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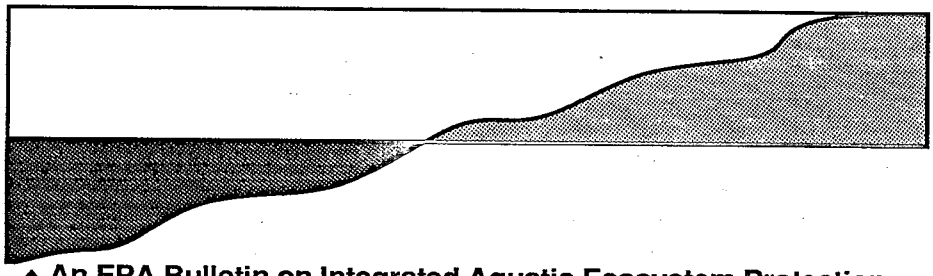
EPA Watershed Events



♦ An EPA Bulletin on Integrated Aquatic Ecosystem Protection ♦

In This Issue...

Watershed Events is intended to update interested parties on the development and use of watershed protection approaches.

Watershed protection approaches are integrated and holistic. That is, they consider the primary threats to human and ecosystem health within the watershed, involve those people most concerned or able to take actions to solve those problems, and then take corrective actions in a comprehensive manner.

Questions and comments about *Watershed Events* should be directed to co-editors:

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U.S. EPA (WH-556F)
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A Note from Hank Habicht, EPA'S Deputy Administrator

I am convinced that the Watershed Protection Approach adopted here at EPA will provide tremendous benefits to environmental and human health. Working in consonance with natural and ecological systems to ensure sustainable development is just plain good sense. Furthermore, the watershed approach has the appeal of helping people focus on the rivers, lakes, or bays they identify with and care about. Likewise, this approach provides the best practical framework for making progress in protecting natural habitats from physical alteration and degradation. This results from the fact that at a landscape scale such as a watershed we can realistically assess cumulative and secondary impacts and formulate workable mitigation strategies.

I am excited and intrigued as well by the potentially powerful institutional benefits to be gained through watershed approaches. These benefits are: 1) improved communication among all levels of government, private organizations, and citizens; 2) increased efficiency through resource sharing; and 3) increased opportunities for establishing risk-based priorities. I believe that these improvements will result from the necessary formation of partnerships to plan for and manage our activities within watersheds.

We've already seen some of these institutional benefits. The Office of Water has joined forces with other major EPA offices and over a dozen Federal agencies to build on each other's authorities, expertise, and resources in support of watershed approaches. Headquarters staff are working together to streamline grants, provide permit flexibilities, develop appropriate ecological criteria and standards, provide targeting, modeling, and monitoring tools, and build a broad understanding and knowledge of watershed approaches. In the Regions, EPA staff are mobilized to provide direct support tailored to the needs of specific watersheds. In many cases this requires the development of multi-media teams—water, air, and superfund—reaching out together to work with other agencies and organizations to effect real changes on the ground!

These actions at EPA herald an impressive beginning to establishing watershed protection as a fundamental basis for the Agency's efforts to protect water resources, as well as human and ecological health. I am proud of your innovative thinking and customer oriented approaches and I commend all of you who are breaking new ground for us by practicing the watershed approach.

WATERSHED PROTECTION AND EPA'S WETLANDS PROGRAM

by Charly Ray, U.S. EPA, Office of Water, Wetlands Division

EPA's wetlands program incorporates watershed approaches into efforts to solve environmental problems and build regional, state, and community capabilities to steward wetland resources. The importance of watershed protection is emphasized through support for conferences, the development of technical resources, and initiation of specific projects.

Two conferences of note that focussed on wetland issues from a watershed perspective, Wetlands of the Chesapeake and Wetlands and River Corridor Management, attracted hundreds of participants and resulted in published proceedings (proceedings can be obtained from the Association of State Wetlands Managers, 518-872-1804, for the former conference and from the Environmental Law Institute, 202-328-5150, for the latter conference). In addition, last year, EPA's Wetlands Division and the U.S. Army Corps of Engineers Institute for Water Resources sponsored a two-day symposium on Multiobjective River Basin/Watershed Planning and Management. The primary goals of this workshop were to share ideas and identify opportunities to improve the interaction between local and state governments, organizational groups, private interests, and Federal agencies involved in river basin/watershed planning management. Participants found substantial common ground and opportunities for furthering watershed protection through the dialogue begun at this workshop.

The recent publication of *State Wetlands Strategies: A Guide to Protecting and Managing the Resource* by the World Wildlife Fund (available from Island Press, 800-828-1302), exemplifies the type of technical information supported or developed by the wetlands program. This publication is targeted towards state and local managers or citizens interested in wetland protection and is a blueprint for future guidebooks on watershed protection strategies. Many of the principles behind statewide or regional wetland protection strategies translate directly to watershed strategies (e.g. local, state, and Federal cooperation in a geographic region; land and water interface issues; and differing political and legal jurisdictions).

Audubon's America, cosponsored by EPA and the National Audubon Society, is a cooperative landscape conservation project which takes a watershed approach to environmental protection. This project is intended to be a joint effort between the public and private sectors to protect, conserve, restore, enhance, and interpret the land and water areas where John James Audubon lived, traveled, wrote, painted, and observed by establishing a "Natural Heritage Corridor." This corridor will be created by seeking voluntary agreements connecting publicly and privately owned natural areas within a 34-state region that includes the watersheds of the Eastern Coastal Plains and the Ohio, Missouri, and Mississippi Rivers. One of the special places that may become part of Audubon's America is the Great Egg Harbor River in New Jersey, which Audubon visited. Audubon wrote in his diary, "Many a drawing I made at Great Egg Harbour, many a pleasant day I spent along its shores." (See box at left on Great Egg Harbor River for more information on watershed protection efforts there.)

These conferences, publications, and Audubon's America all demonstrate the effort that EPA is making to approach wetlands protection on a watershed basis.

THE GREAT EGG HARBOR RIVER WATERSHED PROJECT

by Glenn Eugster, U.S. EPA, Office of Water, Wetlands Division

The U.S. Congress recently designated 129 miles of the Great Egg Harbor River system into the National Wild and Scenic River System. The law, which was signed by President Bush on October 27, 1992, directs the National Park Service to enter into cooperative agreements with local governments to manage the river system. This designation comes after two years of a locally based cooperative watershed planning process led by 12 local governments, the State, and private landowners.

The watershed's headwaters rise southeast of Camden, New Jersey, flowing through the internationally recognized Pinelands National Reserve, before emptying into the Atlantic Ocean. The Great Egg Harbor River, once visited by the naturalist John James Audubon, is habitat for the rare and endangered Southern Bald Eagle, the Pine Barrens Tree Frog, and the Peregrine Falcon. Over 80 percent of the river corridor is tidal and freshwater wetlands.

Through a series of public workshops and a survey of all private landowners, public and private interests in the watershed developed and agreed on a protection strategy. The strategy relies on local land use ordinances, 21 existing State and Federal laws and programs, and voluntary private actions to protect riparian lands, 75 percent of which are in private ownership.

WATERSHED PROTECTION -- KEY TO IMPROVED WATER QUALITY ... A View From Mike Cook, Director, EPA'S Office of Wastewater Enforcement and Compliance

I believe improved water quality in the future depends on how well we organize our new and emerging programs within watersheds. The Office of Wastewater Enforcement and Compliance has operated highly successful permitting and enforcement programs to control wastewater discharges from industrial and municipal sources. We are now tackling stormwater and combined sewer overflows (CSOs) while ensuring discharges meet new water quality standards for toxics. These very expensive controls will only do the job if coupled with much more aggressive practices to control pollution from nonpoint sources.

These emerging programs face more resistance than the first round of water pollution controls under the Clean Water Act. Dischargers want to know that the benefits of expenditures on toxics, CSOs, and stormwater and nonpoint source controls are significant. Local governments and utilities have to assess the need and press for action. The watershed approach provides the focus, data, and structure to inform and motivate at the local level.

How do we shift to organizing activities by watershed without jeopardizing the gains we have made over the last 20 years through the National Pollutant Discharge Elimination System (NPDES) program? The Office of Water and several States are evaluating new ways of doing business under a watershed approach, assessing progress and effectiveness as each pilot proceeds. We hope to end up with a variety of new tools. Some will focus on revamping the NPDES program. Others will emphasize better integration of emerging programs such as nonpoint source and stormwater. We hope they all will have enhancing water quality as a primary focus.

The NPDES program is assuming huge new responsibilities, and nonpoint source programs are expanding in many areas. We must find ways to mobilize support wherever possible to meet these new demands. Linking our requirements directly to the health of rivers, lakes, and estuaries that people know and love will move us a big step in the right direction.

REGION 10 WATER DIVISION REORGANIZES TO FOCUS ON WATERSHED PROTECTION

by Ron Lee, U.S. EPA, Region 10

EPA's Region 10 Water Division was recently reorganized to provide a stronger focus and program direction to watershed protection. This reorganization includes creation of a senior level "Watershed Manager" position, establishment of a "Watershed Management Team," and identification of regional "Watershed Coordinators."

The "Watershed Manager" is charged with ensuring effective implementation of a watershed protection approach and has been given the specific authorities and responsibilities needed to do so. Responsibilities of the "Watershed Manager" include 1) having an internal focus for reorienting regional programs toward a watershed based approach and 2) engaging in external activities to promote effective adoption of a watershed protection approach by Region 10 states, other Federal agencies, and Indian Tribes. Region 10 will work with these external organizations to form partnerships to integrate priority watershed activities.

The "Watershed Management Team" is comprised of the "Watershed Manager," the Water Division Branch Chiefs, and an Environmental Services Division representative. This team is tasked to develop watershed policies and directives that will enable Region 10 to carry out an integrated watershed program.

The Regional "Watershed Coordinators" have been identified to be champions for specific priority watersheds. These people will increase understanding of the environmental problems that are in need of attention, identify key management questions or issues that need to be addressed, and seek opportunities to focus Federal, state, or local actions that will enhance the environment in these watersheds.

The "team" concept of working collaboratively (both internally and externally) to improve the environment by solving watershed problems, using all available tools, is central to our watershed protection strategy. Our overall approach has received very positive support from other state and Federal agencies similarly engaged in watershed activities.

(Editor's note: Ron Lee has been named "Watershed Manager" for Region 10.)

Request for Submissions

The Spring issue of Watershed Events will feature articles on watershed activities (case studies, reorganizations, legislation, etc.) being carried out at the state level. If you have an activity that you would like to highlight, please submit a half to three-quarter page article to Anne Robertson, U.S. EPA, WH-556F, 401 M St., SW, Washington, D.C. 20460. Submissions should be received by February 26, 1993.

APPLYING A WATERSHED APPROACH TO SOLE SOURCE AQUIFER PROTECTION

by John Simons, U.S. EPA, Office of Water, Ground Water Protection Division

EPA's Ground Water Protection Division (GWPD) takes a watershed approach when evaluating candidates for the sole source aquifer program. Section 1424 of the Safe Drinking Water Act (SDWA) states that aquifers requiring special protection can be designated a sole source aquifer. If so designated, Federal financially-assisted projects proposed in the designated area will be subject to EPA review to ensure that these projects are designed and constructed to protect water quality. The criteria for sole source designation are:

1) The aquifer must be the sole or principal source of drinking water for the area;

2) No economically feasible alternative drinking water sources exist within the nearby area; and

3) If contaminated, a significant public health hazard would result.

Although not a formal criterion, EPA's designation review also evaluates streamflow source areas (the upstream headwaters area of losing streams that flow into the recharge area). This watershed approach allows consideration of possible sources of contamination that would not be recognized from study of the areas immediately adjacent to the river or aquifer.

The Snake River Aquifer is an example of an aquifer that has been designated a sole source. Concerns about contamination prompted local citizens to target this aquifer for special protection under the Sole Source Aquifer Program. The area of the Snake River Aquifer designated for protection covers approximately 10,800 square miles of the Snake River Plain in Idaho. Watershed areas of Nevada, Oregon, and Wyoming contribute to the supply of drinking water for 275,000 people who live in the eastern Snake River Plain.

Most of the people living in the eastern Snake River Plain live on farms and ranches within 10 miles of the Snake River. Irrigated agriculture and industries dominate the economy. Recharge to ground water occurs from percolation of surface water used for irrigation (60%), underflow from tributary drainage (25%), rain (10%), and losses from the Snake River (5%). Therefore, activities in the watershed have the potential of contaminating both the aquifer and the Snake River.

The ground water in the Snake River Aquifer is generally of high quality; however, contamination problems do exist. Human induced contamination has been documented in widespread areas at levels below drinking water standards, and in localized areas at levels above drinking water standards. Threats to the ground water include disposal of excess irrigation water, urban storm runoff, and septic system effluent through Class V injection wells; open hole well construction that allows water from one contaminated aquifer layer to mix with another layer of higher quality; as well as radioactive waste disposal through injection wells (halted in 1984, after 32 years) and waste disposal lagoons that continue to leak a mixture of contaminants to ground water at the Idaho Engineering Laboratory, which has been designated a "superfund" site by EPA.

On October 7, 1991, EPA designated the eastern Snake River Plain Aquifer as a sole source aquifer. EPA Regions 8, 9, and 10 were all involved in the designation process. This designation is a positive approach to protecting the aquifer from further contamination in a cost effective manner.

WATERSHED MODELING

By Bruce Newton, U.S. EPA, Office of Water, Assessment and Watershed Protection Division

To protect a watershed many technical questions must be addressed. Just a few might be:

- What are the sources for all this sediment?
- How much nutrient reduction is needed to stop the algal blooms in the lake?
- How much trading of pollution controls between sources can be allowed and still maintain adequate water quality throughout the watershed?
- If we used these specific Best Management Practices (BMPs) in these locations, how much water quality improvement would result?
- Which habitat restoration measures will lead to the greatest improvement in the Index of Biotic Integrity?

Water quality simulation models can provide answers to these questions. Water quality analysts use models to 1) understand the causes of current conditions and 2) predict the results of pollution control and restoration measures. Water quality modelling was invented to deal with the problems caused by sewage discharges during summer low flow conditions when eutrophication and dissolved oxygen problems can be acute. Thus,

LEGISLATIVE INFORMATION NEEDED

Existing and proposed legislation will be one of the topics featured at **Watershed '93**, a national conference on watershed management being held March 21-24, 1993, in Alexandria, VA. If you have any knowledge of state or local legislation regarding watershed management, please contact Sandy Germann, U.S. EPA, at (202) 260-6418.

our ability to model these problems is highly refined. Our ability to model the many other types of problems that may exist in a watershed varies.

The challenge today is two-fold: to integrate models so that different problems within a whole watershed can be examined and to develop new simulation models for the problems for which we currently lack easy-to-use models (such as short duration toxicity problems during storm conditions). A great variety of modelling tools are available now and researchers are hard at work building better tools. Even if you don't have a lot of data for a particular watershed, there are screening-level modelling tools that can be very useful for understanding the probable causes of problems and that will help direct your protection efforts. A recent EPA publication that may be helpful is entitled *Compendium of Watershed-scale Models for TMDL Development*, EPA 841-R-92-002, June 1992. Copies may be obtained from the Watershed Branch, EPA WH-553, Washington, D.C. 20460 (202-260-7074).

ASSESSMENT OF WATERSHED PLANNING

by Rodges Ankrah, U.S. EPA, Office of Policy, Planning, and Evaluation, Water and Agriculture Policy Division

The Office of Policy, Planning, and Evaluation (OPPE) is sponsoring a study by the National Association for State and Local River Conservation Programs to profile and assess watershed planning organizations in the United States. The study focuses on those that are wholly or partly responsible for water quality management and those that are responsible for water quality in conjunction with water supply and groundwater management. The study is making a special effort to detail information on locally driven efforts that go beyond resource assessment.

A sample representative of the range of watershed management organizations will be identified and information will be collected through interviews. Profiles of the organizations will include such information as size, geographical scope, regulatory authority, and funding. The barriers encountered in carrying out watershed programs will be investigated. The impacts of these watershed programs will also be identified.

When completed, the study will provide a basis for the future analysis of options and opportunities for involvement by EPA in watershed planning in its differing forms. For more information, contact Rodges Ankrah, (202) 260-9840.

SOUTHERN WATERSHED HABITAT DEMONSTRATION PROJECT

by Laura Gabanski, U.S. EPA, Office of Policy, Planning, and Evaluation, Office of Regulatory Management and Evaluation

The Science and Policy Staff of the Office of Regulatory Management and Evaluation is leading a habitat demonstration project for the Southern Watershed area of Chesapeake and Virginia Beach, Virginia. The purpose of the project is to demonstrate how the EPA can promote habitat protection through developing non-regulatory partnerships with other agencies and organizations (see list of partners below). Holistic watershed protection and management of this area is a high priority for both the Albemarle-Pamlico Sound Estuarine Study and the Virginia Coastal Resources Management Program. The Southern Watershed contains extensive areas of critical habitats for rare and endangered plant and animal species and supports the highest concentration of rare species of any Virginia locality east of the Blue Ridge mountains. This area is currently undergoing intense development and much attention is being given to protecting these habitats.

A committee of Federal, State, and local officials, and private organizations met during the Fall of 1992, to identify candidate projects and funding sources. Three projects were selected based on needs for education, conservation, and resource management: 1) an educational video for the general public on habitat protection concerns of the Southern Watershed, 2) a purchase development rights workshop, and 3) a common reedgrass control project. Plans are underway to initiate these projects early in 1993.

Partners:

- U.S. EPA
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Virginia Council on the Environment
- Virginia Department of Conservation and Recreation Division of Natural Heritage
- Virginia Department of Game and Inland Fisheries
- Hampton Roads Planning District Commission
- City of Virginia Beach
- City of Chesapeake
- Virginia Dare Soil and Water Conservation District
- The Nature Conservancy, Virginia Chapter
- Southeastern Association for Virginia's Environment
- Back Bay Restoration Foundation
- Tidewater Builders Association

(For more information on this project, contact Laura Gabanski, 202-260-5868.)

SIMULATION MODELING OF PESTICIDE RUNOFF

By Paul Zubkoff, Office of Prevention, Pesticides, and Toxic Substances, Office of Pesticide Programs

The Office of Pesticide Programs' Environmental Fate and Groundwater Branch (EFGWB) uses simulation models for integrating environmental fate data with proposed use information for evaluating the fate of agricultural chemicals in the environment. Using these models, EFGWB estimates potential impacts of pesticide movement from a field within a watershed. Scenarios are developed using databases for meteorology, soils and crops readily accessible through PIRANHA and other sources.

EFGWB uses field scale models, either PRZM or GLEAMS, to estimate pesticide loadings to a receiving body of water. Empirical data are used to estimate spray drift loadings to receiving surface waters until an appropriate spray drift model for such purposes is identified. The fate processes of chemicals entering surface waters, either dissolved in runoff, bound to eroding soil particles or from drift, are usually assessed with EXAMS II or WASP4 to estimate pesticide concentrations as a function of location and time.

Although PRZM is the only model that can be run stochastically for some sub-model components, EFGWB is evaluating methods for generating probabilistic exposure assessments by running deterministic models over multiple modeling scenarios and years.

References:

- **PIRANHA: Pesticide and Industrial Chemical Risk Analysis and Hazard Assessment**, L. A. Burns et al., *Pesticide and Industrial Chemical Risk Analysis and Hazard Assessment, Version 3*, 1992, 400 pp., U.S. EPA / ERL - Athens, Athens, GA 30613.

- **PRZM: Pesticide Root Zone Model**, R. F. Carsel, L. A. Mulkey, J. D. Dean, and P. Jowise, 1984, *User's Manual for the Pesticide Root Zone Model (PRZM)*, EPA/600/3-84-109.

- **GLEAMS: Groundwater Loading Effect of Agricultural Management Systems**, R. A. Leonard, W. G. Knisel, and D. A. Still, 1987, "GLEAMS: Groundwater Loading Effect of Agricultural Management Systems," *Transactions of the American Society of Agricultural Engineering* , 30: 1403-1418.

- **EXAMS: Exposure Analysis Modelling System**, L.A. Burns, 1990, *Exposure Analysis Modeling System, User's Guide for EXAMS II Version 2.94*, EPA/600/3-89-084, April 1990.

- **WASP4: Water Quality Assessment Program**, R. B. Ambrose, Jr., T. A. Wool, J. P. Connelly, and R. W. Schanz, 1988, *WASP4, A Hydrodynamic and Water Quality Model - Model Theory, User's Manual, and Programmer's Guide*, EPA/600/3-87-039.

For further information, contact Henry Nelson or Paul Zubkoff, (703) 305- 5734.

REGION 6 BRINGS WATERSHED PROTECTION APPROACH TO TENSAS RIVER BASIN

by Beverly Ethridge, U.S. EPA, Region 6

The Tensas River flows for approximately 315 miles through the upper northeast part of Louisiana. Wetlands in the area support large numbers of migratory birds and are home to the Louisiana Black Bear, a federally listed threatened species. Approximately 157,000 hectares of fragmented bottomland hardwoods are all that remain of a once expansive forested wetland system measuring over 1,000,000 hectares in the Lower Mississippi River Alluvial Plain's Tensas River Basin. This 85% decline of bottomland hardwood is due primarily to many and often small individual conversions to agricultural production. Many of these lands today are considered marginal for crop production but of high value for potential wetland restoration and enhancement sites.

An open invitation to participate in a cooperative effort to address environmental problems in the Tensas Watershed was presented at a meeting held in October 1991 at the Tensas National Wildlife Refuge. At that meeting Region 6 stressed that EPA wanted the public and state to play a major role in this effort and not for it to become just another unsolicited federal solution for the public. Additionally, Region 6 made it clear that we believed that any workable watershed plan must take into account the local economy and seek compatibility between economic growth and environmental restoration and protection. From the beginning, Region 6 has sought to encourage and facilitate public involvement in this watershed protection effort. Without a genuine dialogue between all interested parties any attempt to devlop a watershed plan would undoubtedly fail.

In 1991, the participating partners (see list below) initiated a cooperative effort to address water quality and wetlands protection in the upper Tensas Basin. Grant and special project monies targeting the area for research, restoration, public education, monitoring, and planning total over three quarters of a million dollars at present. A key program will be the 1990 Farm Bill Wetland Reserve Program in which Louisiana was a pilot state in 1992. Each step in

this project will be recorded to document and provide a model for other such ventures along the Lower Mississippi River. The timeline for the entire effort will be continual; however, major accomplishments are expected in three to five years.

From the beginning, this effort has been a lesson in cooperative evolution. Partnership building can only begin to take place when a clear willingness to listen to other points of view and compromises are reached. Wetlands and water quality are two technical topics which have become political and seemingly two points at which various groups become entrenched and unyielding. The Tensas project, while based in science, seeks to go beyond partisan politics and address the socioeconomic aspects of the entire watershed as they relate to wetlands, water quality, and a healthier environment.

Partners:

- Local Citizens
- Northeast Delta Research, Development and Conservation
- The Nature Conservancy
- LA Farm Bureau Federation
- LA Department of Environmental Quality
- LA Association of Conservation Districts
- LA Department of Agriculture and Forestry
- LA Dept. of Wildlife and Fisheries
- LA Agriculture Extension Service
- Louisiana State University
- U.S. EPA, Region 6
- U.S. EPA Environmental Research Lab, Corvallis, OR
- USDA Soil Conservation Service
- USDA Agricultural Stabilization and Conservation Service
- USDA South National Technical Service
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. Army COE Vicksburg District
- U.S. Army COE Waterways Experiment Station

NEWSBITS

Watershed Info Available on Electronic Bulletin Board

In October, the Watershed Restoration Network became fully operational on the Nonpoint Source Electronic Bulletin Board System (BBS). This network is one of the Special Interest Group Forums (SIGs) available on the BBS. This SIG will feature watershed approaches to water quality and resource management as well as watershed restoration. Contact Hal Wise, U.S. EPA, (202) 260-7109.

Millions Committed to Protecting the Mississippi River

The McKnight Foundation is providing $9 million over the next five years to protect and restore the Mississippi River. This program will award grants to stimulate local activities that protect specific areas along the Mississippi and to build local and national networks linking those with a stake in the river in collaborative efforts to protect it. The Foundation hopes its program will focus increased public attention on the river and will attract the resources of other individuals and organizations to restoring the health of the Mississippi. Contact Mary Ziegenhagen, The McKnight Foundation, (612) 333-4220.

Rangeland Watershed Program

The University of California Cooperative Extension and the USDA Soil Conservation Service (SCS) jointly manage the Rangeland Watershed Program. This program provides water quality education and technical assistance for California rangelands. Several fact sheets have been developed as part of this program covering a variety of topics including nonpoint sources of pollution, water pollution control legislation and rangelands, and rangeland water quality management measures. A grant from the State Water Resources Control Board and EPA, using Clean Water Act Section 319 funds, has been awarded to the Rangeland Watershed Program. This grant will be used to fund development of education 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. Contact James Clawson, Cooperative Extension, (916) 752-3455 or Joel Brown, Soil Conservation Service, (916) 449-2854.

Washington State Takes First Steps Toward Basin Approach

The Department of Ecology's Water Quality Program for Washington State has developed a "hypothetical model" describing a state-wide, basin approach to wastewater discharge permitting in an effort to begin to move the Water Quality Program toward a basin management structure. The goals for this approach are to better address ecological factors and to focus limited resources on an environmental priority basis. Contact Scott Boettcher, (206) 493-2686 or Dan Wrye, (206) 493-9132, both at the Washington State Department of Ecology.

Four New Estuaries Added to National Estuary Program

On September 11, Peconic Bay (NY) was added to the National Estuary Program (NEP), and on October 22, Corpus Christi Bay (TX), Tillamook Bay (OR), and San Juan Bay (PR) were added to the program. Public-private partnerships, called management conferences, will develop Comprehensive Conservation and Management Plans over the next three to five years to identify solutions for each estuary's problems and restore their productivity. EPA Administrator William Reilly describes the National Estuary Program as, "...comprehensive, taking a watershed-wide approach to identifying and addressing threats to the estuary's productivity." Contact Ruth Chemerys, (202) 260-9038 or Eric Slaughter, (202) 260-1051, both with EPA.

AMSA Releases Second Draft of Watershed Legislation

The Association of Metropolitan Sewerage Agencies (AMSA) has released a second draft of its proposed watershed legislation. This draft is being circulated for comment. See July 1992 Watershed Events for more information. Contact Paula Dannenfeldt, AMSA, (202) 833-2672.

RECENT RELEASES

Protecting the Nation's Wetlands, Oceans, and Watersheds: An Overview of Programs and Activities - An overview of the responsibilities, programs and activities carried out by EPA's Office of Wetlands, Oceans and Watersheds. Contact Anne Robertson, EPA, (202) 260-9112.

The Quality of Our Nation's Water: 1990 - This booklet is a summary of the *National Water Quality Inventory: 1990 Report to Congress.* This booklet is designed to help the general reader understand the problem of water pollution in the U.S. today. Its focus is on the sources, types, impacts, and extent of water pollution and the actions government and citizens are taking to control them. Contact Alice Mayio, EPA, (202) 260-7018.

Summary of Administrator's Point/ Nonpoint Source Trading Meeting - A summary of the meeting held in Durham, North Carolina, April 27-28. The intent of point/nonpoint source trading is to spread the cost burden among all pollutant sources and to require greater reductions from those who can more easily and cost-effectively decrease their pollutant loads. Contact Peggy Michell, EPA, (202) 260-5378.

CALL FOR PAPERS
Abstract Deadline: January 15, 1993

"Solutions for the Future...Actions for the Present"
1993 Merrimack River Watershed Management Conference
Bedford, New Hampshire
June 7-8, 1993

Abstracts are invited for paper and poster presentations for four issue related sessions on watershed management: water quality, instream flow, resource use/value, and information management/GIS. This first Merrimack River Watershed Conference will provide a forum for presentations and discussions of issues affecting regional watersheds. The conference is planned to facilitate an exchange of information on national, regional, and local experiences relating to the management and protection of watershed resources. It will help build the framework for the formulation of a Merrimack River Watershed Management Plan by encouraging papers and presentations on specific issues identified by Initiative Subcommittees. For more information on the abstract requirements and for a list of identified issues, please contact Barbara Rich or Tom Groves, New England Interstate Water Pollution Control Commission, 85 Merrimac Street, Boston, MA 02114, (617) 367-8522, or Patricia Garrigan, US EPA Region I, JFK Building, Boston, MA 02203, (617) 565-3563.

United States Environmental Protection Agency (WH-556F)
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