in its Nonpoint Management Program

West Virginia's 319 management program includes a four-year nonpoint source forest water quality plan. The state's Water Resources Section of the Division of Natural Resources is the overall lead agency for the nonpoint management program. The Forestry Division is the implementing agency for the forestry plan. Through the combined efforts of the two agencies, \$136,000 was made available to implement the Forest Water Quality Plan: \$81,600 in the form of a grant of EPA/CWA 319 dollars from the Water Resources Section and a \$54,400 in-kind match from the Forestry Division.

Lyle B. Bennett, West Virginia's Nonpoint Source Program Leader, explained the background, thinking that underpins the plan:

First and probably foremost was the continuation and expansion of Forestry's education programs. Increased technical BMP application is to be accomplished by expanded formal logger workshops, on-site mini-workshops and individualized technical assistance. Aligned with this first goal was to intensify landowner training workshops to create an understanding of the importance of properly planning harvesting operations and guaranteeing performance through contractual agreements.

These two goals aim directly at an expanded appreciation and awareness of the importance of water quality maintenance.

The Division of Forestry has entered into a formal agreement with the West Virginia Cooperative Extension Service to provide a statewide information-education program. Bennett observed that with the assistance of the Extension Service, forestry workshops, originally scheduled as 20 throughout the state, can now be increased to one for each of the state's 55 counties.

The Division of Forestry and the Water Resources Section have also cooperated in the development of BMPs for sawmill by-products. The Division has sent the BMPs to all primary wood-processing mills in the state. The BMPs cover both small- and large-volume sawmills and set the terms for required leachate discharge permits.

*West Virginia Includes
Landowner and Logger
Training and Forestry
BMPs in its Nonpoint
Management Program
(continued)*

Bennett commented further on the program:

The 319 funds provided the means to purchase video equipment for districts to not only aid in training programs but also to be used in evidence collection if needed. Funds were also directed toward the publishing and distribution of a technical paper on erosion impacts from forest fires in southern West Virginia.

He concluded by observing:

One thing is certain, the Water Resources Section will be assisting the Forestry Division in our continued efforts to minimize sedimentation from forestry activities, including impacts created by forest fires. The processes are in place and with continuing cooperation from the timber industry, forest landowners and the general public, we can protect our clean "Mountain State" streams.

[For further information, contact: Lyle B. Bennett, Nonpoint Source Program Leader, Water Resources Section, WV Division of Natural Resources, 1202 Greenbrier Street, Charleston, WV 25311. Phone: (304) 348-2108. FAX (304) 348-5905.]

Pacific Southwest Region of the Forest Service About to Launch Comprehensive BMP Monitoring and Evaluation Program

EDITOR'S NOTE: This article has been adapted from the Fall 1991 issue of the Watershed Management Council's Newsletter. The BMP Monitoring and Evaluation System has been developed by Ken Roby, USDA Forest Service, Greenville; John Rector, USDA Forest Service, San Francisco, and Mike Furniss, USDA Forest Service, Eureka. Comments would be welcomed. Phone numbers at the end of the article.

Best Management Practices are a process, not a product.¹ Considering the agonies of getting them developed and certified, we might be tempted to suppose that once certified, that's it, they are good forever. Not so. The Clean Water Act and various regulations that flow therefrom require that BMPs be an iterative process. After initial development and implementation, BMPs must be monitored for implementation and effectiveness, then modified to improve their efficacy, then monitored again. It's a loop, and there is no endpoint.

In early 1989, the Watershed Management Staff of the Pacific Southwest Region, U.S. Forest Service (USFS), began developing a system to evaluate the effectiveness of BMPs in protecting the beneficial uses of water. (BMPs are procedural and structural practices approved by the California Water Quality Control Board and certified by EPA to be used by the Forest Service in planning and implementing all management activities.) It is through the implementation of BMPs that the Forest Service is designated as the water quality management agency on forest lands in the Pacific Southwest Region. The BMP evaluation system has taken shape during the last two years and is about to be implemented throughout USFS Region 5. The monitoring system has been dubbed the Region 5 Best Management Practices Evaluation Program (BMPEP). The objectives of the BMPEP are to:

- Assess the degree of implementation of BMPs
- Determine which BMPs are effective
- Determine which BMPs need improvement or development
- Fulfill Forest Land and Resource Management Plan BMP monitoring commitments
- Provide a record of performance for management of nonpoint source pollution on National Forest Service lands in Region 5.

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

¹ It should be noted that there are many kinds of BMPs, some are structural, such as culverts; others involve cultural practices like creating buffer strips, or timing activities. Other BMPs include types of maintenance or technical requirements like those associated with road building specifications. NPS control programs use those BMPs that can be shown to be practical and effective means of controlling polluting runoff, given technical, institutional and economic constraints.—Editor

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

- **Administrative evaluations** are broad-scale subjective assessments of multiple BMPs at the project level. These evaluations are used to assess administrative or process BMPs, such as the closely related timber BMPs. For instance, two BMPs govern water quality protection on timber skid trails; they are assessed in one procedure and on one form.
- **On-Site Evaluations** assess timber harvest, roads, recreation, minerals, fire, range and vegetation management practices. In addition to the criteria that assess on-site effectiveness described above, an assessment of BMP implementation is also conducted. Rating implementation involves a review of project plans, environmental assessments and the actual practices on the ground to measure how well the implemented practice duplicated the planned practice. Evaluations from randomly selected sites will be used to test effectiveness of BMPs. For this analysis, differences in effectiveness ratings between sites where practices were and were not implemented will be compared. Evaluations will also be conducted at additional sites preselected because of their sensitivity, public interest, or management interest.

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

- **In-Channel Evaluations** are measurements of selected parameters to assess the cumulative downstream result of project BMPs in protecting beneficial uses. These evaluations monitor condition or change in parameters indicative of the physical, chemical or biological nature of a stream channel. Parameters selected will be indicators of the beneficial use believed to be most sensitive to change as a result of the project. If drinking water is the use of concern, then turbidity or microbiological sampling might be warranted. If fisheries are the use of concern, parameters selected for measurement might include changes in residual pool volume or substrate composition. Each In-Channel Evaluation will be described in a monitoring plan that will detail the selected parameters and data collection requirements (including timing and frequency), analytical techniques, and the hypothesis to be tested. A process of monitoring plan review by research specialists will be used to ensure the rigor and consistency of monitoring designs. Comparisons will most frequently be between stream reaches above and below the project, though comparisons between watersheds will also be used. Duration of the monitoring will be variable, dependent on the parameters selected and the watershed processes of concern.

Each BMPEP component outlines steps to be taken in the event that poor implementation or effectiveness are observed. Currently, evaluation procedures and user guides are being finalized. Implementation of the process regionwide is targeted for the 1992 field season.

[Comments are invited. You can reach Ken Roby at (916) 284-7126, John Rector at (415) 705-2515 FTS 465-2515, and Mike Furniss at (707) 441-3551, (FTS) 448-3551.]

Notes on Watershed Management

Three Governors, DC Mayor and EPA Administrator Meet As Chesapeake Executive Council To Set Directions For Bay

The Chesapeake Bay Program's top policy body, the Chesapeake Executive Council, met in Harrisburg, PA, on August 6, 1991, for the first time in a year and a half to renew bay program commitments and to reassert program directions. (Last January's meeting was cancelled due to snow.) All members of the Council were in attendance: Pennsylvania Gov. Robert P. Casey; Virginia Gov. L. Douglas Wilder; Maryland Gov. William Donald Schaefer; Washington, D.C. Mayor Sharon Pratt Dixon; Chesapeake Bay Commission Chairman W. Taylor Murphy (representing the state legislatures); and EPA Administrator William K. Reilly.

Reilly, who has served as Council Chairman for the past year and a half, stressed the "obvious expression of unified concern and support for the Bay. We desperately need regional

cooperation to resolve environmental problems of all kinds but particularly those that involve shared resources that matter so much to us like the Chesapeake Bay. The presence of the mayor, the governors, and myself is a very strong indication . . . that we are committed to this effort."

Maryland's Governor Schaefer was elected the next chairman of the Council. Before it was over, Council members placed their signatures on a four-point action plan that provides "strategic directions" to Bay restoration activities. Highlights of the four elements of the action plan are:

Accelerate Nutrient Reduction

- **Background:** The 1987 Bay Agreement committed the signatories to a 40 percent reduction of nitrogen and phosphorus entering the Bay by the year 2000. Such a nutrient reduction, computer models have shown, would improve water quality conditions for aquatic life. But while phosphorus levels have decreased by 20 percent in recent years, nitrogen levels have increased.
- **Goal:** To achieve a greater rate of nutrient reduction in the Chesapeake Bay watershed.
- **Action Highlights:**
 - ✓ Re-evaluate the nutrient reduction strategy.
 - ✓ Expand nonpoint source management programs.
 - ✓ Accelerate point source controls and operational changes.
 - ✓ Ensure point source compliance.
 - ✓ Enhance education efforts.
 - ✓ Control additional nutrient sources.
 - ✓ Expand Research.
 - ✓ Prepare a continuing action agenda.

Adopt Pollution Prevention

- **Background:** Pollution prevention means stopping pollution at its source — before wastes are produced. Phosphate detergent bans, reduced fertilizer use, protecting water quality through land-use management, and changing manufacturing processes to eliminate harmful discharges are all examples of pollution prevention used in the Bay states.
- **Goal:** Adopt pollution prevention as the preferred approach for reducing ecological and human health risks in the Bay region.
- **Action Highlights:**
 - ✓ Growth management and land consumption.
 - ✓ Energy efficiency.
 - ✓ Agriculture and pesticides.
 - ✓ Industrial toxics.
 - ✓ Oil spill prevention.
 - ✓ Transportation.
 - ✓ Education/participation.

Restore and Enhance Living Resources and Their Habitat

- **Background:** The 1987 Bay Agreement stated that "the productivity, diversity and abundance of living resources are the best ultimate measures of the Chesapeake Bay's health." The new agenda sets benchmarks by which future success may be measured. Cooperative management efforts in recent years have helped restore the striped bass population; the amount of submerged aquatic grasses in the Bay has increased in recent years, and 90 miles of new spawning habitat have been opened by removing barriers to fish passage.

- **Goals:** A) To continue to take strong steps to protect and to restore Bay fish, shellfish, and waterfowl; B) To accelerate efforts to provide necessary habitat; C) To set measurable goals or targets for living resources and their habitats to enable us to assess progress.
- **Action Highlights:**
 - ✓ Provide for species restoration and enhancement of fish and shellfish.
 - ✓ Encourage restoration and enhancement of habitat.
 - ✓ Establish measurable living resources and habitat goals.

Broaden Participation in The Bay Program

- **Background:** The 1990 census showed significant increases over the past decade in the numbers of individuals in each ethnic group in each of the Bay states. Many groups in the urban areas of the Bay region, as well as the rural poor, have not been typically represented among the citizen network that has worked on the Bay restoration effort. This initiative seeks to solicit the talents of citizens of African, Hispanic, Asian, and Middle-Eastern descent, among others. It also seeks involvement of the rural poor for whom Bay productivity is of economic importance.
- **Goal:** To foster continued success of the Bay Program by broadening the participation and involvement of groups not previously active on Bay issues.
- **Action Highlights:**
 - ✓ Increase multi-cultural participation in citizen and other groups.
 - ✓ Ensure that public information materials have broad appeal and reflect the goal of cultivating broader participation.
 - ✓ Survey multi-cultural interests to help focus and evaluate.
 - ✓ Expand outreach network to include urban environmental and multi-cultural groups.
 - ✓ Sponsor workshops in inner city or rural areas to increase participation.
 - ✓ Step up environmental education in urban and rural elementary and secondary schools.

Seek the support of multi-cultural institutional such as historically black colleges and universities and other non-governmental organizations for recruitment and educational purposes.

[This article was extracted from articles appearing in the Alliance For The Chesapeake Bay's Bay Journal. For a more complete report on the meeting and to be placed on the mailing list to receive the Bay Journal, write to: Alliance for the Chesapeake Bay, 6600 York Road, Suite 100, Baltimore, MD 21212. Phone: (301) 377-6270.]

The Watershed Management Council —A Lively Organization

EDITOR'S NOTE: The Nonpoint Source Information Exchange has been having some very interesting talks recently with Michael Furniss of the Watershed Management Council, a volunteer, non-profit, predominately West Coast organization whose mailing address is Berkeley, California. Mike wears two or three hats: he is the editor of the Council's lively quarterly newsletter and earns his living as a hydrologist at the Six Rivers National Forest, headquartered in Eureka, CA. Joining us in the discussions was Debra Caldon, formerly the Nonpoint Source Coordinator for EPA's Region IX. The subject matter was the formation of a mini bulletin board to operate out of our main *NPS BBS* electronic bulletin board. The mini would be called the *Watershed Restoration Network* and would be a place where folks with common interests in restoring riparian, fishery and wildlife values to impaired watersheds can gather and exchange information and news. It is our very real sense that this area of concern has a high priority for people from all over the country, from a variety of public agencies, federal and state, as well as from private citizens and environmental, agricultural and outdoor recreation organizations. The *Restoration Network* would be operated by EPA's *Nonpoint Source Information Exchange* in cooperation with the Watershed Management Council. We are very excited about this prospect and will keep our readers informed as things develop. In the meantime, Mike has provided us with the following short article that will help to introduce our readers to the Watershed Management Council.

The Watershed Management Council (WMC) is a non-profit organization dedicated to the advancement of the art and science of watershed management. Founded in 1986 in northern California, the Council now has over 350 members in ten states. Membership includes professionals, teachers, students and individuals with an interest in promoting good watershed management.

The Council achieves its dedication by facilitating communication — communication between disciplines, between managers and researchers, between landowners and regulators, between user groups, between politicians and scientists, between the people who manage America's watersheds.

The Council facilitates communication in a variety of ways:

- Sponsoring biennial conferences on timely watershed management topics, such as fire effects, urban/wildland interface issues, and overcoming obstacles to integrated watershed management.
- Sponsoring field trips to view and discuss timely watershed issues and projects, such as watershed restoration, riparian systems and cumulative effects.
- Identifying and sponsoring needed research.
- Cataloging and disseminating information about watershed demonstration areas.
- Helping members to find and contact each other.
- Publishing a quarterly newsletter that provides information on topics of current interest and gives members a quick way to inform colleagues of important projects and events.
- Discovering and providing new ways to bring people together to discuss and solve watershed management problems.

The WMC has five standing committees:

- **Education and Demonstration Areas:** To foster public awareness of the importance of watershed management at all educational levels. Chair: Andy Leven (415) 705-2875
- **Conference and Field Trip:** To provide forums for stimulating the transfer, interchange and dissemination of information about watershed management, and to provide for discussions of social and economic ramifications of watershed management through biennial conferences and field trips. Chair: Ken Roby (916) 284-7126
- **Newsletter:** To transfer knowledge of watershed topics, including research, communications, policy, technology and regulatory developments and issues to the membership of WMC by publishing a quarterly newsletter. Chair: Mike Furniss (707) 441-3551
- **Research and Information:** To identify needs and priority for research and the implementation of existing knowledge of sound watershed management. Chair: Ken Turner (916) 445-7565
- **Nomination, Awards and Membership:** To nominate candidates for elective office, to promote recruitment and retention of members, and to promote professionalism in management of watershed lands by acknowledging outstanding service in stewardship of watershed resources and by stimulating leadership and personal development in watershed management. Chair: Clay Brandow (916) 445-0354.

Membership in the Council is open to anyone interested. Dues are \$25 for two years. Membership entitles you to newsletters, notification of all WMC events, discounts on fees, and full voting rights. Please join us.

Send your name, address, phone number (optional), occupation, and company affiliation with your dues to: Watershed Management Council, c/o Neil Berg, United States Forest Service, P.O. Box 245, Berkeley, CA 94701. If you would like to be involved in committee work, please call the committee chair listed above.

Water Information Management Conference — Proceedings Available

Proceedings of the National Conference of Integrated Water Information Management, August 1991. 95pp. A meeting sponsored by EPA, Office of Water; USGS, Water Resources Division; and Multi-State Fish and Wildlife Information Systems Project, Virginia Tech. Price: \$30.00. Send check made payable to Treasurer, Virginia Tech, or a purchase order to: Multi-State Project, 2206 S. Main St., Suite B, Blacksburg, VA 24060. Phone: (703) 231-7348 or Fax: (703) 231-7019.

Agricultural Notes

Workshop Set On European Environmentally Sustainable Agriculture

The Organization For Economic Co-operation and Development (OECD) will convene a workshop on sustainable agriculture in Europe at OECD headquarters in Paris on February 11-13, 1992.

The director of the Pollution Control Division of OECD's Environment Directorate and workshop chairman is Rebecca Hamner, former EPA Assistant Administrator for Water. In a letter on the workshop to *News-Notes*, Hamner said:

The main thing we are trying to do is acquaint both agriculture and environmental policy makers (from the 24 OECD member countries) with the most promising technology and practices for sustainable agriculture as described by both research experts and farmer-practitioners.

We want to share knowledge and also generate some excitement about the possibilities of sustainable agriculture. One thing that is particularly encouraging here is that the OECD Agriculture Directorate is strongly supporting the project and the Agriculture Committee (made up of ag types from the member governments) is getting increasingly interested in more environment and agriculture work. While it is premature to claim "victory" for sustainable agriculture, certainly the interest in sustainable agriculture is strong and growing.

The workshop is a part of a longer range 1991-92 work agenda specifically structured to encourage environmentally sustainable agriculture, part of OECD's Programme on Technology and Environment. A multi-nation Advisory Panel on Agriculture and Environment is working with OECD's Environment Directorate with the advice and assistance of its Directorate for Food, Agriculture and Fisheries to carry out the project.

The sustainable agriculture project statement has this to say on the consequences of success: **(EDITOR'S NOTE:** Keep in mind that these "consequences" relate to the environment and the agriculture of 24 European countries, although the words sound mighty familiar to us Americans.):

Looking at trends in population growth and resource use, changes in agriculture sector production practices are key to the long-term sustainability of economies . . . member countries increasingly report serious groundwater contamination, problems (resulting) from agricultural practices that threaten rural populations. Worldwide, changes in agricultural practices are needed to address a myriad of serious issues, including product quality concerns such as residues in food, and environmental problems such as: soil erosion and loss of productivity, buildup of harmful residues in the soil and underlying groundwater, water resource shortages, destruction of wildlife habitat and recreational amenities, and water quality problems of increasing severity. Success in OECD's programs, combining the agricultural sector activities with considerations of environmental and trade impacts, could contribute substantially to badly needed answers and systems. Because of the importance of international trade in this sector, cooperative activity among trading nations is particularly important.

Dr. Paul O'Connell of USDA and Ken Adler from U.S. EPA, who have provided some funding for the project, joined with the eight European nation Advisory Panel at OECD's Paris headquarters in mid-July to help work out the three-day meeting agenda.

Adler, who is with EPA's Office of Policy, Planning and Evaluation, gave his views to *NEWS-NOTES* following his return from Paris:

We expect to learn a great deal from fellow OECD countries about environmentally sustainable agriculture technologies, particularly in relation to livestock operations, as well as fruits, vines and

vegetables. The U.S. Contingent will make a major presentation on environmentally sustainable practices for corn and feed grain production. In addition, EPA's EMAP program will discuss their work on environmental indicators for sustainable agriculture, which has received a great deal of interest from OECD partners.

As we get further details on this meeting/ workshop, NEWS-NOTES will pass them along.

Sustainable Agriculture Study Awarded EPA Grant Implementing Central Colorado Multi-Agency Project

Central Colorado farmers are cooperating with federal and state agencies, Colorado State University and the University of Northern Colorado in a study of the principles and practices of sustainable agriculture and their impacts upon the environment. An EPA start-up grant of \$220,000 enabled the project, long in the planning stage, to start actual field work on cooperating farms last summer, according to Doug Johnson, EPA Region VIII, Denver. The Central Colorado Water Conservancy District (CCWCD) Board manages the research and development component of the project. Pollution prevention is a basic tenet of the water quality project.

A primary goal, according to the study plan, is to increase acceptance of sustainable agriculture. An assessment will be made of on-farm inputs such as pesticides and nutrients. The U.S. Geological Survey (USGS) and CCWCD plan to analyze all water entering and leaving the study fields.

A recent progress report indicates that 36 wells have been installed by the USGS on nine farms in July and August of 1991; limited monitoring of the wells began in September.

Fred EchoHawk, project manager, says the farms were chosen because they represent different soil types, cropping systems, and tillage patterns as well as different irrigation systems. Farmer cooperation has been outstanding, according to Echohawk; all but one of the farmers who were asked to participate accepted. Bob Walker, a farmer from Wiggins, CO, and chairman of the CCWCD Board, said farmers felt it would be better to be involved at the beginning of the project rather than wait and simply react.

The study area is located near Greeley along the South Platte River. The study plots average 10 to 20 acres.

[For more information, contact: Mr. Fred EchoHawk, Project Manager, Central Colorado Water Conservancy District, 3209 West 28th Street, Greeley, CO 80631. Phone: (303) 654-0425.]

CTIC National Program To Help Farmers Reach Conservation Compliance Deadline

The Conservation Technology Information Center (CTIC), utilizing resources of the USDA, local soil and water conservation districts, agricultural commodity organizations, and the agricultural industry, has launched a national program to help the country's farmers beat the deadline for conservation provisions of the 1985 and 1990 Farm Bills. According to CTIC senior director John Becherer, the combined resources of these groups will provide the nation's farmers with information, products, and services to assist them with implementing residue management (a system that combats soil erosion by leaving plant residue on farm fields after harvest) and other conservation tillage techniques. Using conservation tillage helps farmers remain eligible for federal farm program benefits.

In the states of Iowa, Nebraska, Missouri and Illinois alone, farmers' plans call for residue management of an estimated 22 million acres of row crops by the 1995 deadline.

A major goal of this CTIC project is to generate a positive image of the conservation provisions, leading farmers to implement conservation plans on highly erodible land before the 1995 deadline.

A CTIC press release stated that a media campaign will target areas of the country where soil erosion remains a major problem. The cooperating agencies and organizations will distribute literature on conservation practices.

CTIC hopes to develop a more positive image of the farmer in the minds of the public as well as cultivate role models for those farmers still unconvinced about the benefits of residue management in relation to conservation compliance.

[For more information, contact: John Becherer, Senior Director, CTIC, 1220 Potter Drive, Room 170, West Lafayette, IN 47906-1334. Phone: (317) 494-9555.]

Tips on Using The Nonpoint Source Electronic Bulletin Board (BBS)

NPS BBS Users' Manual Updated For New Users

The *NPS BBS Users' Manual* has been updated. Many comments and suggestions from *BBS* users have been put to work to make needed improvements.

The most exciting addition to the manual is a "Guided Tour" for new users. The Guided Tour walks you through the bulletin board, using all the main features of the *NPS BBS*, including new user registration; reading the informational bulletins online and capturing them to a disk or printout for later use; downloading files, including a key utility file needed to use other files acquired from the *BBS*; joining a Special Interest Group (SIG) Forum; and using the online searchable databases (Doors).

If you are already a regular user of the *NPS BBS*, you probably don't need the new manual. Few additional tips or hints are given that are not available in the old manual. You can, however, download the new manual to your own PC in either WordPerfect 5.1 or ASCII format. The manual can be found in the Main Board File Area 2.

If you are a new or inexperienced user, however, or have not yet tried to access the *BBS*, the new manual is a must! To order your copy, write to the U.S. EPA Nonpoint Source Information Exchange, (WH-553), 401 M Street, SW, Washington, DC, 20460 Or FAX a request to (202)260-1517. Use **The Coupon** in the back of this edition of *NEWS-NOTES*.

Fish Consumption and Waterbody System (WBS) Special Interest Group (SIG) Forums Open

The *Nonpoint Source Information Exchange* is pleased to announce the opening of two additional SIG Forums on the *NPS BBS*. They join the Agricultural Issues SIG Forum in serving the special information needs of NPS and water quality practitioners in the regions, states, and localities around the country.

Within the *NPS BBS*, Special Interest Group (SIG) Forums function as discrete, fully functioning bulletin boards, including offering public and private messages, informational bulletins to read online, and text and program files for downloading.

To join any of the *NPS BBS* SIG Forums, type "j" at the Main Board Command prompt. This will display a list of SIG Forums. Simply select the number of the SIG Forum you wish to visit. At the end of your visit, type "a" to abandon the SIG Forum and return to the *BBS* Main Board.

Fish Consumption SIG Forum

The Fish Consumption Special Interest Group (SIG) Forum will provide state officials and other interested parties with information about fish consumption advisories and bans in their own and other states, listing of current and projected fish consumption surveys and an annotated bibliography of supporting documents.

The technical monitor for the SIG will be Skip Houseknecht of the U.S. EPA, Office of Water, Office of Science and Technology, Standards and Applied Science Division, Risk Assessment and Management Branch. (Skip's phone number is (FTS/202) 260-7055.)

The key feature of this SIG Forum is the Fish Consumption Advisory/Ban database. This is an interactive, menu-driven database that contains information on fish consumption bans and

Fish Consumption
and Waterbody
System (WBS)
Special Interest
Group (SIG)
Forums Open
(continued)

advisories, related reports and documents, and names and phone numbers of colleagues who can provide additional information or supply documents. To access this database, you must already have joined the SIG Forum (see above). Then type "open" at the '**FISH BAN (2) SIG Command?**' prompt.

Waterbody System (WBS) SIG Forum

The EPA Waterbody System SIG Forum (WBS SIG) is designed to keep users of the WBS up to date on current activities and provide a forum for comments and questions regarding the system.

The WBS is EPA's method of collecting, storing, retrieving and analyzing water quality assessment information collected by the states to meet the Agency's congressional reporting requirements under section 305(b) of the Clean Water Act.

Jack Clifford, who oversees the WBS, and Alice Mayo, who prepares the "305(b) Report to Congress," will provide announcements to keep users informed of recent activities. There may be tips and suggestions from the programmers or other users on ways to improve data entry with the new WBS software.

The technical monitor for this SIG is Mary Baechtel. She is the primary contact if you have questions, comments, or problems regarding the SIG. Mary Baechtel may be reached at (FTS/202) 260-7057. Jack Clifford's phone number is (FTS/202) 260-3665.

Off-Line Mail Reader Saves Time (and Dollars) On-line

Here's a tip that can save money!

You can cut your on-line time (and long-distance costs) by taking advantage of **QMail**, the off-line mail reader available on the *NPS BBS*. This utility allows you to quickly download a single file with all the messages, files, and bulletins you are interested in. A companion program that you use on your own computer then simulates the *NPS BBS* on your computer after you are disconnected from the *NPS BBS*. You can read and respond to messages at your leisure and then upload your responses in one file to the *BBS*. QMail will then distribute your new files and messages to the appropriate people and places on the *BBS*.

Since the bulk of your session is conducted off-line, you save the telephone charges you would normally accrue doing the same functions while connected to the *BBS*.

You will need your own software to handle your off-line session on your computer. Some examples of QMail-compatible software that you could install and run on your computer are Deluxe2, Silly Little Mail Reader, Easy Reader, RA Mail, and many others. Several of these are available to download from the Main Board File Area 2 on the *NPS BBS*.

If you download a compatible off-line mail reader from the *NPS BBS* or any other bulletin board, you will probably need to register it with the producer/distributor for a small registration fee. This will be explained in documentation that comes with the file when you download it.

For further information on using QMail, see Main Board Bulletin #6 on-line.

Reviews

NACD Produces THE WEALTH IN WETLANDS Video

Soft guitar and harmonica music introduce a new videotape focused on balancing agriculture and wetlands. *The Wealth in Wetlands* motivates farmers to maintain existing wetlands and shows the public that the agricultural community is willing to maintain and restore wetlands.

The tape was a joint project of the National Association of Conservation Districts, Ducks Unlimited, *Successful Farming* magazine, SCS, U. S. Fish and Wildlife Service, and the National Fish and Wildlife Foundation.

The video features five farmers who explain how they improved their farmsteads by restoring wetlands in ways that complemented farming practices and eased their own work loads. All emphasized the value of the environment and wildlife to their own lifestyles. Even in cases where income was slightly reduced, the farmers concluded that it was worth it.

Carl Schwartz of McDonough, New York, tells of restoring a wetlands area to supply water to several pastures. The wetlands now prevent sediment run-off and absorb pollutants as well as watering his cattle. Schwartz explains that while farming is a business, it is also a lifestyle he wants to preserve for his children.

A second farmer, Bruce Brown of Louisiana, increased his cash crop by restoring previously drained fields to flooded rice fields. Spring and summer are devoted to rice and fall to soybeans; in winter, Brown harvests crawfish and enjoys duck and goose hunting. At the same time, his wetlands reduce weeds, recharge groundwater, provide flood control, protect spawning grounds for fish, and serve as a way station for migrating waterfowl.

The shock of watching a bulldozer destroy his boyhood hunting ground in Indiana inspired Ray McCormick to flood his own fields for waterfowl eight months of the year while farming more efficiently during the remaining four. By placing land that was difficult to farm in a conservation reserve program, he learned to make use of the wetlands on his farm rather than try to conquer them. McCormick felt rewarded for all his efforts when he sighted a bald eagle on his own marsh.

The Agricultural Stabilization and Conservation Service helped Charles Piekarski to cautiously withdraw a portion of his Minnesota farmland from production. In the video, the farmer says he is so pleased with the results that he will preserve that slough as long as he lives. Piekarski no longer struggles to farm marginal land and can now work and play on his own land.

Farming the delta of the Sacramento River, Jim Shanks and Sally Hearne flood their rice, wheat and corn fields on a regular rotating basis. The flooding reduces weeds, and so many birds have been attracted that the pair occasionally find it necessary to "do a little light herding." They spoke proudly of being pioneers in new way of agriculture that recognizes the value of wetlands.

While the five testimonials offer an inspiring message on the value of natural wetlands, the video also offers concrete advice to farmers considering restoration and conservation by providing information on financial and technical assistance.

[Copies of the videotape are available from soil and water conservation districts and also from local offices of the sponsors. The 23-minute, 1/2" VHS tape may be purchased for \$10 or rented for \$5 from the National Association of Conservation Districts, PO Box 855, League City, TX 77574. Phone: (800) 825-5547.]

Two More Water Quality Standards Videos Produced

The Environmental Protection Agency's Office of Science and Technology, Standards and Applied Science Division, has developed two new videotape productions on the water quality standards program. The titles are:

- "Water Quality-Based Approach to Pollution Control"
- "Water Quality Standards and 401 Certification"

The videotapes (along with four productions already released to the public) are designed to provide information about the role and the importance of the water quality standards program in the effort to clean up our nation's waters. The "Water Quality-Based Approach" is directly applicable to the control of nonpoint sources of water pollution.

The video productions are available to environmental, public interest, and educational groups; local governments; Federal agencies and industrial and other organizations.

The previously released productions are:

- "Introduction to Water Quality Standards"
- "Antidegradation Policy: A Means to Maintain and Protect Existing Uses and Water Quality"

- "Development of Water Quality Criteria and Its Relationship to Water Quality Standards"
- "Enumeration Methods for E. Coli and Enterococci"

These six videos are available on loan from the Standards and Applied Science Division at EPA's Headquarters or from EPA's ten regional offices at the following addresses:

Eric Hall, *Water Quality Standards Coordinator*
U.S. EPA
Region 1, Water Division
JFK Federal Building
Boston, MA 02203
617-565-3533

Rick Balla, *Water Quality Standards Coordinator*
U.S. EPA
Region 2, Water Division
26 Federal Plaza
New York, NY 10278
212-264-1559

Edward Ambrogio, *Water Quality Standards Coordinator*
U.S. EPA
Region 3, Water Division
841 Chestnut Street
Philadelphia, PA 19107
215-597-4491

Fritz Wagener, *Water Quality Standards Coordinator*
U.S. EPA
Region 4, Water Division
345 Courtland Street, NE
Atlanta, GA 30365
404-347-3396

David Allen, *Water Quality Standards Coordinator*
U.S. EPA
Region 5, Water Division
230 South Dearborn Street
Chicago, IL 60604
312-886-6696

Cheryl Overstreet, *Water Quality Standards Coordinator*
U.S. EPA
Region 6, Water Division
1445 Ross Avenue
First Interstate Bank Tower
Dallas, TX 75202
214-655-7145

John Houllhan, *Water Quality Standards Coordinator*
U.S. EPA
Region 7, Water Compliance Branch
726 Minnesota Avenue
Kansas City, KS 66101
913-551-7432

Bill Wuerthele, *Water Quality Standards Coordinator*
U.S. EPA
Region 8, Water Division
999 18th Street
Denver, CO 80202-2405
303-293-1586

Phil Woods, *Water Quality Standards Coordinator*
U.S. EPA
Region 9, Water Division
75 Hawthorne Street
San Francisco, CA 94105
415-744-1994

Sally Marquis, *Water Quality Standards Coordinator*
U.S. EPA
Water Division
1200 Sixth Avenue
Seattle, WA 98101
206-442-2116

**The Science and Applied
Science Division contact at
headquarters is:**

Frances A. Desselle
U.S. EPA
Office of Science and Technology
Standards and Applied Science
Division
401 M Street, SW (WH-585)
Washington, DC 20460
202-260-1320

Additional information about the water quality standards program may be obtained from Frances A. Desselle at the above address.

Educational Cartoon Book Teaches Kids About Clean Water

Individuals—even children—can take action to protect water quality. That's the message delivered by *Water in Your Hands*, recently published by the Soil and Water Conservation Society. The cartoon book was prepared for fourth, fifth, and sixth grade boys and girls and is printed in English and Spanish versions. The booklet emphasizes the importance of water to plants and animals and to the human body.

A character named "Fresh Water" guides a girl and boy on surfboards over the wide array of water environs, including surface water and groundwater. The children discover that water moves around the earth in different ways. The water they encounter is not always clean, and several different pollutants are discussed in the cartoon book.

Teachers' guides accompany the booklets, and by incorporating the booklet into lessons or discussions, educators can explain the hydrologic cycle and the importance of clean water.

[Copies are available at no charge from U.S. EPA Public Information Center (PM-211B), 401 M St., S.W., Washington, DC 20460. Phone: 202/260-7751. Or from Tim Kautza, Director of Programs, SWCS, 7515 N.E. Ankeny Road, Ankeny, IA 50021-9764. Phone: 515/289-2331; or 800/THE-SOIL. Charge varies by quantity ordered. Individual copy-75 cents. 2-99 copies - 25 cents/copy, 100-499 copies - 20 cents/copy, 500-999 copies - 18 cents/copy, postage prepaid. Teacher's guide: single copy - \$2.00, 2 or more copies - \$1.50/copy.]

Datebook

This DATEBOOK has been assembled with the cooperation of our readers. 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.

MEETINGS AND EVENTS

1991

December

10-13

Principles of Water Quality Modeling with Emphasis on the U.S. EPA Water Analysis Simulation Program – WASP4, Athens, GA. Contact: Desiree Hassan ASci Corporation, 987 Gaines School Rd., Athens, GA 30605. (404)353-8718. Topics: hydraulic and hydrodynamic modeling, transport modeling, toxicant kinetics, eutrophication modeling.

1992

January

28-30

Montana Water Quality Conference, Butte, Montana. CANCELLED.

February

2-6

National Association of Conservation Districts Annual Convention, Reno, NV. Contact: NACD Service Center, PO Box 855, League City, TX 77574-0855. (713)332-3402.

18-21

1992 International Erosion Control Association Annual Conference, Reno, NV. Contact: IECA PO Box 4904, Steamboat Springs, CO 80477.

21-23

Partnerships for the Environment, Portland, OR. Contact: Susan Handley, EPA Region 10 (206)553-1287. Components of successful citizen monitoring programs, data use and abuse, fundraising, budgeting, conflict resolution, effective management of citizen monitors and monitoring techniques and practices. Sponsored by U.S.EPA Region 10.

March

3-4

Integrated State and Local Wetland Management, Houston, TX. Contact: John Custler, Association of State Wetland Managers (518)872-1804. Theme: Integrating wetland protection, riparian habitat management, stormwater management, and point and nonpoint source pollution control.

19-21

Southeast Regional Lake Management Conference, Marietta, GA. Contact: North American Lake Management Society, 1 Progress Blvd, Alchua, FL 32615. (904)462-2554.

25-26

North Dakota Water Quality Symposium, Bismark, ND. Contact: Bruce Seelig, Water Quality Specialist, Ag Engineering, North Dakota State University, Box 5626, Fargo, ND 58105. (701)237-8690. The symposium will provide a forum for both professionals and nonprofessionals to exchange research, information and ideas on a range of water quality topics from health to economic development.

29-4/2

Third National Citizens' Volunteer Water Monitoring Conference, Annapolis, MD. Contact: Volunteer Monitoring Conference, Izaak Walton League of America, 1401 Wilson Blvd., Arlington, VA 22209. (703)528-1818. The conference will provide a hands-on approach to learning by offering over 25 workshops, panel discussions and field trips. Trainers will teach participants how to organize projects, use different monitoring methods, analyze data and work with agencies. The theme of this conference is "Building Partnerships in the Year of Clean Water." It is sponsored by the U.S. EPA, Izaak Walton League of America, Alliance for the Chesapeake Bay and America's Clean Water Foundation. Ten full-travel scholarships will be awarded. For information on the scholarships, write Karen Firehock, IWLA, by Dec.15.

April

5-4

Organizing for the Coast: Coastal Society Annual Conference, Washington, DC. Contact: Lauriston King, Office of University Research, Texas A&M University, College Station, TX 77843. (409)845-1811. Possible topics: estuarine and coastal research, communicating scientific advice to policymakers, perceptions of the human race's tie to the sea, coastal governance, citizen participation, marine education.

1992

April

12-16 *Availability of Groundwater Resources*, Raleigh, NC. Contact: Robert C. Borden, Technical Comm. Chair, Dept of Civil Engineering, North Carolina State Univ, PO Box 7908, Raleigh, NC 27895. (919) 515-7665.

13-15 *1992 Virginia Water Resources Conference*, Richmond, VA. Contact: Elizabeth Crumbley, VA Water Resources Research Center, VA Polytechnic Institute & State University, 617 North Main St., Blacksburg, VA 24060-3397. (703)231-8038. Possible topics: water quality monitoring, BMPs, mining, lake association problems, lake front stabilization, nutrient reduction, on-site sewage systems, watershed management, resolving water conflicts, nonpoint source pollution etc.

May

6-8 *Enhancing the States' Lake Management Programs: Strengthening State and Local Interactions*, Chicago, IL. Contact: Bob Kirshner, Northeastern Illinois Planning Commission, Natural Resource Dept., 400 Madison St., Chicago, IL 60606. (312)454-0400. Topics planned include: building links among state lake associations and environmental agencies, state lake association roles in developing state-sponsored lake programs, integrating state and local lake and watershed protection programs. Also, sediment contamination criteria and their use in lake restoration decision-making, overview of the new wetland delineation procedures, using TMDLs for lake protection and many other topics. Submit any other topics by Dec.13. Conference is sponsored by the U.S.EPA, Clean Lakes Program, Northeastern Illinois Planning Commission, and the North American Lake Management Society.

August

2-5 *Water Forum '92: Saving A Threatened Resource*, Baltimore, MD. Contact: ASCE Conference Dept., 345 E 47 St, New York, NY 10017. (800)548-ASCE.

September

13-17 *National RCWP Symposium: Ten Years of Controlling Agricultural Nonpoint Pollution: The RCWP Experience*, Orlando, FL. Contact: Lisa Grayson, The Terrene Institute, 1000 Connecticut Ave. NW, Suite 802, Washington, DC 20036. (202) 833-3380. Symposium offers the opportunity to present and discuss the outcome of projects related to the 10-year experimental Rural Clean Water Program. Hosted by the South Florida Water Management District with U.S.EPA, ASCS, SCS, and Extension Service.

CALL FOR PAPERS

Deadlines

1992

January

10 *The Development of Soil and Groundwater Cleanup Standards for Contaminated Sites*, Washington, DC. CALL FOR PAPERS. Contact: Dr. Eileen O'Neill, Water Pollution Control Federation, 601 Wythe St., Alexandria, VA 22314-1992. (703)684-2400. (703)684-2492. Dates for conference TENTATIVELY December 14-16 1992. Submit abstracts by January 10, 1992.

10 *1992 Annual Meeting of the American Fisheries Society*, Rapid City, SD. Theme: "The Year 2000: Will We Be Ready Technically? Socially? Politically?" Contact: Bud Griswold, National Sea Grant College Program, 1335 East-West Highway, Room 5216, Silver Spring, MD. Phone: (301) 427-2431. Conference dates: September 13-17, 1992.

July

15 *Surface Water Quality and Ecology: 1992 Annual Water Environment Federation Conference*, New Orleans, LA. CALL FOR PAPERS. Contact: Maureen Novotne, WEF Technical Services, 601 Wythe St., Alexandria, VA 22314-1994. (703)684-2400. Conference dates: September 20-24, 1992. Submit abstracts by July 15, 1992. Topics may include: urban and agricultural nonpoint sources, stormwater management, nutrient problems and eutrophication, river and lake management, water quality monitoring, water quality modeling, waste disposal effects on estuaries.

The Coupon

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