



News-Notes

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

Two Commentaries . . .

A Former County Ag Agent Revisits His Early Haunts. . .

EDITOR'S NOTE: These reflections are those of Harold Owens, since Issue #1 a *News-Notes* editorial assistant and writer. Harold spent 30 years with USDA's Cooperative Extension System, first as a county agent in DeKalb County, MO, and later in Washington, DC, where he ended his service as a national program leader in agronomy. We appreciate your thoughts, Harold.

During a motor trip to central and north central Missouri in late April and early May—corn-planting time on those fertile fields—I noticed a dramatic change in farming practices. Only a few years before, conservation tillage, mostly mulch tillage, was observed on only an occasional field. In fact, one had to hunt to find a conservation-tilled field. In nearly a complete switch, farmers are now leaving a covering of crop residue while preparing the soil for planting corn on most fields; only an occasional field had been moldboard plowed.

Conservation tillage, of course, reduces soil erosion (and hence sediment delivery to waterbodies) by maintaining a covering of crop residue on the soil surface. Although conservation tillage may now be a routine practice on very erodible, sloping fields, farmers had also prepared Missouri River bottom-land fields the conservation tillage way, which in the past was often referred to by farmers as "trashy farming."

Observing this dramatic switch to conservation tillage in my childhood community and surrounding Missouri farmlands was very exciting. In my professional career, I have been involved in establishing many on-farm conservation demonstrations in this nation and overseas. A great feeling of satisfaction welled up in me at seeing this wholesale application of mulch tillage. My efforts, as well as those of many others, are bearing fruit.

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The Editor Makes An Observation . . .

Another Viewpoint is Expressed on Public Lands Grazing

Just as we were about to go to press with this issue, we received a letter from Mr. Myron Ebell, who is the Washington Representative of the National Inholders Association (NIA). He advised us that his organization had produced a publication on the same subject as *How Not to be Cowed—Livestock Grazing on the Public Lands: An Owner's Manual*, which we commented on favorably and editorially in our last issue. The NIA booklet is entitled *How to Fight Back and Win: A Rancher's Guide*.

The NIA publication is meant to inform ranchers of their rights and privileges. Although we cannot completely agree with Mr. Ebell's view as expressed in his letter, where he said "I am sure you will agree with me that Federal grazing permittees do more to protect and enhance the environmental quality of our Federal lands than any other group of people," we welcome his notion that grazing and environmental quality can go hand in hand. Further, we do know permittees who are, indeed, first class environmentalists, and their number is growing.¹ We believe that knowledgeable cattlemen, as well as hikers and backpackers, hunters and anglers, in short, informed citizens, are all essential to the kind of creative dialogue necessary to the making of proper decisions on environmental matters on the public lands.

The booklet grew out of a 1988 conference on Federal lands sponsored by National Woolgrowers Association, Public Lands Council, National Center For Constitutional Studies, Mountain States Legal Foundation, Center for The Defense Of Free Enterprise, National Inholders Association, and Multiple Use Land Alliance.

— Hal Wise, *News-Notes* Editor

[Copies are available, at \$3.00 each, and may be ordered from National Inholders Association, PO Box 400, Battle Ground, WA 98604. Phone: (206) 687-3087. FAX: (206) 687-2973.]

¹ See *News-Notes* articles on new riparian associations in Colorado and New Mexico [Issue #19 and page 12 in this issue] where cattlemen and ranchers are playing important leadership roles in concert with state and federal agencies and other citizens.

Noteworthy Water Quality Happenings

State Extension Water Quality Coordinators Directory is Published

A directory of state Extension Service staffs serving as water quality coordinators is available. As stated in the directory introduction:

The role of Water Quality Coordinators continues to evolve as the level of public interest, Congressional concern, and Extension programming increases and intensifies. Water Quality Coordinators are a vital link in Extension programming in every State. They are the primary contact for interstate communications within the Cooperative Extension System and for other agencies and organizations interested in exploring cooperative efforts.

The 21-member federal Extension Service staff, called the Water Quality Initiative Team is also listed in the directory along with the responsibilities of each team member. The role of the team is indicated:

Provides oversight and management of the Extension programs in water quality, including:

- *the review of plans of work and accomplishment reports;*
- *collect and catalog Extension water quality materials;*
- *manage federally mandated and funded programs;*
- *prepare reports for the Administration and Congress;*
- *develop budget materials;*
- *interact with a number of joint ES/ECOP committees; and*
- *maintain liaison with Federal action, research, and regulatory agencies within and outside USDA.*

[For free single copies of the 16-page Extension WQ Coordinators directory, contact: Carol Ely, Extension Service, USDA, Room 3346-So. Bldg., Washington, DC 20250-0900. Phone: (202) 720-5285. FAX: (202) 720-4924.]

Arkansas and Oklahoma Bury the Hatchet

In a quiet ceremony near the banks of the scenic Illinois River, representatives from the states of Arkansas and Oklahoma lowered a simple pine coffin into a rocky grave and then placed wildflowers from both states on the mound. The coffin contained a hatchet, the symbol of dissention, distrust, and miscooperation that has sometimes existed between the states for the past few years concerning a number of environmental issues, not the least of which was a lawsuit concerning water quality standards, effluent limits, and discharge locations for wastewater treatment plants (WWTPs) that was recently ruled on by the U.S. Supreme Court. During the eulogy, Bob Morgan, Arkansas NPS coordinator, told the crowd, "We are burying this hatchet in the ground so that both states can get their work done without it being buried in one or the other's backs." The mock ceremony was staged to highlight the recently signed agreement by the governors of Oklahoma and Arkansas in which the states agree to cooperate and coordinate pollution control efforts in watersheds shared by both states.

A Bi-State Tour

The ceremony was part of a two-and-a-half day tour of the Illinois River watershed designed to show citizens, interest groups, and local, state, and federal government agencies some of the challenges and solutions to water pollution faced by both states in this basin, which has one of the highest poultry and cattle production rates in the country. The tour began at the headwaters of the Illinois River in Arkansas and ended at Tenkiller Lake in Oklahoma. Otis Bennett, the Oklahoma watershed manager who arranged and coordinated the tour, made sure that many different interest groups and constituencies were invited. "It is important that everyone knows what everyone else is doing and what their concerns and perspectives are before real progress is made. I think this tour is a good way to bring together such a diverse audience and get them to focus on the resource (water) to be protected."

Participants observed some standard NPS BMPs, such as poultry composters, nutrient management, dairy lagoons, septic tank installation, and containerized nursery management, and heard about some innovative education and technical assistance programs that are staffed by federal (SCS), state (CES), and local (SWCD) employees. Jerry Mitchell, area conservationist with SCS in NW Arkansas, said, "I think it is amazing how the cooperation between the agencies has enhanced all our efforts; that so many agencies would dedicate staff from their existing budgets to work directly on water quality shows how important we think this watershed is." On the evening of the second day, the cities of Fayetteville, AR, and Tallequah, OK presented videos and a discussion about the two new state-of-the-art (tertiary treatment) WWTPs that have recently gone on-line in the basin. The plants have some of the tightest effluent limits in EPA Region 6. Mike Smolen of the Oklahoma Cooperative Extension Service commented, "To be part of a total watershed project that is considering both point source and NPS loadings to a waterbody is great; finally, we are approaching water resource management as it should be — a holistic package."

Multi-agency/Multi-state Projects/Funding

The tour only had time to visit a few BMP sites, but participants heard of the many activities planned in the coming years. The multi-state, multi-activity, multi-pollution project is supported by a combination of USDA HUA funds, together with EPA 319, 205(j)(5), 106, and construction grant funds. The project is well underway. It will feature traditional cost-share, technical assistance and education programs with some new twists: cost-share by the state of Oklahoma for some water quality BMPs not eligible for USDA cost-share assistance; dedication of a full-time Soil Conservation Service water quality specialist (conservationist/engineer) stationed at the field office level (where the real work is) in Arkansas; continued support by Oklahoma of a state-employed watershed manager who has been well respected and active in the watershed for more than 15 years; and hiring and training of four state technicians to be located on the Arkansas side of the watershed to provide agricultural producers with direct technical assistance in the preparation and application of complete animal waste systems.

An added feature of the tour was a float trip in which participants got close-up views of the many streambank areas needing stabilization. Use of pole plantings, in which vegetative shoots of fast rooting and growing shrubs and trees are "punched" (buried) into an unstable bank where they root and stabilize the area, was discussed in an interactive technology transfer session at water's edge.

The watershed project is focusing efforts on control of point sources of pollution (including sewage treatment plants and small industrial dischargers) as well as working to control and prevent nonpoint source pollution from intense recreational use, poultry, swine and dairy operations, septic systems, nurseries, grazing, road construction and maintenance, and timber harvest operations. Efforts are soon to be underway to protect domestic water supplies (where citizens get their drinking water from their own wells) through use of the Farmstead Assessment System (developed cooperatively through the Extension Service and the EPA).

The governor's office in Arkansas sent Ken Smith, special assistant for natural and cultural resources, on the tour. Ken commented, "This trip to the Illinois River Basin really helped me see implementation of a variety of management practices that will work and will solve the animal waste problem. What impressed me most was the interest and commitment of the state and federal agency staff in both Arkansas and Oklahoma that is being brought to bear on the animal waste nonpoint source issue. It gave me great hope that working together we can improve and protect water quality in our states. When this hope for the future can be shared by our citizens and our government, a true partnership between the two can result in an improved environment and a stable economy. I think we are well on our way in the Illinois River watershed."

John Hassell, NPS coordinator for the Oklahoma Conservation Commission, summed up the meeting well: "In the past we spent a lot of valuable time, effort, and money trying to argue about the extent or existence of a problem in this basin. We are now focusing our efforts on actions; actions that will prevent pollution as the use of the watershed continues to grow and actions that will clean up pollution that may have occurred in the past because we were all unaware that the minute impacts of each person, when added together, can create a water quality problem."

[For more information, contact: Bob Morgan, Arkansas Soil & Water Conservation Commission, (501) 682-3954; or John Hassell, Oklahoma Conservation Commission, (405) 521-2384.]

News From The States

Virginia Sets Program to Increase Capabilities of State's SWCDs

The Virginia Conservation Leadership Project (VCLP), partially funded by the National Association of Conservation Districts (NACD), is an active program of the state's Division of Soil and Water Conservation (DSWC) to enhance and expand the capabilities of its local soil and water conservation districts.

Virginia has 45 Soil and Water Conservation Districts (SWCDs), ranging from one to four counties in size, most of them formed in the 1930s to halt the tremendous rate of erosion taking place on farmland throughout the country. Following the depression years and World War II, most districts around the country were relatively inactive. In the late 1980s, farm conservation and water quality problems began to get attention through the 1985 Food Security Act and the 1987 amendments to the Clean Water Act. Districts became the conduit for funding agricultural nonpoint source pollution programs, assisted by their support agencies in Virginia: DSWC and USDA's Soil Conservation Service (SCS). Pollution from agriculture accounts for about 60 percent of the nonpoint pollution to Virginia's waterways.

Organized under state law, districts are led by district directors, who are locally elected officials. Recent changes in state law have given districts the authority to help local governments address environmental issues as they impact water quality.

Moir Croghan, assistant manager, Bureau of Field Operations, DSWC, commented on this new role:

This means that districts have more clients than strictly farmers and that districts must change their missions and move in the direction of serving a wider range of environmental concerns.

She added,

We view districts as well-placed, decentralized entities to cause behavior changes related to NPS reductions among farmers, suburbanites, local government, developers, and schoolchildren. Virginia's strategy aims to make SWCDs a primary vehicle for administration of varied nonpoint source (NPS) programs.

In explaining the VLCP approach, Croghan said,

Our program includes a variety of techniques to cause NPS and other district programs to rise to prominence: promotional materials, enhanced communications, identity development, strategic planning, leadership and technical training, district directors orientation, and other components to augment the ability of SWCDs to serve their communities in the resolution of conservation problems.

Partners in this project are the DSWC, SCS, the Virginia Association of Soil and Water Conservation Districts, and the Virginia Cooperative Extension Service. VLCP is managed by a task force made up of representatives from the four conservation-oriented organizations listed above.

Virginia is one of ten states that have been funded by NACD to catalyze these local units of government into becoming more effective agents for local natural resource management.

[For further information, contact: Moira Croghan, Assistant Manager, Bureau of Field Operations, DSWC, Dept. of Conservation and Recreation, 203 Governor St., Suite 206, Richmond, VA 23219-2094. Phone: (804) 786-2064. FAX: (804) 786-1798.]

South Dakota NPS Program Sponsors Water Festival '92 for Schoolchildren

Over 1,100 fourth graders from seven Black Hills area school districts participated in South Dakota's first water festival May 11, on the campus of Black Hills State University in Spearfish, SD.

The festival provided students and teachers an opportunity to learn about the earth's water supply, its importance to their daily lives, and ways to prevent its pollution. Teachers in attendance were also recipients of water resources-related curriculum materials for use in their classrooms.

The festival's 23 sessions were presented by natural resources professionals from federal, state, and local agencies; private organizations; and industry. The professionals discussed a broad range of water-related subjects with students and teachers, including the water cycle, water quality and uses, pollution prevention, water monitoring, and treatment. Each student group was able to attend five presentations while at the festival.

Tim Bjork, South Dakota's Natural Resources administrator, told *News-Notes*:

... teachers, students, and session presenters rated the festival as being a huge success. We are planning to expand the activity to other areas of the state next year.

The South Dakota Water Festival was patterned after similar festivals held in Colorado. (See *News-Notes* Issue # 14, July-August 1991.) Water Festival '92 was sponsored jointly by the South Dakota Department of Environment and Natural Resources (DENR) and the Lawrence Conservation District with funds provided by EPA for the department's \$319 Nonpoint Source Information and Education Program.

[For further information, contact: Tim Bjork, Natural Resources Administrator, DENR, Joe Foss Building, 523 East Capitol, Pierre, South Dakota, 57501-3181. Phone: (605) 773-4216.]

EDITOR'S NOTE: South Dakota's 319 I & E program is unique. DENR is the lead agency for the NPS program, but the I & E coordinator is housed in the SD Department of Agriculture. This partnership developed because Agriculture volunteered the position to help in the effort to control NPS pollution in the state. A fine partnership, we say. Congrats.

California/EPA Fund a Rangeland Water Quality Education Program

A California Rangeland Watershed Program, jointly organized by University of California Cooperative Extension range specialists and the USDA SCS state range conservationist, recently received a grant from the State Water Resources Control Board and EPA, using Clean Water Act \$319 funds.

The program intends to coordinate education, research, and technical assistance activities at the state and local level. The grant will be used to fund development of educational materials for

rangeland owners, conduct staff training in Cooperative Extension and SCS, conduct local landowner education programs, and provide research-based information to policy makers. This education program also supports efforts by California's Range Management Advisory Committee (RMAC) to address rangeland water quality issues on privately owned rangelands.

RMAC advises the California State Board of Forestry. Beginning in 1990, it focused its attention on rangeland water quality and has taken the lead in developing and implementing a water quality plan for private rangelands in California. Most of the water quality issues on publicly owned rangeland are being addressed by the U.S. Forest Service and the Bureau of Land Management. The statewide plan will include sections on water quality assessment, agency roles in water quality planning, management measures (best management practices), approaches to watershed level planning, sources of technical and financial assistance, and monitoring.

The education program is directed at owners of private rangelands, which cover approximately 20 percent of the state's land surface and provide 90 percent of the forage that comes from the state's rangelands.

The Rangeland Watershed Program will rely heavily on a series of fact sheets that address specific topics. The first ten fact sheets cover such subjects as program descriptions, nonpoint sources of pollution on rangelands, watershed definitions and functions, local (watershed) level planning, water quality regulations, grazing, riparian areas, and water quality terminology. During March and April of this year, the Cooperative Extension range specialists and the SCS range conservationist used these fact sheets in rangeland water quality workshops. Six such workshops were attended by 125 farm advisors, specialists, and conservationists.

Meetings with rangeland owner groups at both state and local levels are underway to explain the RMAC and joint CE/SCS programs and initiate the awareness programs. This educational effort is also intended to support numerous related water quality projects such as those funded by EPA's \$319 monies and USDA's hydrologic unit areas and watershed demonstrations.

[For further information, contact: Agronomy and Range Science Extension, Cooperative Extension, University of California, Davis, California 95616-8515. Phone: W. James Clawson, Extension Range Specialist, (916) 752-3455; Melvin George, Extension Range and Pasture Specialist, (916) 752-1720; Joel Brown and Leonard Jolley, SCS State Range Conservationists, (916) 757-8254.]

Maine Takes Fresh Approach to Technology Transfer

EDITOR'S NOTE: Information for this article was contributed by Joyce Noel, Maine Department of Environmental Protection.

Municipal road crews in Maine are constructing some prize-winning ditches and learning erosion control techniques at the same time. Road crews competing in the "Ditch of the Year 1992" contest vie for locally donated prizes by implementing BMPs in their day-to-day ditching activities. Most of the towns in the Sebago Lake and Casco Bay Estuary watersheds have entered teams in the competition. Sebago Lake supplies Portland, the state's largest metropolitan area, with drinking water. The lake drains to the Casco Bay Estuary, which was recently named a Significant National Estuary.

Contestants must follow a few rules. First, all the participating towns attend a training session, where they learn about Sebago Lake and Casco Bay, erosion control BMPs, the cost of erosion vs. erosion control, ditching and culvert installation, and basic grading. The afternoon session is spent in the field, where all the participants watch grading techniques and then practice stabilizing the new ditches.

The road crew notifies the Cumberland County Soil and Water Conservation District (CCSWCD) when they are working on a ditch they wish to enter into the contest. CCSWCD takes pictures of the work and offers advice on request. Judging is based on shape of ditch, successful erosion control measures used such as seeding, reaction to rainfall conditions, and project planning. Special awards will be given for the best "bang for the buck" BMP and for innovative ideas.

Road crews compete for prizes on behalf of their town and individually. Municipal prizes include hosting the Local Roads Center Grading Seminar (free grading services to the town worth approximately \$30,000), a one-day use of a hydroseeder, and various erosion control materials. Individual prizes are donated and include ski passes, a rafting trip, a night at a local bowling alley, a boat ride to the Casco Bay Islands, a fishing trip on Sebago Lake, and a plane ride.

"Ditch of the Year 1992" is sponsored by the Maine Department of Environmental Protection's 319-funded program, Maine DOT-Local Roads Center, Portland Water District, Casco Bay Estuary Project, and CCSWCD. The sponsors work together to provide technical assistance to the local road crews. Direct technical assistance is provided by a CCSWCD district engineer who is available to "coach" the road crews throughout the summer on utilizing BMPs.

The contest, which has generated quite a bit of publicity in the watershed, highlights the importance of erosion control, and its benefits are numerous. Said Joyce Noel of the Maine Department of Environmental Protection, "This gives the municipalities a new and more helpful image of these bureaucratic agencies. In addition, we are able to work proactively with a land use group that traditionally has not acknowledged its importance to the quality of surface waters. Perhaps the most important outcome of the contest is that road crews and their town managers are finding that it doesn't take much additional money or time to use erosion control. If anything, they learn that a little planning and simple erosion control will save them money over time."

[For more information, contact: Joyce Noel, Maine DEP, State House Station #17, Augusta, ME 04333. Phone: (207) 289-3901.]

Also in Maine: State Guide Recommends Towns Incorporate BMPs Into Local Ordinances

EDITOR'S NOTE: In *News-Notes* issue #21, we sketched a picture of the badly degraded Anacostia River and the painful task of reclaiming it. In this issue, we review one of Maine's efforts to prevent the degradation of reasonably healthy watersheds.

Less than 1.5 million people live in Maine. Even in Portland, the state's most populated area, the population density hovers only around three people per acre. Even so, Maine's Department of Environmental Protection is preparing the state's towns for the future by arming local decision-makers with a resource they can use to keep haphazard development and other land uses from threatening their water resources.

The introduction to *Environmental Management, A Guide for Town Officials: Best Management Practices to Control Nonpoint Source Pollution* summarizes its message:

The most effective way for you, as a public official, to control nonpoint source pollution in your municipality is to establish standards—best management practices to which everyone must adhere. The standards should be incorporated into your town's land use ordinances.

"The guide has been very well received in the short time it's been out," said Environmental Specialist Ron Dyer of DEP. "That's because we brought local planning board members into the project. Originally, this was a much longer, more technical document, but planning board members convinced us that a shorter, more readable version would be more useful. They like to consult it as a reference during board meetings."

The guide outlines steps for local decision-makers to take to protect their water resources. It includes a checklist of structural and non-structural BMPs for construction sites, developed areas, sand and gravel pits, septic systems, solid waste disposal sites, marinas, farms, golf courses, lawns, woodlots, chemical and petroleum storage, and hazardous waste disposal. The guide suggests the checklist be used

- as guidance to a developer or subdeveloper *before* a formal application is made,
- to determine what measures a developer should take to control erosion and prevent pollution,
- to question applicants to determine if they have taken adequate pollution control measures, and
- to establish criteria for a planning board to formally incorporate into its subdivision, site plan, or other review standards.

Many recommendations are highly protective and involve land use restrictions. Suggested BMPs to control erosion on construction sites, for instance, include avoiding construction within 250 feet of a lake, river, or stream.

A section on water quality-related regulation outlines laws that can be applied to local development. Local laws, such as shoreland zoning, aquifer protection districts, and flood hazard ordinances, are suggested as areas where BMPs should be incorporated. State and federal regulations that may apply to certain projects and activities are also listed.

Also in Maine: State
Guide Recommends
Towns Incorporate
BMPs Into Local
Ordinances
(continued)

The Maine Bureau of Water Quality Control has also published a series of detailed BMP manuals concerning timber harvesting, construction sites, stormwater management, agricultural practices and phosphorus control. Information for obtaining these and other publications is in a final section that also refers readers to state and federal agencies (phone numbers included) and other resources.

[The guide is free and may be obtained (while supplies last) by writing to the Maine Department of Environmental Protection, State House Station #17, Augusta, ME 04333. For more information on Maine's nonpoint source control program, contact Ron Dyer or Joyce Noel at the above address or phone (207) 289-3901.]

Notes on Public Lands and Watershed Management

Forest Service Chief Announces New Ecosystem Management Policy for National Forests and Grasslands

F. Dale Robertson, chief of the U.S. Forest Service, announced on June 4, 1992, that the Service would embark on a new management philosophy: *Ecosystem Management of the National Forests and Grasslands*. In a communication to his regional foresters and station directors, he said:

Putting this in simple terms, we have been courting the ecosystem approach for three years and we like the relationship and results. Today, I am announcing the marriage and that the Forest Service is committed to using an ecological approach in the future management of the National Forests and Grasslands.

By ecosystem management, we mean that an ecological approach will be used to achieve the multiple-use management of the National Forests and Grasslands. It means that we must blend the needs of people and environmental values in such a way that the National Forests and Grasslands represent diverse, healthy, productive, and sustainable ecosystems. I'm confident that with our knowledge, expertise, and experience along with a stronger public involvement effort, we can bring the American people and their needs together with the land they own in a better way than it has ever been done before by anyone in the world. That's our challenge under this new policy of ecosystem management.

The chief's statement continued:

... Our management and care is essential to providing diverse and productive habitat for wildlife and fisheries, clean water, clean air, outstanding opportunities for outdoor recreation, natural wood products for American families, and long-term stability to the ecosystem. In a global framework, the forests play a vital role in being the lungs of the earth absorbing carbon dioxide and giving off oxygen. The forests also serve as an important air filter by taking pollutants out of the air and storing them in the forests. These are important reasons why we must put the management of the National Forests and Grasslands on an ecological basis.

He set forth four basic principles that will apply to future management:

- 1. "Take Care of the Land"** by protecting and restoring the integrity of its soils, air, waters, biological diversity, and ecological processes.
- 2. "Take Care of the People and their Cultural Diversity"** by meeting the basic needs of people and communities who depend on the land for food, fuel, shelter, livelihood, recreation, and spiritual renewal.
- 3. "Use Resources Wisely and Efficiently to Improve Economic Prosperity"** of communities, regions, and nations by cost-effective production of natural resources such as wood fiber, water, minerals, energy, forage for domestic animals, and recreation opportunities.
- 4. "Strive for Balance, Equity, and Harmony Between People and Land"** across interests, across regions, and across generations by sustaining what Aldo Leopold (1949) called the land community, meeting this generation's resource needs, and maintaining options for future generations to also meet their needs.

At the same time, Chief Robertson announced the elimination of clear-cutting as a standard harvesting practice in the National Forests. He said:

The new policy will limit clear-cutting to areas where it is essential to meet forest plan objectives, such as establishing habitat for endangered species of wildlife.

The policy announcement indicated that:

The objective of this new provision is to reduce clear-cutting on National Forest System lands and make greater use of individual tree selection, group selection, green tree retention, shelterwood, seed tree, and other regenerative cutting methods which collectively provide for a more visually pleasing and diverse vegetative appearance on a forest-wide basis.

Forest Service & BLM Team Up to Restore and Reintroduce Rare Native Aquatic Species

In a program they have named *Bring Back The Natives*, the Department of Agriculture's Forest Service and the Department of Interior's Bureau of Land Management have mounted a joint effort to restore and reintroduce practically extinct fish and other aquatic species to their native habitat on publicly managed lands.

Roger Dean, NPS coordinator in EPA's Region 8 (Denver), recently wrote to the Bureau of Land Management (BLM) asking for information on the program. Dr. Jack E. Williams, BLM's fisheries program manager, replied to Roger. Following are some highlights of Williams' answer:

Thank you for your recent inquiry on our Bring Back The Natives projects. This is a joint initiative of the USDA Forest Service, the Bureau of Land Management (BLM), and the National Fish and Wildlife Foundation. Our emphasis is for watershed-level stream restoration and the reintroduction of rare native aquatic species.

. . . our emphasis is for on-the-ground work. The National Fish and Wildlife Foundation was impressed enough to provide a \$500,000 challenge grant last year to the BLM and the Forest Service. They have asked us to expand our program this year.

Because this is a new effort, we could certainly use the help and encouragement of sister agencies. Virtually all of these projects have budgets that exceed our capabilities to fund. Also, as most of the projects have local cooperators (such as local chapters of Trout Unlimited) that provide much of the labor, funds go further with these efforts.

Calling for watershed-wide approaches, the program statement that Dr. Williams enclosed provided these additional key points:

Introduction

Bring Back The Natives is a new, combined effort of the Department of Interior's Bureau of Land Management (BLM), the U. S. Department of Agriculture's Forest Service, and the National Fish and Wildlife Foundation (NFWF), working together to restore the health of entire river systems and their native species on public lands. As the program is expanded, other National partners, such as Trout Unlimited, the American Fisheries Society, and states and local groups, are joining in this vital commitment to restore natural aquatic habitats on lands held in public trust.

Problem Statement

A Nationwide River Inventory recently found that only 1.8 percent of all rivers and creeks in the contiguous 48 states remain in a high quality condition. Our Nation's aquatic fish and invertebrate communities have declined as a result. The American Fisheries Society (AFS) recently documented a 45 percent increase in the number of freshwater fishes requiring special management because of their increasing rarity. For many aquatic invertebrates, such as freshwater mussels and crayfish, the declines are even more alarming. The BLM and Forest Service manage 461 million acres of public lands, which include 283,000 miles of permanent streams. This provides numerous opportunities to restore habitat areas and to conserve rare aquatic species, such as the 26 species and subspecies of trouts listed in the AFS report.

Goal

The goal of Bring Back The Natives projects is to restore damaged or degraded river habitats and their native aquatic species through watershed restoration. Habitat restoration and improved land management are keys to successful reestablishment of rare fish and other aquatic species. Successful stream restoration ultimately benefits water quality, stream health, and the system's many terrestrial and riparian-dependent species.

Implementing "Bring Back the Natives"

Bring Back The Natives is a primary instrument to implement national strategies for riparian habitat restoration and native fish habitat conservation. Proposals for Bring Back The Natives

plans of action are chosen from native fish restoration projects submitted from BLM and Forest Service field offices. Priority is given to those projects that involve:

- 1) Stream-wide restoration and/or cooperative efforts with state agencies to reintroduce native aquatic species, coupled with revised land management practices that eliminate the cause of degradation;
- 2) Watersheds within which both the Forest Service and the BLM have jurisdiction;
- 3) A major segment of the habitat of a species or community complex so as to have a significant impact on the overall status of a species and the ecosystem on which it depends; and
- 4) Active participation of appropriate local and national partners.

Bruce Newton, chief of EPA's Watershed Protection Branch, told *News-Notes*: "We are delighted with this forward-looking new program. *Bring Back the Natives* will preserve part of our natural resources as a legacy for future generations and will hopefully provide management experience for whole ecosystems that will help us understand the Clean Water Act goal of balanced indigenous populations. BLM, the Forest Service, and the Foundation are to be commended. We will encourage EPA's regions and their states to look for opportunities to collaborate in *Bring Back The Natives* projects, particularly within Watershed Protection Approach projects."

[For more information, states should contact their local BLM and Forest Service field offices. The national contacts are: Jack E. Williams, Fisheries Program Manager, Bureau of Land Management, USDOI, Washington DC, 20240. Phone: (FTS/202) 653-9202; Cindy Williams, Wildlife & Fisheries Staff, U.S. Forest Service, 201 14th St., SW, Washington DC 20240. Phone: (FTS/202) 202-0880; Lew Nash, Project Director, National Fish and Wildlife Foundation, 1120 Connecticut Ave., Suite 900, Washington DC 20036. Phone: (202) 857-0166.]

Montana's Bitterroot National Forest to Curtail Logging Due to Sediment-choked Streams

Recent hydrologic studies and analyses of the condition of watersheds in the Bitterroot National Forest have indicated that past logging practices have resulted in heavy siltation of large sections of the streams of the forest. These conditions are endangering or destroying fish and wildlife habitat to such an extent that further logging will have to be severely curtailed or stopped completely until the habitat in the watersheds can be restored.

The *Missoulian*, a Missoula, MT, newspaper, ran a three-part series on the situation. Greg Lakes, the author of the series, reported on conditions:

Most streams on the Bitterroot National Forest are in dramatically worse shape than officials thought, choked with more sediment than either aquatic biology or responsible policy can abide.

One-third of Bitterroot National Forest lands that are supposed to yield timber are off-limits for the foreseeable future. Logging and road construction have already dumped 10 times as much silt into their streams than forest standards allow.

Another third of the 400,000-acre timber base is flagged yellow for caution. Streams there are probably at, or over, acceptable silt levels, but managers need more field work to be sure.

On only one-third of the forest's timber-producing land are streams healthy enough to allow normal planning for routine timber sales. And most of that is in the headwaters of unroaded and undeveloped drainages.

The article reported that District Ranger Dave Campbell explained that watershed and habitat rehabilitation could be a long-term proposition but that it was not a question of rehabilitation of damaged streams so that logging could be resumed. The article states that federal laws, Forest Service policy, and the forest's own management plan "... plainly say that any degraded drainage must be fixed." The newspaper account concluded:

It is not a timber-versus-water issue, Campbell said. We have to rehabilitate the watershed.

[For more information, contact: District Ranger Dave Campbell, Sula Ranger District, Sula, MT, 59871. Phone: (406) 821-3201. Or, contact: Robert Hammer, Hydrologist, Bitterroot National Forest, 801 N. First St., Hamilton, MT, 59840. Phone: (406) 363-3131.]

Grazing on French Mesa in New Mexico: A Forest Service/State NPS Success

Ranching has been a tradition in northern New Mexico for almost 250 years. Several generations have grazed their cattle near the Rio Gallinas whose headwaters drain the French Mesa watershed. Over time, the watershed and its waters have gradually changed. Springs that once flowed year-round now only have water after a rain or snowmelt because of the combined effect of continuous livestock grazing and other traditional land use management techniques. Trees and shrubs and tall bunch grasses once lined, stabilized, and shaded the banks of riparian areas. These areas now only support sod-bound grasses. Amphibians, reptiles, and upland game species have declined due to loss of habitat (cover and food and water sources). This area, which once was a wet meadow that seeped year-round, is now a network of gullies and headcuts that transport sand and silt-laden water to the river each time it rains. "Large amounts of sediment have been delivered to the Rio Gallinas from French Mesa as a result of grazing practices over the past 80 years," according to both Bruce Sims, hydrologist for the Santa Fe National Forest, and Brian Wirtz of the New Mexico Environment Department (NMED).

The ranchers with grazing allotments on French Mesa (part of the Coyote Ranger District in the Santa Fe National Forest) could not remember when the watershed had been any different than it was currently; so it was very hard for them to see that the traditional method of cattle grazing (allowing continuous access to all pastures and riparian areas) had caused any damage. It was even harder for them to see any advantage in changing that system, especially if it might cost them money or might not work.

Marcello Martinez and Roberto Martinez, range conservationists for the USFS, requested a watershed inventory and needs survey, which they began to implement in 1989. During that summer, five earth dams were constructed that provided additional water sources for cattle, thus raising the water table. (They also acted as sediment traps.) Martinez believed that with water established where there had been none in recent memory, the permittees or ranchers would then be more receptive to other changes such as adopting rest-rotation grazing management systems. He was correct.

New Grazing System Tried

During the next year, an unusually dry one even by New Mexico standards, ranchers on French Mesa adopted rest-rotation grazing management systems with the help of three miles of electric fence paid for by the Forest Service. The key to success of the new system was establishing trust and communication between the permittees and the Forest Service so that these methods (which had been very successful in other areas) could be tried by these very traditional northern New Mexico ranchers. Knowing that the original cooperators took (from the permittee's perspective) both a monetary and social risk, the USFS worked very closely with the ranchers in designing and operating the grazing systems. The permittees were encouraged to take part in deciding when to rotate pastures. Building upon the ranching skills of the permittees and the watershed management skills of USFS personnel, both groups gained practical experience in managing for a healthier ecosystem.

The results have been dramatic. Sediment yield from the watershed has been drastically reduced. Sagebrush (an invader species indicative of poor quality range) is dying off up to 300 feet from the water's edge, a clear indication of the rising water table. Water seeping from the newly saturated alluvial soils and around or under the structures has created a permanent trickle in the arroyo. Additionally, cattlemen have noticed an increase in the weight of their cattle going to market and a healthier and heavier calf crop. Other permittees on other grazing allotments "are lining up" according to Martinez, to implement similar allotment management plans.

Brian Wirtz of NMED made this comment for NEWS-NOTES:

We are cooperating on a number of watershed projects with the USFS throughout the state. On some, we are providing water quality monitoring support to measure the effectiveness of BMPs installed by the USFS. Although we are not taking water samples on the French Mesa watershed project, we are using photographs and visual observations as well as the terrestrial ecosystem survey work of the USFS to see where else we can try this. Both the USFS and NMED are excited about the success of this project. We believe that the long-term results of this project will be the re-creation of the original wet meadow ecosystem that existed in the watershed before cattle grazing began. This project should show us the critical role that proper grazing systems play in total watershed management.

Also in New Mexico: Public Agencies/Citizens Join Hands to Form Riparian Council

Many people in New Mexico have been concerned about riparian areas for a number of years but had never joined together to share their interests and take action. About three years ago, riparian area management was the topic for a New Mexico State University wildlife management short course. During this time, instructors and attendees began to discuss the possibility of forming an organization focused on riparian areas in New Mexico. Russ LaFayette (U.S. Forest Service), Andy Dimas (U.S. Bureau of Land Management), and Bruce Morrison (NM Game and Fish) formed a steering committee together with a private land rancher, a representative from key timber interests, a well-known author of fishing books, a retired SCS plant materials specialist, a representative from the State Foresters Office, and a member of the New Mexico Range Improvement Task Force. Each had many ideas and contacts. Interest began to develop statewide.

On September 19, 1991, over 60 people attended the first charter meeting of the newly formed New Mexico chapter of the Riparian Council (NMRC). Groups as diverse as the New Mexico Nature Conservancy and the New Mexico Cattle Growers Association mixed and mingled with private citizens and state and federal agency employees and discussed many of their concerns. That night the council elected officers, adopted by-laws, formed committees, and delineated goals and objectives for the council. The stated goal of the NMRC is simple: "To promote the enhancement of riparian areas, including wetlands, in New Mexico."

Committee Structure

Most of the real work will be performed by committees of NMRC members. Six committees currently exist for: information and awareness, research and monitoring, facilitation of volunteer programs, advising agency and interest groups, recognizing outstanding achievements, and workshops and symposia. The council has several cooperative projects in the works: a state rivers assessment, a state riparian classification and mapping project, co-hosting a western riparian conference dealing with the management of mixed land ownerships, and a series of field trips to various riparian areas in New Mexico. The council plans to work with the New Mexico chapter of the Soil and Water Conservation Society to host the "First New Mexico Riparian Conference: A Call to Action," which conference organizers hope will set the stage for riparian activities in the state for coming years. (Watch the DATEBOOK section of future *News-Notes* for details on the conference.)

When asked why he thinks such a diverse group can come together successfully on the many issues concerning riparian management, Russ LaFayette, president of the New Mexico Council (and a USFS employee) states, "We are all interested in the enhancement of the state's riparian areas, making them better and more productive for many uses and values. The attitude the council takes on issues will prove critical to the success of this effort. We are not interested in blaming any entity, occupation, or enterprise for the current condition of riparian areas in New Mexico. We all share the blame. We are now focused on looking forward and working together to make these areas better regardless of ownership or use. Council membership is open to anyone sharing these views and goals."

David Coss of the Surface Water Bureau, New Mexico Environment Department, believes "the Council will be a real help in controlling nonpoint source pollution in our state. Any time we can keep the riparian area intact, or restore it, the ecosystem benefits. We support the council's efforts. The riparian classification study can help the department set riparian standards which we can use when evaluating an application for a 'fill' action under Section 404 of the Clean Water Act."

Riparian Restoration

The New Mexico Riparian Council is just getting started, but they have long-term plans. Sid Goodloe, a rancher in south-central New Mexico and council member, believes, "We are talking about a lifetime of effort when we talk about riparian restoration. We can focus on the riparian area, but we have to look at the whole watershed too because, as soon as we get vegetation back in the riparian zone, we must have adequate water available to maintain it through dry years. Watersheds in the west have changed so greatly over the past 150 years;

they are now only producing a fraction of the surface and subsurface water they are capable of producing because invading brush species populations have exploded. This has occurred as a direct result of two important factors: the widespread suppression of all fire (which kills invading seedlings before they can out compete range grasses) and year-long, continuous grazing practiced at the turn of the century (which weakens healthy grasses and allows competing species to take over). As we restore our lost riparian areas, we must also restore our watersheds. It is going to take a while to return some of this land back to its climax condition; but, when we do, our grandchildren will have the privilege of seeing parts of this country the way it once was, and it will be worth it."

Not coincidentally, the council's first field trip was to a BLM grazing allotment currently using holistic resource management methods to enhance riparian areas on the allotment and to view research work being conducted by the University of New Mexico on the Sevietta National Wildlife Refuge. A poster from the New Mexico Museum of Natural History's permanent riparian ecosystem exhibit (co-sponsored by the U.S. Forest Service Region 3) sums up the special relationship New Mexicans have with their water in its title: "Arid Lands Sacred Waters." The NMRC has members with diverse backgrounds and diverse perspectives who share a common interest in the conservation of these fragile ecosystem in New Mexico's harsh and arid environment.

[For more information on the Council, write: New Mexico Riparian Council, P.O. Box 22538, Coronado Station, Santa Fe, NM 87502. Annual memberships are \$10.]

Sierra Club Legal Defense Fund Writes to Forest Service Re: Inadequate Salmonid Fisheries Habitat Protection

Citing significant recent studies on the decline of salmonids and the degradation of stream habitat in western watersheds, the Sierra Club Legal Defense Fund, wrote to the U.S. Forest Service "to demand immediate action by the U.S. Forest Service . . . to protect salmonid fishes and fish habitat on Forest Service lands." Given the new study results, the Fund, in its April 2 "notice of intent" letter, said that these actions were required by law under the provisions of the National Forest Management Act (NFMA) and the National Environmental Policy Act (NEPA).

Among the studies in Washington, Oregon, Idaho, and California, the letter cited the congressionally-convened Scientific Panel on Late Successional Forest Ecosystems¹ "... which identified 90 sensitive stocks or species of anadromous and non-anadromous fish whose decline is related in large part to habitat degradation in the so-called spotted owl forests."

The letter expanded on this point:

Significantly, the Scientific Panel only reviewed national forests in the Klamath Mountains of California and on the west side of the Cascade crest in Oregon and Washington. Taking into account forests of these mountains, but within the Columbia River, Snake River, and Pacific coast drainages, reveals an even greater number of sensitive salmonid stocks and species that are threatened primarily by man-made habitat degradation. While the Forest Service's northern spotted owl management guidelines will provide some additional protection for late successional ecosystems and their associated watersheds in the spotted owl forests, the Service has no process in place that will result in needed changes in the management of other forests in the Columbia, Snake, and Pacific coast drainages. Thus, the agency is even less likely to maintain viable salmonid populations in those forests than in the westside forests.

The Scientific Panel's watershed protection option drew upon a growing body of evidence that existing Forest Service land management practices have degraded anadromous and nonanadromous fish habitat throughout the Pacific Northwest.

The letter emphasized the importance of the cumulative effects of forestry on aquatic life. It stressed the need for watershed level planning as a matter of scientific and legal necessity, instead of the present practice of dealing with environmental matters on a project (timber sale) basis, commenting

... the Forest Service must now address the problems of salmonid habitat and population viability at the regional level. Indirect and cumulative impacts on stream conditions and fish

¹ The letter had a footnote at this point stating: "The . . . Scientific Panel included as one of its four members Jack Ward Thomas, chief research biologist at the Forest Service's Pacific Northwest Research Station. Most of the analysis of watershed and fish habitat issues apparently was prepared by James Sedell and Gordon Reeves, Forest Service scientists at the Pacific Northwest Research Station."

viability cannot be properly assessed on an individual project basis. Because of the downstream movement of these impacts and their persistence over long periods of time, meaningful analysis can only occur at the watershed or higher level, where the potential effects of all land management activities in a watershed can be compiled and examined with reference to existing conditions in the watershed.

The Fund then cited testimony by Paul Brouha, executive director of the American Fisheries Society, before Congress:

Watershed-scale planning and environmental analysis currently occurs at the project level where little of practical value can be done about arbitrarily high allowable (timber - eds) sale quantities that don't take into account inadequate slope stability inventory and a lack of biological data about declining fish populations. At the project level, decisions about watershed impacts and biological diversity are routinely dismissed as being beyond the scope of analysis. The result of such inadequate watershed planning is predictable—there will be continued incremental degradation of fish habitat from forest management practices which . . . will cumulatively contribute to the decline and extinction of native fishes over vast portions of their range.

The letter calls for the promulgation of codified regional regulations or amendment of pertinent regional guides:

. . . to provide concrete standards and guidelines for the conservation and recovery of salmonid habitat. At a minimum these guidelines must include:

- 1. Identification of no-harvest riparian-zone buffers for perennial and intermittent streams;*
- 2. Extended harvest rotations in key fish-bearing watersheds;*
- 3. Standards for construction, rehabilitation, and removal of new and existing roads;*
- 4. Prohibitions on entries into existing roadless areas;*
- 5. Exclusion of livestock from riparian areas; and*
- 6. Additional necessary restrictions on logging, grazing and other extractive uses.*

In addition, the regions should re-examine the assumptions currently common to all forest plans regarding dispersion as a technique for minimizing environmental degradation, the efficacy of best management practices in satisfying fish habitat objectives, the use of instream structures as mitigation for loss of fish habitat, and the process of identifying lands unsuitable for timber harvest. Failure to revise these assumptions in accordance with the best and most recent scientific information will inevitably fuel the continuing decline of wild salmonids in the Pacific Northwest.

The letter concludes,

. . . if the Forest Service does not make substantial progress toward amendment of the Regional Guides or the agency land management regulations within 90 days of receipt of this letter . . . (we) will take all legal steps necessary, including litigation, to ensure prompt and effective attention to the problems of Pacific Northwest salmonid and watershed protection.

The letter was filed on behalf of the Independent Troll Fishermen of Oregon, the United Anglers of California, Friends of the River, the Wilderness Society, and the Oregon Rivers Council and was sent the Forest Service's Regional Foresters in Region 1, Missoula, MT; Region 4, Ogden, UT; Region 5, San Francisco, CA; and Region 6, Portland, OR.

[For further information, contact: Victor M. Sher or Adam J. Berger, Sierra Club Legal Defense Fund, Inc., 203 Hoge Building, 705 Second Avenue, Seattle, WA, 98104-1711. Phone: (206) 345-7540. FAX: (206) 345-1526.]

OTA Suggests Ways to Improve Forest Service Planning and Management

In March 1992 the congressional Office of Technology Assessment (OTA) released a report on ways that Congress could improve national forest management and planning. *Forest Service Planning: Accommodating Uses, Producing Outputs, and Sustaining Ecosystems* is the second of two OTA reports on Forest Service planning. It reviews the National Forest Management Act (NFMA) of 1976. OTA released the first report, *Forest Service Planning: Setting Strategic Direction under RPA*, in July 1990.

OTA identifies four major findings in its most recent report:

- (1) Outputs are emphasized over sustaining forest ecosystems.
- (2) Monitoring of outputs and conditions is inadequate.
- (3) Budget requests by resource do not match integrated forest plans.
- (4) National targets can override local decisions.

OTA points out that current Forest Service management focuses on producing physical outputs — especially timber — with relatively little attention to sustaining ecosystems. The Multiple-Use Sustained Yield Act of 1960, NFMA, and FORPLAN (the planning technology the Forest Service chose as its principal analytical tool) emphasize timber and other physical outputs. Forest plan implementation, budgeting, and national direction also emphasize the quantitative, physical outputs of the national forests. OTA says Congress could change the laws to recognize other values of national forests, protect the ecosystems, and improve public participation in forest planning.

OTA finds that, despite the enormous investment of Forest Service and public time and effort in national forest planning, monitoring has been inadequate to determine whether the plans are being implemented. The inadequate monitoring results from an inadequate database and from the lack of incentives to monitor, according to OTA. It is difficult to monitor changes in forest ecosystem conditions without baseline information on present conditions, and the Forest Service reward system for managers does not encourage monitoring. OTA says that Congress could establish monitoring as a distinct Forest Service responsibility. Congress could then require an annual monitoring report, prepared by an interdisciplinary team, with specific requirements and public participation.

The third OTA finding is that the annual Forest Service budget request and appropriations from Congress do not match the budget levels assumed in national forest planning. Congressionally enacted appropriations and output targets can easily negate the direction set in the approved forest plans. OTA also notes the numerous special accounts (funded by timber sales) and county payments (based on timber revenues de facto) emphasize timber production over resource management. Congress could, according to OTA, replace the resource-oriented appropriations (which encourage the Administration and Congress to specify output targets, especially for timber) with management-oriented appropriations that are necessary for administration the multi-purpose national forests — planning, implementation, and monitoring. Congress could also compensate counties fairly and consistently for the tax-exempt status of national forest lands, with less dependence upon timber sales as a basis for payment.

Finally, OTA finds that the national direction established under the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 can override local forest planning efforts because the RPA programs have set controllable targets only for timber outputs from the national forests. Thus, the Forest Service emphasizes the National Forest System — at the expense of research and assistance to other forest owners — even though the System contains less than 20 percent of U.S. timberland. The Forest Service also emphasizes timber — at the expense of other resources — because of the lack of adequate measures for establishing targets and monitoring results for other resource outputs and conditions. OTA says Congress could modify RPA to give more emphasis to the broader values of national forests to the American people.

The OTA report was requested by the Senate Committee on Agriculture, Nutrition, and Forestry and its Subcommittee on Forests, Family Farms, and Energy; and the House Interior and Insular Affairs Committee on National Parks and Public Lands.

[Copies of the 206-page OTA report for non-congressional use can be ordered from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington D.C. 20402-9325. Phone: (202) 783-3238. The GPO stock number for the report is 052-003-01264-2; the price is \$10.00.]

Notes on NPS Technology

Virginia Develops Watershed Targeting Process

EDITOR'S NOTE: This article was submitted by Stuart Wilson, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.

The Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation (DSWC) and the USDA SCS, with the cooperation of other nonpoint source implementation agencies, are proceeding with statewide hydrologic unit planning by identifying NPS water quality problems within individual watershed areas.

Hydrologic unit planning is a process for identifying and targeting problems, needs, and solutions on a watershed basis. A watershed is a defined land area drained by a river/stream or system of connecting rivers/streams such that all water within the area flows through a single outlet. In water quality assessment, where all pollutant movement is governed by naturally occurring systems, hydrologic units are much more appropriate planning units than political boundaries.

County-level Maps Produced

To assist in the hydrologic unit planning effort, 491 individual watershed units were manually delineated in a cooperative effort between the DSWC and SCS with contractual support from Information Support Systems Laboratory (ISSL), Department of Agricultural Engineering at Virginia Tech. The boundaries of the 491 watersheds, as well as a statewide set of political boundaries, roads, and streams, have been incorporated into the Virginia Geographic Information System (VirGIS) digital natural resource database. The digital data has been used to produce county-level hydrologic unit maps at a scale of 1 inch = 2 miles.

The county-level hydrologic unit maps have been used by DSWC, SCS and Soil and Water Conservation District field personnel to identify and collect important natural resource information by hydrologic unit. These data include information on land use, livestock and poultry, erosion rates, acres of disturbed land, and sludge and fertilizer use within each individual watershed. Water quality monitoring data from the State Water Control Board is also being used to evaluate watersheds for known water quality problems. Other data, such as water supply and endangered species information, have also been obtained and assigned to hydrologic units.

Priority Watersheds Targeted

DSWC has used the data to plan hydrologic units by identifying and prioritizing NPS problems within individual watershed areas statewide. Cooperating agencies and organizations are working to implement programs to correct natural resource problems and direct resources and funds to these targeted priority watersheds. As programs are implemented, resource improvements and other benefits will be assessed to determine the effectiveness of the hydrologic unit planning and implementation efforts.

[A paper has recently been completed describing the hydrologic unit planning process. It may be obtained by contacting Stuart Wilson, NPS Program Coordinator, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 203 Governor Street, Suite 206, Richmond, VA 23219-2094. Phone: (804) 786-4382.]

Lemna Technology To Be Tested as NPS Treatment

EDITOR'S NOTE: This article is based on one by Russell N. Clayshulte of the Denver Regional Council of Governments. It appeared in the December 1991 *Colorado Conservator*.

Tiny floating plants may be an economical and efficient answer to nonpoint source nutrients in the Chatfield Reservoir just outside of Denver, CO. A project underway by the Denver Regional Council of Governments, the Chatfield Basin Authority, and the LEMNA Corporation will evaluate the use of duckweed, or *Lemna*, in nutrient removal under the various hydrologic loading conditions of Chatfield Basin.

The technology to harness the growth and assimilation potential of duckweed has been applied to wastewater treatment of domestic and industrial wastes. This demonstration project is one of the first to test this technology as a nonpoint source control. Denver's semi-arid conditions make it difficult to extrapolate the results from other locations.

In the Chatfield Basin project, a small tributary, Plum Creek, will be the project site. The actual structure will take up only about half an acre. It consists of an in-stream floating cell system that keeps the small plants evenly distributed on the water's surface. An on-shore unit controls nutrient circulation, and a mobile harvester that can be used on multiple sites inoculates, distributes, and harvests plants.

The patented system has several advantages over more conventional BMPs, according to the project description. It lists the use of marginal quality land sites, low maintenance and energy requirements, odor reduction, and the use of locally available plants as assets. In addition, it requires little training to operate.

Lemna are some of the fastest growing plants on earth and can double their weight in less than 18 hours. In studies and in wastewater and industrial treatment facilities, *Lemna* has proven capable of removing large quantities of nutrients and pollutants from water, as well as reducing metals, BOD, and TSS.

The plants, when harvested, have typical protein contents of 35 to 50 percent, and the typical yield on a per acre basis is 15 times that of soybeans. The harvested plants have been used as livestock feed, and the project will investigate local markets and disposal options.

Chatfield Reservoir has been identified as a eutrophic waterbody that is not meeting its beneficial uses as defined by the Water Quality Control Commission. The eutrophication is both natural and human-caused, the latter due primarily to development within the basin. The pollutant sources, particularly phosphorus, are a mix of point and nonpoint sources carried in streams and rivers to the reservoir.

The LEMNA BMP is one of many that will be used to reduce phosphorus loading to the reservoir. Nonstructural controls are also being implemented, among them the adoption of erosion control ordinances by local governments. The Chatfield Basin Authority will require new development within its perimeters to use on-site control measures and practices to reduce erosion and improve the quality of runoff.

The project, slated to begin this summer, is projected to cost \$168,000. An EPA 319 grant, LEMNA Corporation, DRCOG, and the Chatfield Basin Authority are contributing funds and in-kind matches. Monitoring is, of course, an integral part of the project. It will extend into 1993.

Commenting on the area's need to explore new nonpoint source control technology, Russell N. Clayshulte of DRCOG said,

In order for the basin to continue growth in the next 10 years, nonpoint source controls will be required to reduce the total phosphorus load by 50 percent. Can the LEMNA system meet a part of this need? On paper, yes. In reality—we don't know. The LEMNA project is designed to answer this question. If the technology proves itself, the Chatfield Basin Authority will have an affordable BMP that will allow the basin to grow.

[For more information, contact: Russell N. Clayshulte, Principal Water Resources Planner, Denver Regional Council of Governments, 2480 W. 26th Ave., Ste. 200-B, Denver, CO 80211-5580.]

A Current Assessment of Urban Best Management Practices: Techniques for Reducing Nonpoint Source Pollution in the Coastal Zone

This recent, March 1992, publication from the Metropolitan Washington Council of Governments (WASHCOG) provides a comparative evaluation of commonly used structural BMPs for the control of urban stormwater quality in the coastal zone. The document, which is formatted as a collection of fact sheets, is well organized and covers 11 of the most prevalent BMPs. Geared toward planners, program managers, and engineers, the manual is easy to use and will be useful as a basic reference for BMP selection.

A decade ago, little information was available on BMP design, performance, cost, and siting. Because of widespread implementation of stormwater BMPs during this period, limited data are now available about effective designs, selection criteria, and operation and maintenance concerns. The authors have concisely summarized this information and have also identified areas where additional research is needed to help refine these BMPs and ascertain actual pollutant removal rates.

The review of BMP performance data clearly reveals the subjective nature and the inconsistent pollutant removal performance of these BMPs. Recognizing the evolving status of water quality BMP design, the authors have provided useful hints on how to increase the long-term pollutant removal potential of these devices and recommendations on when and where each BMP is most appropriate.

One other inclusion that merits attention is the information on the environmental consequences associated with the use and placement of BMPs. Environmental concerns and benefits have become important considerations in the selection and design of BMPs, especially for extended detention wet ponds and constructed wetlands. Issues such as the provision of habitat amenities and potential groundwater impacts are listed under each BMP.

Copies, at \$30.00 each (*make checks payable to "MWCOG"*), can be ordered from:
Information Center
Metropolitan Washington Council of Governments
777 North Capital Street, N.E., Suite 300
Washington, D.C. 20002-4201
Phone: (202) 962-3200

EDITOR'S NOTE: While these BMPs are ostensibly for use in the coastal zone, they have broad applicability, except where regional factors, such as climate, may limit the use of specific BMPs.

Agricultural Notes

The Organization for Economic Cooperation Holds a Workshop on Sustainable Agriculture in Europe

Delegates from 23 nations met in Paris for three days last February to discuss sustainable agriculture. The summary report entitled *Agents For Change*, was forwarded to *News-Notes* by Rebecca Hanmer, EPA's former assistant administrator for water, now the head of the Pollution Prevention and Control Division, Environment Directorate of the Organization for Economic Cooperation and Development in Paris. The agency organized and sponsored the workshop.

Ms. Hanmer indicated in her letter that "the focus of discussions was multi-media, and at least some information was presented on most of the agricultural topics of concern. The workshop was a hopeful one in that considerable evidence was presented that underlined the possibilities for *economic* sustainability of low input and even organic agriculture as well as the environmental benefits."

Central Findings

The report listed central findings as including:

■ *OECD countries are concerned about the degree to which agriculture is contributing to environmental problems, particularly water and air pollution, land degradation, and a decline in landscape amenities and biodiversity. Using a range of management and technical options which optimize input efficiency and minimize environmental impacts, farmers can sustain and enhance environmental quality.*

■ *Workshop participants recognized the wide diversity of more environmentally sustainable agriculture systems already in place or which are gradually emerging. Sustainable agriculture is not a concretely defined set of management strategies and technology, but rather an approach which targets the enhancement of natural processes, a reduction of production costs related to synthetic inputs, sustained and efficient production of agricultural products, and a reduction of human health and environmental impacts of production techniques. The workshop was a watershed event in that the discussion was clearly framed within the context of this diversity and flexibility and markedly moved beyond the antagonistic, overly simplified paradigm which has often pitted industrial agriculture against organic systems. The new paradigm recognizes that information, technology and equipment, and management skills drawn from a range of systems will provide the foundation for the farming practices of the future that by necessity will be increasingly sensitive to all on-farm and off-farm ecological, environmental, and human health impacts.*

■ *It is a central finding of the OECD workshop that environmentally and economically viable alternative agriculture systems can be, and have been, achieved. . . Participants were advised that adoption of systems which were less dependent on chemical inputs did not mean a return to low-technology farming and the associated risk of insufficient food production. Indeed, many currently successful sustainable systems rely on systems management, which is information- and technology-intensive.*

What is Sustainable Agriculture?

Within the context of OECD discussions, it is inappropriate and misleading to impose a rigid definition of sustainable agriculture. Countries and even regions within the same country work within different social, economic, and environmental contexts; consequently, some countries currently consider only air, soil, and water protection, while others also include flora and fauna, landscape amenity, energy, and climate change when assessing the impacts of agriculture and environmental objectives. Nevertheless, within the diversity of objectives that countries set for agriculture and the environment, there is an emerging consensus that sustainable forms of agriculture are characterized by the adoption of practices and technologies that

- *use integrated management techniques which maintain ecological integrity both on and off the farm,*
- *are necessarily site-specific and flexible,*
- *preserve biodiversity, landscape amenity, and other public goods not valued by existing markets,*
- *are profitable to producers in the long term, and*
- *are economically efficient from a societal perspective.*

Conclusions

The workshop fully examined the “challenges”, “technical opportunities,” and “the barriers to the adoption of more sustainable agriculture technologies and practices” and outlined “significant policy opportunities” before arriving at this conclusion:

It is imperative that the transition towards sustainable agriculture take account of the need to maintain an economically efficient and competitive agricultural sector that is responsive to changing consumer preferences and that facilitates the development of market-oriented trade, while preserving the environment and the resource base into the future. These sometimes conflicting objectives will form a major part of the policy agenda in the future.

EDITOR'S NOTE: Rebecca Hanmer has informed us that they will be producing a followup workshop report this summer that will contain a summary of the technical information presented to the workshop. We will advise *News-Notes* readers when this becomes available. In the meantime, we have reproduced *Agents For Change*, the summary report for the February OECD workshop. To obtain a copy fill out THE COUPON on page 27 and send it in. We will send a copy to you.

In Iowa, Sustainable Ag Report Shows Nitrogen Efficiency, Good Economics, Environmental Protection

New farm-tested research on sustainable agriculture is presented in an Iowa State University (ISU) Extension report.

The 1991 annual report for the Integrated Farm Management (IFM) Demonstration Program describes results from research and on-farm demonstrations designed to improve farm profits and protect water quality. As a part of the five-year program, ISU scientists conducted more than 200 demonstrations on farmers' fields and ISU research farms.

Researchers studied tillage, weed, water, nitrogen, and manure management, comparing conventional with alternative practices. In addition, ISU Extension worked directly with farmers and helped them use new management methods to trim their costs. These methods included field scouting, manure analysis, soil testing, record keeping, and less chemically intensive weed control.

“We found that farmers can save money, protect the environment, and maintain yields through improved farm management,” said agronomist Gerald Miller, ISU Extension program coordinator.

The IFM program, created by the 1987 Iowa Groundwater Protection Act, has reached most Iowa counties. It involved a number of state agencies. The Iowa Department of Agriculture and Land Stewardship administers the program in conjunction with ISU Extension and the ISU Agriculture Experiment Station.

The 78-page 1991 *Progress Report*, Pm-1467, can be ordered from Extension Publications Distribution, Printing Building, Iowa State University, Ames, IA 50011. Phone: (515)294-5247. Cost is \$2. Reports from four previous years also are available.

[For more information, contact: Gerald Miller, Water Quality Coordinator, 2104 Agronomy Hall, Iowa State University, Ames, IA 50011. Phone: (515) 294-1923; or Marilyn Vaughan, Extension Communication Specialist, University Extension, Iowa State University, 112 Morrill Hall, Ames, IA 50011. Phone: (515) 294-0701. FAX (515) 294-9748.]

Also in Iowa: Sustainable Agriculture Electronic Bulletin Board Developed by Leopold Center

For the second year, Iowans wanting to know more about sustainable agriculture and what's going on can find out on a statewide computer network.

Iowa State University Extension and the Leopold Center for sustainable agriculture are making the electronic bulletin board note file available to farmers and other Iowans seeking information about sustainable agriculture field days, tours, workshops, conferences, and other educational activities.

The note file for sustainable agriculture events, found on Extension's EXNET computer network, can be accessed by anyone with a computer and a modem.

In the program's first year, over 100 events were publicized through the network, which was accessed an estimated 200 times. Listings include programs of Extension, the Leopold Center, the University of Iowa, USDA Soil Conservation Service, Practical Farmers of Iowa, and other agencies and nonprofit organizations.

"This is an attempt to make programs easily accessible to farmers and others interested in sustainable agriculture," says Jerry DeWitt, director for Agriculture Extension. "It allows organizations in Iowa to work together on educational programs and to be fully informed of upcoming events."

According to Leopold Center Educational Coordinator Rich Pirog, "The listing offers an opportunity to improve coordination of educational events and helps organization share ideas and resources."

[For more information on how to access the listing or how to place events on the network, contact: Rich Pirog at (515) 294-1854; or Jerry DeWitt at (515) 294-7801.]

USDA Calls for Project Proposals for FY 93 Water Quality Incentive Projects

Based on a presidential budget request for FY 1993 of \$10 million for funding the 1990 Farm Bill's Water Quality Incentive Projects (WQIP), the Agricultural Stabilization and Conservation Service (ASCS) has issued its guidelines calling for project proposals. Proposals, to be submitted by state ASCS offices, are limited to three per state and are

... to achieve the source reduction of nonpoint source agricultural pollutants in an environmentally and economically sound manner by providing agricultural producers with the necessary financial, educational, and technical assistance required to make changes in management systems to

- *restore or enhance impaired water resources where agricultural nonpoint source pollution has a detrimental effect; and*
- *prevent future impairments.*

For FY 1992, with a congressional appropriation of \$6.75 million, WQIPs were implemented in existing Water Quality Demonstration Projects (DEMOS), Hydrologic Unit Areas (HUAs), or 1991 ACP Water Quality Special Projects (WQSPs). In FY 1993, eligible areas for WQIP implementation have expanded considerably to include areas identified in state §319 plans, areas with shallow karst-topography, and others.

Maximum project size for a 1993 WQIP is 50,000 acres, except for projects for watersheds comprised of predominately rangeland, forestland, or both, where the maximum may be up to 100,000 acres.

For WQIP, only the Agricultural Conservation Program practice "WQP1," Source Reduction of Agriculture Pollutants, is eligible. WQP1 includes a number of technical, management-oriented practices such as integrated crop management, field scouting, and conservation cropping systems. No financial assistance is provided for the installation of structural measures.

There are broad requirements for interagency coordination of project proposals, including state water quality agencies. Each WQIP will be limited to a \$250,000 USDA allocation, although supplementary funding from private or other governmental sources, including \$319, are encouraged.

Project monitoring is termed as valuable and desirable, but it is not required. Applications must be filed no later than August 28, 1992.

[For further information, contact: Anne Weinberg, Nonpoint Source Control Branch (WH-553), U.S. EPA, 401 M Street, SW, Washington DC, 20460. Phone: (202) 260-7107. Or, Mike Linsenbigler, USDA-ASCS-CEPD, P.O. Box 2415, Washington, DC 20013. Phone: (202) 690-0224.]

Notes on Environmental Education

Rivers Project and Curriculum Give Students Hands-on Education

EDITOR'S NOTE: A great program for bringing the "real world" into the classroom has come to our attention, thanks to a timely communication from Cindy Bidlack of Southern Illinois University at Edwardsville. One hundred-eight schools in four states are involved in an interdisciplinary program called *the Rivers Project*. For a similar program see *News-Notes* #19, March 1992, page 8.

Southern Illinois University at Edwardsville has received \$1 million grant from the National Science Foundation to develop a formal "Rivers Curriculum" in the areas of biology, chemistry, geology, geography, and language arts. Dr. Robert Williams will head the project, which will be applicable to the study of any river in the world.

The curriculum is an outgrowth of another project, the Illinois Rivers Project, which started in 1990 with a grant from the Illinois Scientific Literacy Program. Its primary goal was to enhance students' scientific literacy. Eight schools participated in the pilot project, collecting and analyzing water samples from various test sites along the Mississippi and the lower Illinois rivers. The study of the rivers was later extended to include historical, social, and economic implications of the state of the rivers, thus involving students from classes across the curricular areas of science, social studies, and language arts.

Rivers Project Continues to Grow

In January 1991, funding from the U.S. Fish and Wildlife Service allowed participants from 13 schools in Iowa, Minnesota, and Wisconsin into the project under the title of the Midwestern Rivers Project. Later that year, 24 schools were added with funding from the Illinois State Board of Higher Education's Dwight D. Eisenhower Title II Program.

Rivers studied now include the Embarras, Kaskaskia, Pecatonica, Rock, Green, Des Plaines, Fox, and Wabash. The Illinois Department of Energy and Natural Resources and Illinois Bell have provided funding for the production of the project's student-authored publication, *Meanderings*.

River watchers are also located in Nebraska, Colorado, California, Washington, Missouri, Kentucky, and Ontario, Canada as a result of a two-day information/training session on the Rivers Project, part of the North American Environmental Education Association/Midwestern Environmental Education annual meeting. The training session was co-sponsored by St. Cloud State University and the Illinois Rivers Project.

Teachers involved in the Rivers Projects have become writers of the Rivers Curriculum. In the summer of 1991, a week-long writing session was held at Principia College at Elsah, Illinois, where, along with content specialists, teachers developed the formal curriculum. Content specialists in attendance included Rion Turley, a geology teacher at O'Fallon High School who published the "Geology Is" program disseminated through the National Diffusion Network.

Also in attendance was Craig Colton, a geography specialist with the Illinois State Museum. Biology consultants were Tom Keevin, a biologist with the U.S. Army Corps of Engineers, and Tanner Girard, a professor of biology at Principia College.

With the award from the National Science Foundation in December, the Rivers Curriculum was expanded. The expanded curriculum is being piloted this spring.

Education, Data Quality Both Important

Williams, project advisor for the Rivers Projects and the Rivers Curriculum, has emphasized that, while education is the primary goal of both programs, their success will be gauged by many people in terms of the quality of the data. He stressed that it is essential that all of the participating high schools follow the same sampling and testing techniques, particularly if comparisons are going to be made among data from different schools. It is important to establish a solid sampling and testing program. The quality of the data collected—its accuracy and reproducibility—is dependent on the quality of the sampling.

Nine water quality parameters, based on the National Sanitation Foundation Water Quality Index, are being tested: dissolved oxygen, fecal coliform bacteria, pH, biochemical oxygen demand, temperature, total phosphate, total nitrate, turbidity, and total solids.

The results of the water quality tests are entered into SOILED NET (Southern Illinois Education Network), a telecommunication network linking all of the participating schools with each other and with the project headquarters. The network also provides a technological framework for many of the project's activities. Results are then forwarded to the U.S. Fish and Wildlife Service Environmental Management Technical Center, where the data are made available to other schools and to state and federal agencies. SOILED NET is part of the larger Free Educational Electronic Mail Network (FrEd Mail Computer System), which is an electronic bulletin board network consisting of over 110 locally owned and operated systems across the country. The network also provides access to students working on water quality projects in Northern Europe and Australia.

Students Produce Two Publications

From their study of the river and surrounding communities, students produce reports, articles, essays, and creative writings. Student writings about the rivers are sent to SOILED NET for inclusion in *Meanderings*, a publication similar to the well-known and innovative *FoxFire* books that were done by high school students in Georgia. Because of the quantity of material written in the 1990-1991 school year, *Meanderings* was divided into separate regional sections. Publication is planned for August of this year.

Copies of *Meanderings* have been placed in each of the state libraries and the Library of Congress. Copies have also been placed in the St. Louis Mercantile Library, where they join other texts on the legends and lore of the rivers of the United States. In the course of producing this publication, students learn how to conduct an interview, do research in archives, and write political action papers. Many are inspired to write poetry.

The project newsletter, *River Watchers' Log*, provides yet another opportunity for students to have their work published. Students are invited to submit articles for publication in the newsletter. The *Rivers Watchers' Log* keeps its subscribers updated on the latest project news in addition to providing pertinent environmental information.

Enthusiastic Response to Student Congresses

The project has held two student congresses, where students shared ideas and experiences they gained from working on the project. At the latest congress, more than 400 students from 52 schools gave presentations. Topics ranged from the scientific (water quality data) to the historic (slide presentations of local history) and the creative (original music and puppet shows). One school presented a display consisting of 28 different species of fish.

The Rivers Project has joined the Illinois Natural History Survey and the Water Resources Center at the University of Illinois in the Zebra Mussel Watch project. The Illinois-Indiana Sea Grant Program provided money to construct two zebra mussel monitoring traps for each participating school. Over 250 devices are now monitoring the mussel's encroachment upon midwestern waters.

A training session for teachers from other states who are interested in rivers will be held in August 1993. The project would like to start networking with other interested teachers during the 1992-93 school year.

Award-winning Projects

The Soil and Water Conservation Society presented the project with state and national merit awards for its efforts to increase the scientific literacy of high school students through river study. The project was one of 11 receiving a national merit award for conservation during 1990.

The Illinois Department of Conservation presented the project with one of its "Take Pride In America" awards, and the Illinois Rivers' Project has also won a national "Take Pride in America" award from the Department of Interior.

According to Project Coordinator Cindy Bidlack, teachers are enthusiastic about this project because they enjoy the interdisciplinary aspects. Students report that they are seeing long-familiar rivers in a new light. They find the project a worthy outlet for their desire to be active for the environment, and they are becoming informed for their future role as voters.

[For more information, contact: Cindy Bidlack, Project Coordinator, SIUE Box 2222, Edwardsville, IL 62026. Phone: (618) 692-3788. Fax: (618) 692-3359. Copies of Meanderings are available for \$12.00 each.]

NPS Electronic Bulletin Board (BBS) News

How To Get On The BBS

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

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

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

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

Announcements of Interest

Agricultural Program Position Available At EPA in California

■ **Duties:** EPA's Region IX, San Francisco, Water Quality Branch, is recruiting (on an IGS or IPA basis) a person with a knowledge of agricultural issues and institutions to work with the agricultural program manager to prepare workplan elements within the California Central Valley Agricultural Initiative.

This position entails:

- primary responsibility for specific program elements such as a pesticides pilot project and agricultural drains and canals habitat assessment,
- conducting complex policy and technical analyses for these elements,
- advising and assisting management in developing strategy, policy, and plans for solving agricultural pollution issues,
- working extensively with state agencies, other federal agencies, and members of the agricultural community to communicate EPA policies and program direction,
- representing EPA on selected policy and technical advisory committees related to water quality management and agriculture,

- participating in internal briefings and coordination of regional activities on agriculture, and
- overseeing grants and contracts.

Pay rate equivalent to Environmental Protection Specialist or Environmental Scientist at G-S 11/12 level.

■ *Contact:* Interested persons should contact: Linda Powell, phone: (415) 744-2017 and send SF-171 forms to: Personnel Office, Region 9, U.S. EPA, 75 Hawthorne Street, San Francisco, CA 94105. Attn: Announcement # R9-45-92.

■ *Deadline:* Applications must be received by July 20, 1992.

Video Aimed at Increasing Public Officials' Awareness of Urban/Construction Runoff

The Denver Regional Council of Governments (DRCOG) has just released a video focusing on how urban and construction runoff affect regional water quality. The 17-minute video is designed to increase public officials' awareness of nonpoint source pollution. DRCOG's Roy Clayshulte noted that the video has been presented to city councils, county commissions, planning commissions, utility councils, neighborhood associations, and special interest groups throughout the Denver metropolitan area. "The video points out that one of the biggest causes of nonpoint source pollution is simply a lack of information," Clayshulte said.

The video may be purchased for \$10 from DRCOG, Attn: Marie Mayorga, 2480 West 28th Ave., Suite 200B, Denver, CO 80211.

[For more information about the video, contact: Russell N. Clayshulte, Principal Water Resources Planner, DRCOG, 2480 West 28th Ave., Suite 200B, Denver, CO 80211. Phone: (303) 480-6766.]

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. Because of an irregular printing schedule, notices should be in our hands at least two months in advance to ensure timely publication. A more complete listing can be found on the NPS BBS.

Meetings and Events

1992

July

7-9

Workshop on Water Quality Standards/Criteria and Related Programs, Saratoga, NY. Contact: Michele Vuotto, Dynamac Corporation, 2275 Research Blvd., Suite 500, Rockville, MD 20850-3268. Sponsored by U.S. EPA's Office of Water, Office of Science and Technology. A block of rooms has been reserved at the Ramanda Renaissance. Single rooms are \$60. Make room reservation for "SASD Workshop" by calling (518) 584-4000 by June 15. Topics: proposed revisions to the WQS Regulation, interagency agreement with the U.S. FWS/Endangered Species Act, Fish Consumption Advisory database (demonstration), national criteria guidelines, contaminated sediment management and criteria. Also, setting site-specific criteria, developing biocriteria, inter-/intra-state issues in water quality standards, fish advisories/consumption, toxicology and risk assessment, national wildlife criteria program. The NPS BBS and its Fish Consumption Forum and database will be demonstrated at the workshop.

11-13

Texas Watch Volunteer Monitoring Conference, Corpus Christi, TX. Contact: Dave Buzan, Texas Watch, PO Box 13087, Austin, TX 78711-3087. Phone: (512) 463-8206. For volunteer monitors, educators, representatives from coastal cities. Teachers can earn AAT credit by attending workshops for Adopt-A-Wetland, Texas Watch, GREEN.

1992

July

- 19-22 *Annual Meeting of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA)*, Alexandria, VA. Contact: Roberta Savage, ASIWPCA, 750 First St., NE, Suite 910, Washington, DC 20002. Phone: (202) 898-0905. FAX: (202) 898-0929.
- 20-22 *Growing Into the 21st Century: 1992 Sustainable Agriculture Symposium*, Memphis, TN. Contact: NACD, 504 Capitol Court, NE, Washington, DC 20002. Phone: (202) 547-6223. Highlights food and fiber production systems that allow producers to safeguard the environment while remaining profitable. Sponsored by NACD and 36 other organizations and agencies.
- 20-24 *Workshop on Pesticide and Industrial Chemical Risk Analysis and Hazard Assessment (PIRANHA) Computer-assisted Analysis Technology*, Athens, GA. Contact: Joyce Wool, ASCE Corp., USEPA-ERL, College Station Rd., Athens, GA 30613-0801. Phone: (404) 546-3210. FAX: (404) 546-3340. Sponsored by U.S. EPA, Center for Exposure Assessment Modeling, University of Georgia Center for Continuing Education.
- 23 *12th Milan No-Till Field Day*, Milan, TN. Contact: John Bradley, Superintendent, Milan Experiment Station, 205 Ellington Dr., Milan, TN 38358. Phone: (901) 686-7362. The largest event of its kind. In 1991, 6,000 people from 31 states and 16 countries attended. Features tours, demonstrations, research reports, educational booths, and equipment displays.

August

- 2-5 *Water Forum '92: Saving A Threatened Resource*, Baltimore, MD. Contact: ASCE Conference Dept, 345 E. 47 St, New York, NY 10017. Phone: (800) 548-ASCE.
- 2-5 *Conservation in a Changing Society: A Golden Opportunity*. 1992 NACD Northeast Regional Meeting, Wheeling, WV. Contact: NACD Northeast Region Office. Phone: (413) 585-8895. Sponsored by NACD and the WV Soil and Water Conservation Supervisor's Association. Pre-registration before 7/17, \$55; after 7/17, \$75. Rooms, meals additional. Rooms at the conference site at Oglebay Park available; call (800) 624-6988. Topics include: watershed management, water quality, forestry, farmland protection, district partnerships, coastal zone management, dry hydrants, local needs, and streambank stabilization. Tours will show local conservation, history and culture, and flood control.
- 9-12 *Resource Management in a Dynamic World: 47th Annual Meeting of the Soil and Water Conservation Society*, Baltimore, MD. Contact: Tony Vrana/Tim Kautza, SWCS, 7515 Northeast Ankeny Rd., Ankeny, IA 50021-9764. Phone: (515) 289-2331. Emphasizes the role human resources play in using and managing natural resources. Three sub-themes are: environmental values, economics, and policy.
- 31-9/2 *National Irrigation-induced Erosion and Water Quality Conference*, Boise, ID. Contact: William Carmack, USDA-SCS, South Ag Building, 14th and Independence Ave., SW, Washington, DC 20013. Phone: (202) 720-6037. FAX: (202) 720-0428. Papers and posters invited. Details available late May. Topics: water rights; legislation, policy, technical assistance, financial assistance, research and technology transfer needs; sociological barriers; cost-benefit; impact and treatment of irrigation return flow; impacts on fisheries, recreation; and others.
- 31-9/3 *Water Quality Standards for the 21st Century: Program Direction and Issue Decisions*, Las Vegas, NV. Contact: Michele Vuotto, Dynamac Corporation, 2275 Research Blvd. Suite 500, Rockville, MD 20850-3268. Hotel rooms at the Riviera Hotel, (800) 634-3414. Single and double rooms \$56 a night. Sessions: Applying EPA's Risk-based Approach and Commitment to Sound Science to WQC/WQS Priority Setting; Life After Toxics: What Direction Now?; Biological Measures: Can and Should They Be Implemented; CSOs/Wet Weather: Are Today's WQC Relevant? Also: Whole Effluent Toxicity; Re-examining Independent Applicability; Human Health Risk Management: Who Should We Protect?; Sediment Management Policy Decisions; Advocates Forum; Ecological Risk Assessment; Human Health Risk Assessment; WQS for Ephemeral and Effluent-dependent Streams; and a question-and-answer period with senior EPA Office of Water program managers.

1992

September

- 8-9 *Lake Champlain: Its Future Depends On Us*, South Burlington, VT. Contact: Don Hipes, Rt.2, Box 92, Jericho, VT 05465. Phone: (802) 244-4510. Co-sponsored by the New Hampshire, Vermont, and Empire State Chapters of the Soil and Water Conservation Society.
- 9-10 *The District Role in Remedial Action Plans Workshop*, Milwaukee, WI. Contact: Bill Horvath, NACD, 1052 Main, Stevens Point, WI 54481-2895. Phone: (715) 341-1022. FAX: (715) 341-1023. Focuses on Lake Michigan.
- 13-17 *National RCWP Symposium: Ten Years of Controlling Agricultural Nonpoint Pollution: The RCWP Experience*, Orlando, FL. Contact: Lisa Grayson, Terrene Institute, 1000 Connecticut Ave., NW, Suite 802, Washington, DC 20036. Phone: (202) 833-3380. Opportunity to present and discuss the outcome of projects related to the 10-year Rural Clean Water Program. Hosted by the South Florida Water Management District with U.S.EPA, ASCS, SCS, and Extension Service.
- 13-17 *The Year 2000: Will We Be Ready Technically? Socially? Politically?* 1992 Annual Meeting of the American Fisheries Society, Rapid City, SD. Contact: Bud Griswold, National Sea Grant Program, 1335 East-West Highway, Room 5216, Silver Spring, MD 20910. Phone: (301) 427-2431. The NPS BBS and its Fish Consumption Bans and Advisories Database will be demonstrated at this meeting. Some topics are: goals for the year 2000; bioengineering; restoration of Mississippi River ecosystem; endangered marine finfish; sociology and fisheries management; microcomputers and fisheries. Also: equal opportunity in fisheries science; contaminated and disturbed habitats; effects of habitat enhancement; toxicology; federal regulations.
- 13-17 *Fourth International Wetlands Conference*, Columbus, OH. Contact: William Mitsch, School of Natural Resources, OSU, 2021 Coffey Rd., Columbus, OH 53210. Phone: (614) 292-9774.
- 14-16 *The District Role in Remedial Action Plans Workshop*, Rochester, NY. Focuses on Lake Ontario. See 9/9 for details.
- 20-24 *Surface Water Quality and Ecology: 1992 Annual Water Environment Federation Conference*, New Orleans, LA. Contact: Maureen Novotne, WEF Technical Services, 601 Wythe St., Alexandria, VA 22314-1994. Phone: (703) 684-2400.

October

- 1-2 *3rd Annual Utah Nonpoint Source Water Quality Conference*, Ogden, UT. Contact: Jack Wilbur, Utah Dept. of Agriculture, Environmental Quality Section, 350 N. Redwood Rd., Salt Lake City, UT 84116. Phone: (801) 538-7098. Theme: Urban Runoff and Stormwater Management. Topics include lawn care fertilizers and groundwater; urban wetlands; impacts to agriculture from urban runoff; NPS control lesson learned from agriculture; disposal of household hazardous waste.
- 6-8 *National Poultry Waste Management Symposium*, Birmingham, AL. Contact: Richard Reynells, NPL Poultry, USDA/ES, Room 3334, South Agriculture Bldg., Washington, DC 20250-0900. Phone: (202) 720-4087. FAX: (202) 720-4924. Symposium is a cooperative effort of USDA-Extension Service, land-grant universities, and state and national poultry organizations.
- 14-16 *Watershed Resources: Balancing Environmental, Social, Political, and Economic Factors in Large Basins*, Portland, OR. Contact: Conference Assistant, OSU College of Forestry, Peavy Hall 202, Corvallis, OR 97331. Phone: (503) 737-2329. Explores how environmental and human factors interact and must be considered in order to meet current and future watershed management challenges.
- 16-22 *Interdisciplinary Approaches in Hydrology and Hydrogeology*, Portland, OR. Contact: Helen Klose, American Instit. of Hydrology, 3416 University Ave., SW, Minneapolis, MN 55414-3328. Phone: (612) 379-1030. Cost: AIH members \$240, non-members \$260. After 9/15 \$25 more. Topics: water policy, competing water needs, surface/groundwater relations, geochemistry, climate, hazardous and toxic information systems.

The Coupon

Nonpoint Source Information Exchange Coupon

#22

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- ☐ Please send me a copy of "Agents for Change," the OECD Workshop Report on Sustainable Agriculture.
- ☐ I want the revised NPS/BBS Users' Manual. Please send me a copy.
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