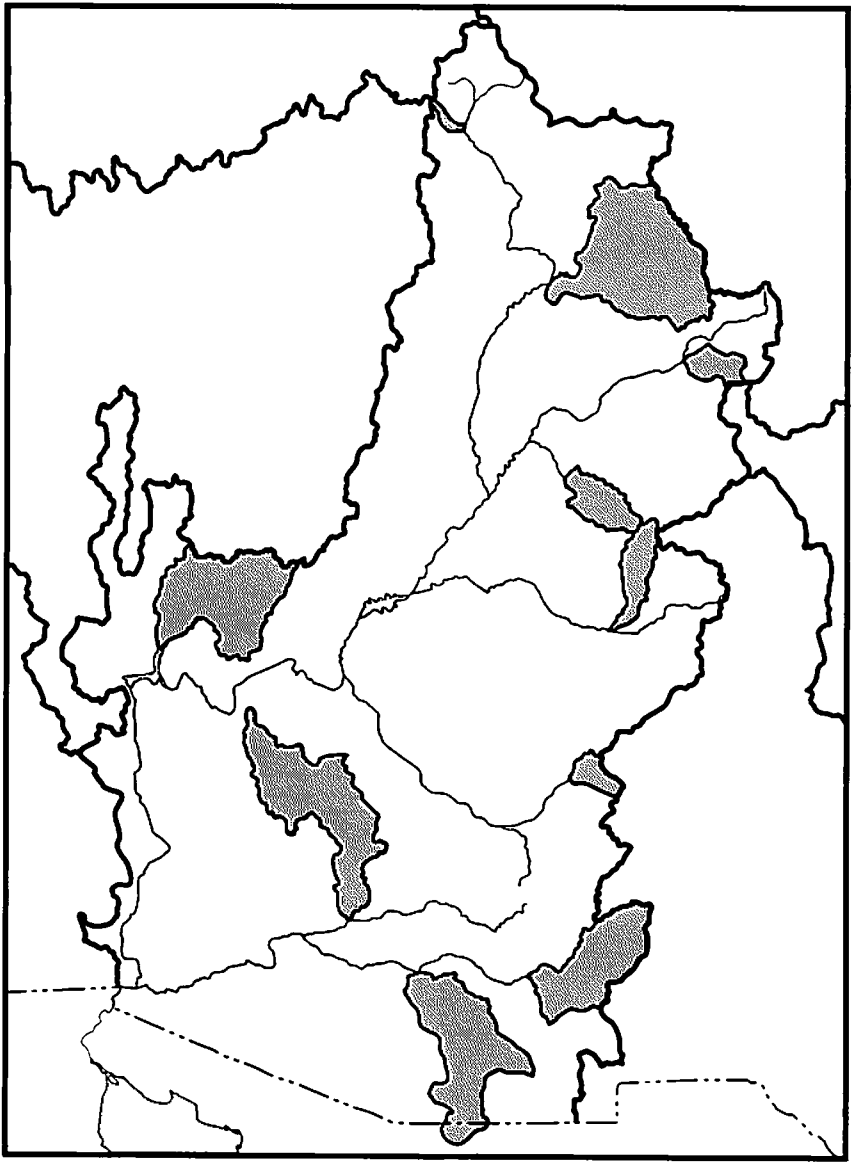
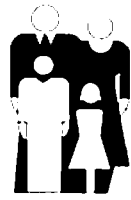
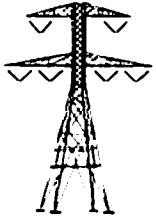


THE WATERSHED SOURCE BOOK

Watershed-Based Solutions to Natural Resource Problems



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PREFACE

This source book is the product of a collaborative effort to examine the watershed as a geographic and political unit for natural resources management. The Center began studying watershed management in 1994 as a part of its Western Water Policy Program, which has been supported by The Ford Foundation.

The Center assisted the Western Governors Association in preparation for its highly successful February 1994 watershed meeting in Boise, Idaho in conjunction with the Western States Water Council. Participants at that meeting examined several watershed efforts underway in the West and considered their suitability for improving water management. Emy Pollock, a member of the University of Colorado School of Law Class of 1995, compiled watershed materials for the Boise meeting under the supervision of then Center Director Lawrence J. MacDonnell and Center Senior Attorney Teresa A. Rice. Professor David H. Getches of the University of Colorado School of Law helped plan and facilitated the meeting. The results and conclusions of the meeting added important, practical information to the Center's ongoing watershed work.

In 1994, the Center conducted a survey of watershed management efforts in the western states and compiled the preliminary results of the survey. Building on this information, Center Associate Wendy S. Rudnik updated and completed descriptions of watershed management efforts, which are presented in Part 2 of this source book. Wendy is also the principal author of the overview in Part 1, which analyzes the survey results. David H. Getches, Interim Center Director from January to August of 1995, and Teresa A. Rice contributed to the source book, giving direction and input at all stages of the publication.

Elizabeth Ann (Betsy) Rieke, who became Center Director in August 1995, edited the source book. We are indebted to Anne Drew for her typing and assistance in formatting the source book.

Most of the information in the source book is based on telephone interviews with people who currently participate, or have previously participated, in a watershed effort. This publication would not be possible without the help of the many participants who took the time to talk to us and send us information.

Members of Western States Water Council provided valuable comments adding to and clarifying the information presented in the source book on watershed activities around the West. Jo Clark, Director of Programs of the Western Governors Association; D. Craig Bell, Executive Director of the Western States Water Council; Larry Morandi, Senior Fellow with the National Conference of State Legislatures; and Frank Gregg, a consultant to the Center, provided assistance in planning the project and insights into organizing information in a useful format.

The following individuals reviewed and commented on the source book: Janet Brown, Frank Gregg, Mike McCord, Bob Nichols, Michelle Pelzer, Dennis Pendleton, James R. Smitherman, and Linda Stonier. Their critiques contributed significantly to the accuracy of the information in the source book. Both the survey and compilation of results also benefitted greatly from the work of students at the University of Colorado School of Law: Robert Barrett, Mark Held and Kristan Pritz (Class of 1997); Paul Cort, Kelly Custer, Michael Fife, Eric Fisher, Patrick Groom, Peter Johnson and Mary Beth Searles (Class of 1996); and Michelle Loy (Class of 1995).

As with all surveys, the information may be biased by the views and perceptions of the people who were interviewed. Human perceptions vary widely, particularly when the information asked for is subjective or there is no formal record of the information in meeting minutes or publications officially approved by the group. Also, information acquired from surveys is subject to human error both on the part of the interviewer and the interviewee. With this in mind, we made a significant effort to verify, double check and reconcile the information we obtained. Nevertheless, there are certain to be some unintentional errors. For those, the Center takes full responsibility.

The Ford Foundation sponsored the research for and the publication of the source book. Without that generous support, this publication would have never been conceived, much less brought to fruition.

This publication is a product of the Natural Resources Law Center, a research and public education center at the University of Colorado School of Law. The Center alone is responsible for the opinions and conclusions in this publication. Thus, the opinions and conclusions in this publication should not be attributed to the University of Colorado, the State of Colorado or any of the organizations that support Center research.

PART 1

OVERVIEW OF WATERSHED APPROACHES TO RESOURCE MANAGEMENT

I. INTRODUCTION

Since 1980, the Natural Resources Law Center (Center) has dealt with many facets of water law and policy in the western United States, returning frequently to the conclusion that the institutions for water decision making are deficient. Often the institutions fail to give adequate consideration to all the affected interests. For example, only water rights holders are permitted to participate in many state water rights decisions. Sometimes the legal framework for water resources decisions or the jurisdiction of the water resources agencies is too fragmented, preventing effective integration of interrelated issues. Surface and groundwater may be governed by different regulatory schemes; water quality and water quantity may be regulated by different agencies. Transboundary issues between competing sovereigns often remain unresolved without a forum for effective resolution (e.g., the Colorado River basin which encompasses seven states in the United States and portions of Mexico, or the Flathead River basin along the United States-Canada border).

"Watershed efforts" are a response to these institutional problems. By "watershed effort" we mean a collaborative effort, undertaken voluntarily or as directed by statute, by individuals, groups and/or government agencies with diverse responsibilities and interests to resolve water-related problems within an entire drainage area or a large portion of a drainage area.

This source book describes watershed efforts in the western states from the Pacific coast to the Missouri, Arkansas and Rio Grande River basins. It includes watershed efforts in

the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. Watershed initiatives are by no means confined to the western United States; they have been emerging all across the country. Given the widespread proliferation of watershed efforts, the Center had to choose a subset on which to concentrate.

This source book is divided into two parts. Part 1, entitled "Overview of Watershed Approaches to Resource Management," highlights concepts about watershed efforts and ideas about organizing and maintaining watershed efforts gleaned from our interviews with watershed group members. Part 2 of the source book contains descriptions of the watershed-based efforts surveyed by the Center. Consistent with the efforts of these groups to look beyond traditional jurisdictional boundaries, the descriptions are organized by geographic regions.

This source book should be viewed neither as a manual for organizing a watershed effort nor as a rigorous analysis of any of the following issues: the extent to which watershed efforts have been successful (however success is measured); the organizational structures, organizational strategies and decision making processes that are most likely to lead to a successful watershed effort; or the functions that watershed efforts perform most effectively (e.g., education, consensus building, planning, construction of projects or mediation of private disputes). Rather, it is largely a descriptive document based on the observations and experiences of participants in the watershed groups. Future research by the Center will address some of these analytical issues. Since this publication marks the beginning of the Center's watershed research, we felt it was critical to begin our learning about watershed management with the groups who are working in western communities to solve resource

problems on the watershed level and their observations about the goals, activities, processes and achievements of watershed efforts.

A. What are the Attributes of Watershed Efforts?

At the outset of the Center's survey of western watershed groups, the Center identified a series of attributes to define watershed efforts and separate them from other resource management initiatives. Some of these attributes are inherent in the name "watershed efforts." Others go beyond the name. Some of the attributes overlap with one another. Others are independent.

The first attribute of the watershed groups described in this source book is their issue focus. Watershed groups have as a primary focus one or more resource management problems related to the allocation, use or quality of water. Second, watershed groups have a geographic scope that encompasses the area needed to address the identified natural resource problem or problems rather than following the boundaries of a city, county, state or other traditional political jurisdiction. Not surprisingly, when the geographic scope is expanded to include the entire "problemshed," the scope typically becomes the entire watershed.

The third attribute of the watershed groups described in this source book is the active inclusion of interested members of the local community and the larger public in the decision making process, whether in an advisory role or as actual decision makers. This is one of the attributes that leads to denomination of watershed groups as collaborative efforts.

Watershed groups initiated by government agencies also typically have another attribute that contributes to the collaborative designation. This attribute relates to the manner

in which the government agencies interact with each other and with the public. The core of this attribute is twofold. First, in a watershed group the agencies work with each other in a coordinated, cooperative fashion to produce joint products and decisions rather than individual agency products and decisions. Second, instead of a process in which the agencies propose programs and actions and the public responds, the agencies and the non-governmental groups and citizens are jointly preparing a proposed program or action.

Finally, the Center identified a fifth attribute it believed to be characteristic of watershed groups: a broader, systems view of the resource problems in the watershed and the potential solutions rather than a resource by resource, agency by agency, political jurisdiction by political jurisdiction approach.

All the watershed groups described in this source book exhibit the first four attributes. Needless to say, the manner in which the attributes are manifested is not uniform. For example, some watershed groups began by focusing on a portion of the watershed with the intent to expand to a watershed-wide focus in the future. Others initially undertook planning processes to identify and address certain natural resource problems on a watershed-wide basis.

Watershed group decision making processes provide a spectrum of roles for local citizens. Thus, the manner in which inclusiveness is expressed varies from group to group. Some groups are agency-dominant in the sense that governmental agencies initiated them and constitute the voting membership while citizens serve in an advisory capacity. At the other end of the spectrum, some groups are citizen-dominant. Citizens initiated the efforts and remain the decision makers with the governmental agencies serving on a general or technical advisory committee.

Many watershed groups exhibit the fifth attribute, a systems focus in their approach to watershed problems, but many do not. With an interest in immediate, on-the-ground results, some groups focus on projects that are limited in size and impact. By contrast, other watershed groups are engaged in an integrated resources planning effort that incorporates a systems approach.

B. What is a Watershed?

A watershed is an area of land from which all the water drains to the same location such as a stream, pond, lake, river, wetland, or estuary.¹

Watersheds, sometimes called basins, vary in size and can be large, like the Colorado River drainage basin, or small, such as the forty acres that drain to a farm pond. Large watersheds contain many smaller watersheds nested within them. For example, the Colorado River watershed embraces numerous major tributaries, including the Green River, the San Juan River and the Gila River, each of which has its own watershed. Likewise, the tributary watersheds also contain smaller watersheds; each of the tributary rivers is fed by other rivers and streams. As a result, watersheds come in all sizes and exist at many levels.

Because drainage systems provide logical units to study and manage natural resources, scientists have advocated managing natural resources on a watershed level for many years. When surveying the Upper Mississippi River basin in 1843, Joseph Nicollet suggested that the configuration of the proposed state of Iowa should follow river basin boundaries, thus giving

¹ TERRENE INSTITUTE, CLEAN WATER IN YOUR WATERSHED: A CITIZENS GUIDE TO WATERSHED PROTECTION 2 (1993).

it "the character of an extended valley."² Ten years later, Charles Ellet recommended a basin-wide design of dams and levees for flood control on the Mississippi and Ohio Rivers.³ In 1879, John Wesley Powell made similar proposals for the expansive, semi-arid lands of the western United States. Mr. Powell observed that the equitable division of water could be achieved only by parceling the lands according to the location of the water and the topographic features of the land.⁴ More recently, in 1965 Congress organized the entire nation into river basin commissions, created and supported with federal financial incentives to develop coordinated planning.⁵ Thus, managing resources on a watershed level is far from an innovative idea.

Natural resources management units, however, are not typically based on watersheds because political boundaries, such as state, county and tribal borders, seldom conform to watershed boundaries. Nevertheless, many communities and policy makers recognize the potential of watershed-based management in resource problem solving. This source book examines collaborative watershed efforts in the western United States, each of which has a unique approach to addressing the particular problems and issues in its watershed. As these case studies illustrate, successful watershed management means not only considering the entire hydrologic system, but also taking into account the many different resources and interests in the watershed.

² MARTHA C. BRYAN, JOSEPH NICOLLET AND HIS MAP 291 (1980).

³ GENE D. LEWIS, CHARLES ELLET, JR.: THE ENGINEER AS INDIVIDUALIST 140-43 (1968).

⁴ JOHN WESLEY POWELL, REPORT ON THE LANDS OF THE ARID REGION 22, 28, 38 (Belknap Press 1879).

⁵ David J. Allee, *River Basin Management*, in THE ROLE OF SOCIAL AND BEHAVIORAL SCIENCES IN WATER RESOURCES PLANNING AND MANAGEMENT 294 (Duane D. Baumann and Yacov Y. Haines, eds., 1988).

C. Why Use a Watershed Approach to Manage Natural Resources?

1. To Address Problems that Extend Beyond Existing Jurisdictional Boundaries

Water resource problems, such as water quality, water supply and fish and wildlife habitat, commonly extend beyond national, state, tribal and local jurisdictional boundaries. Watersheds typically encompass the "problemsheds," the areas in which the problems exist, more completely than political jurisdictions. For example, the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado (Recovery Program), designed to protect and increase the populations of endangered fish species, encompasses portions of three states, which constitute the upper basin of the Colorado River. Water and power users, environmentalists, the U.S. Department of the Interior and three states, Colorado, Utah and Wyoming, joined together to develop the Recovery Program because the Recovery Program issues, such as maintaining and restoring fish habitat, managing river flows and controlling nonnative fish species, require the cooperation and participation of all those entities and interests.

The Flathead Basin Commission in Montana was also organized to address natural resource problems that could not be effectively managed within existing jurisdictional boundaries. The Flathead Basin Commission focuses on water quality issues that cross jurisdictional lines, including international and tribal boundaries. The Commission's authority extends to the State of Montana, the Flathead Reservation of the Confederated Salish and Chadian Tribes, and the Province of British Columbia, Canada. Concerns about the water quality effects of a proposed coal mine in British Columbia spurred the formation of the

Flathead Basin Commission. In addition to the proposed coal mine, the Flathead Basin Commission concentrates on the effects of hydropower, forestry, mining and recreational activities on water quality.

2. To Coordinate the Efforts of Resource Managers

A cooperative watershed approach also facilitates coordination among government and private entities with resource management or regulatory authority in the watershed. Since many levels of government and numerous private entities frequently manage resources within a watershed, it is critical to find mechanisms that both promote effective communication and coordination for overlapping activities and avoid duplication of effort and conflicting regulations. The Mugu Lagoon Task Force in California and the Rio Puerco Watershed Interagency Group (Interagency Group) in New Mexico are two watershed efforts formed to coordinate agency activities within the watershed.

The Interagency Group, consisting of various local, state and federal agencies, meets primarily to exchange information and coordinate efforts to address sedimentation and other water quality problems in the Rio Puerco watershed. Similarly, the Mugu Lagoon Task Force consists of government entities that exchange information about flood control projects, water quality monitoring and municipal ordinances affecting land use practices. This group also provides technical advice and assistance for a watershed plan being prepared by the U.S. Natural Resources Conservation Service.

Some participants in watershed efforts have discovered significant economic benefits as a result of watershed-based coordination. According to Richard Campbell, a participant in the Mugu Lagoon Task Force, the Ventura County Flood Control District realized the

potential for economic benefits while working on flooding problems. High volumes of runoff due to upstream erosion caused flooding on private property around the lagoon. Because engineering solutions in and around the lagoon are expensive, the Flood Control District determined it was probably more cost effective to address upstream causes of the flooding and thus became more actively involved in the Mugu Lagoon Task Force.

3. To Produce More Effective Solutions by Considering the Entire Watershed and All the Interested Parties

In many cases, solutions are more effective when they address problems on a watershed-wide basis and all the interested parties are included in the development of solutions. Without comprehensive geographic and interest group coverage, solutions may be piecemeal, inappropriate, difficult to implement or less likely to be durable. Two examples of comprehensive watershed-wide efforts come from the Bear River in the Great Basin and the Santa Clara River in California.

The Bear River weaves in and out of three states, Utah, Idaho and Wyoming, crossing a state line five times. According to Barbara Hoffman of the Bear River Research Conservation and Development Council (Bear River RC&D), implementing water quality projects on the Bear River generally requires the cooperation of at least two states and several counties within each state. The Bear River RC&D, along with other governmental agencies, is helping to form the Tri-State Bear River Watershed Project. The States of Utah, Idaho and Wyoming, state and federal agencies, local governments and private landowners are joining together to resolve the complex water quality and related issues in the Bear River. Given the interjurisdictional nature of the river, cooperation by these entities is critical to a successful water quality program.

The Santa Clara River Enhancement and Management Plan (Santa Clara Plan) is an attempt to address comprehensively the issues raised by the conflicting views of developers, gravel miners, farmers and preservationists about how the river should be managed. Some participants fear the Santa Clara River faces an ominous future if the interested parties cannot work together in developing the Santa Clara Plan. Cat Brown from the U.S. Fish and Wildlife Service believes it will take months, maybe years, to reach consensus about the river's future. "If any of us is greedy, then we'll lock horns," Brown said. And the locking of horns will leave the river's future uncertain.⁶

D. How Can a Watershed Effort Effectively Address Natural Resource Problems?

1. Provision of a Forum for Discussion and Education

Some watershed efforts have consciously chosen to provide a neutral forum in which education about and discussion of watershed issues can occur. Education and discussion are generally key building blocks in devising solutions to watershed problems. Many watershed group members have emphasized that provision of a non-threatening environment encourages people to discuss their concerns and to exchange ideas.

The Verde Watershed Association (Verde Association) in Arizona stimulates community interest in the watershed with public lectures, debates and newsletters. The Blackfoot Challenge in Montana and the Colorado River Headwaters Forum (Headwaters Forum) in Colorado provide a forum to educate participants and discuss possible solutions to

⁶ Richard L. Colvin & Amy Pyle, *Charting Future of a Wild River*, L.A. TIMES, Apr. 25, 1993, at A16.

watershed problems, including inadequate water supplies and conflicts between agricultural and development interests.

The Verde Association, the Blackfoot Challenge and the Headwaters Forum strive to remain neutral on contentious watershed issues while promoting discussion and education among the participants and the public. These groups draw people with diverse perspectives into a setting where they can feel comfortable expressing their views. A group may start by learning basic facts about the watershed, such as the causes of pollution, what it takes to sustain fish life and how various interests depend on water supplies in the basin. Often, it is this neutral forum with an open exchange of information that leads to sharing different views and ultimately to practical solutions and collaborative projects within the watershed.

The Verde Association, the Blackfoot Challenge and the Headwaters Forum sponsor educational programs where knowledgeable residents or invited speakers present information on topics pertinent to the watershed. Citizens in the Verde Association believe that education is especially important due to the technical complexity of some watershed issues, the sharply different opinions about the issues and the variety of projects and activities occurring in their large watershed.

2. Establishment of a Process for Broader Participation in Planning and Decision Making

In addition to providing a forum for education and discussion, many watershed efforts have created mechanisms for reaching agreement about actions to be taken in the watershed. Thus, instead of remaining neutral on divisive issues, these groups seek to develop broad support for solutions. They have established a process that typically includes and respects all kinds of participants — from farmers to environmentalists, from tractor dealers to university

professors. The structures for collaboration vary with problem types and with the number and diversity of affected interests.

Both the Malibu Creek coordinated resource management planning process in California and the Middle Snake River nutrient management planning process in Idaho set up structures that enabled a large number of people to be part of the planning and decision making processes. The Topanga-Las Virgenes Resource Conservation District (Topanga RCD) organized approximately 160 entities, including government agencies and private interest groups, to develop the Malibu Creek Coordinated Resource Management Plan (Malibu Plan). Before organizing the group to create the Malibu Plan, the Topanga RCD, with the help of experienced facilitators, held consensus-building sessions to develop goals for the watershed.

Because of the large number of participants interested in the initial sessions, the Topanga RCD set up two separate councils to carry out the Malibu Plan. The Executive Council consists of governmental entities, who must satisfy their own internal decision making procedures before participating in Executive Council decisions. All other participants belong to the Advisory Council. Discussion and decision making processes follow the procedures outlined in Robert's Rules of Order.

When the state of Idaho was required under the Clean Water Act to formulate a plan to clean up the water in the Middle Snake River, the Idaho Division of Environmental Quality (Idaho DEQ) involved industry leaders along the Middle Snake River in drafting the Middle Snake River Nutrient Management Plan (Middle Snake Plan). In order to prepare the plan and obtain input from all affected parties, the Idaho DEQ set up four committees. The

Executive Committee, responsible for writing the Middle Snake Plan, included representatives from industry groups, conservation groups, local soil conservation districts, county commissions and canal companies. A Technical Committee, consisting of experts from industries and government agencies, had to approve all parts of the Middle Snake Plan. Finally, the Legal Committee reviewed the plan to make sure it complied with applicable laws and regulations, and a General Public Advisory Committee provided interested citizens with an opportunity to participate.

Participants who worked on the Middle Snake Plan report that the large number of participants in preparation of the plan directly impacted the amount of time it took to make decisions and to write the plan. However, most of them also believe that because so many people invested their time and effort in developing the plan, it is widely understood and will be implemented with less foot dragging.

3. Coordination of Activities Within the Watershed

While many federal and state agencies, local governments and private organizations may be active in managing resources within a watershed, they often fail to coordinate their work or even to communicate with one another about their activities. To solve this problem, the Henry's Fork Watershed Council and the Santa Margarita River Watershed Management Program each established formal and informal means of improving coordination within the watershed.

The Henry's Fork Watershed Council in Idaho reviews and critiques proposed watershed projects and plan recommendations and suggests priorities for their implementation. Approximately twenty-five agencies have regulatory or management authority over resources

in the Henry's Fork basin. Due to the Council's credibility among citizens in the watershed, agencies and organizations bring their proposals for watershed projects, ranging from trumpeter swan distribution to fish habitat restoration and grazing reform, to the Henry's Fork Watershed Council for review and suggestions. The Council takes an active role in making recommendations to agencies about which projects should proceed and on what terms.

Watershed groups usually do not have independent decision making authority in the watershed and must coordinate activities informally by improving communication and soliciting cooperation. The Santa Margarita Program in southern California is a good example of voluntary governmental coordination. The process began when Riverside County and San Diego County passed a joint resolution to cooperate in a watershed planning effort. Later, the counties invited the National Park Service to set up a planning process for a riparian corridor protection project. Other government entities and landowners joined as the project progressed.

While each watershed effort is tailored to the basin's special situation, nearly all watershed efforts work to some extent toward providing a forum and processes that encourage discussion, broad participation and better coordination among resource management agencies within the watershed.

II. CHARACTERISTICS OF WATERSHED EFFORTS

To better understand and to draw conclusions about the watershed efforts described in this study, it is important to examine and compare critical characteristics of the efforts. This section of the overview will address the influence of geographic characteristics on watershed groups, the breadth of participation in watershed efforts, the types of problems and issues addressed by watershed efforts and the new roles governmental agencies are assuming to support or accommodate watershed management efforts.

Geographic characteristics define the context for a watershed effort and thus affect the type and scope of the issues a watershed effort addresses. For example, the Bear Creek basin, a tributary to the Rogue River in Oregon, is quite arid and heavily populated. These two geographic characteristics provide critical background for understanding the water supply problems and concerns of the participants. In contrast, the Hood Canal Coordinating Council in a region of Washington with a wet climate has little problem with water supply. Instead, this group confronts the significant water quality problems which are degrading the natural resources of the Puget Sound, including the shellfish beds.

Likewise, understanding who participates in watershed groups and what issues the groups seek to address contributes to a deeper understanding of the efforts. Not surprisingly, there is a reciprocal relationship between the participants and the issues. The participants determine the issues and vice-versa.

Rural landowners, particularly dairy farmers with a deep concern about agricultural land use practices that affect water quality, are the primary participants in the Little Bear River Steering Committee in Utah. Managing animal wastes is the central focus of the Little

Bear River effort. In contrast to the Little Bear watershed effort, participants in the Upper Salinas River coordinated resource management planning effort in California work to resolve, among other issues, problems in residential neighborhoods located along the river corridor, including trespasses on private lands, illegal dumping and off-road vehicle use.

Finally, watershed efforts often involve new roles for governmental agencies seeking to support or accommodate watershed management efforts. The state-sponsored Governor's Watershed Enhancement Board (GWEB) in Oregon (formerly known as the Watershed Health Program) sets guidelines for watershed enhancement and the establishment and conduct of local watershed efforts. The statutory guidelines suggest that a watershed group be broadly representative of affected interests; the guidelines require local government recognition of the formation and initial membership of watershed groups. Many watershed groups in Oregon follow the state guidelines when organizing their efforts. Following the guidelines is required in order to obtain funding through GWEB. Some watershed groups, including the Upper Rogue Watershed Council and the Little Butte Creek Watershed Council, reported with approval that the Oregon Water Resources Department (outside of GWEB) has encouraged local groups to develop their own solutions to resource problems before the Department undertakes enforcement actions.

A. What Geographic Area is Encompassed by the Watershed Effort?

1. Basic Geographic Characteristics

Basic geographic characteristics of a watershed may reveal why a particular watershed effort was started and the physical or institutional challenges facing the effort. The Bear

Creek Watershed Council, located in the Rogue River basin in Oregon, formed because five municipalities located along Bear Creek wanted to maximize efficient use of their existing water resources and consider a search for a new water supply. The Bear Creek watershed, which is relatively arid for Oregon, includes the City of Medford, the largest population center in the Rogue River region. In response to a long drought and local scarcity of water, the county organized several committees to develop a comprehensive water supply plan through the year 2050. This committee was later reorganized into the Bear Creek Watershed Council, which continues to focus on water supply issues.

Geography can also explain why certain participants are interested in a watershed effort. When water is transferred from one watershed to another, the range of parties with a stake in the watershed in which the water originates increases substantially. The Eagle River Assembly in Colorado addresses the entire Eagle River watershed, which is located in north central Colorado west of the Continental Divide. Several municipalities from the Colorado Front Range import water from the Eagle River basin and have thus established an interest in the basin; they participate in the Eagle River Assembly.

2. Watershed Efforts that Include Areas Smaller or Larger than the Hydrologic Watershed

Watershed efforts, as the term is used in this source book, include initiatives whose geographic area of concern is not identical with watershed boundaries. Although an identical match may be the theoretical ideal condition, for various reasons, including practical limitations, political constraints or the size of the problem area, participants in watershed efforts sometimes choose to address an area smaller or larger than the hydrological watershed.

Even when a problem concerns the entire watershed, lack of resources or other practical limitations may force a group to limit its projects to an area smaller than the hydrological watershed. The Big Spring Creek Watershed Water Quality Project in Montana, led by the Fergus County Conservation District (Fergus District), started by including a small section of the basin located around the City of Lewiston. It is now expanding to cover the entire 250,000 acre watershed. The Fergus District began with a small area because it initially lacked sufficient money and staff to organize people throughout the whole watershed.

Management considerations and political constraints sometimes militate in favor of addressing an area smaller in size than the entire watershed. The Gila Monster Interstate Watershed Management (Multi-Multi) Program in New Mexico and Arizona encompasses only the upper fifty miles of the Gila River in Arizona. The participants concluded that severe degradation in the lower reaches precluded them from making meaningful improvements in the river habitat downstream from the upper section. The Willapa Bay Water Resources Coordinating Council in Washington is confined to Pacific County; the Council found it difficult to work with the adjacent counties on watershed matters because each community prides itself on its independent decision making.

In some cases, the problem area may not encompass the full watershed. A smaller area is therefore a more logical unit. The Mokelumne River Watershed Project in California studies only the upper Mokelumne River, the area where timber operations and livestock grazing pollute the river. Similarly, the Deschutes River Policy Group in Oregon, which organized to find ways to control recreational impacts on the river, concentrated on the lower twenty-four miles of the Deschutes, where most boating, hiking and camping takes place.

On the other hand, when the problem area extends beyond the hydrologic boundaries of the watershed, watershed efforts sometimes reach beyond those boundaries. The Applegate Partnership in Oregon, which deals with forestry-related problems, covers forest lands outside the Applegate River basin. Controversies over spotted owl habitat and management of fire-kill areas extend to timber stands beyond the Applegate basin. To address wildlife habitat issues, the activities of the Greater Yellowstone Coalition encompass an area much larger than a single watershed. Wildlife do not necessarily recognize watershed boundaries. For example, grizzly bears in the region roam throughout an area that crosses the divides separating the Yellowstone basin from its neighboring basins.

B. Who Has Interests Affected by Activities in the Watershed?

1. Breadth of Participation

Identifying the government agencies, non-government entities and citizens who are willing to devote their time and resources to a watershed group reveals the interests that are driving the problem solving efforts in the watershed. The breadth of interests among participants may indicate how widely accepted the work of the watershed group will be. Some groups seeking to maximize the effectiveness of a watershed effort have used educational programs on organizing and managing watershed efforts to encourage the inclusion of a wider range of interests in the watershed.

Trying to include all the key interests in the watershed is not easy. Simply finding and notifying the spectrum of interested parties in the watershed may demand a large amount of time and other resources. It takes even more effort to enlist representatives of the interests

in the watershed group. Once the interested people come together, it is critical to engage the group so the participants foresee benefits from their efforts.

Participants in the Upper Carson River Watershed Management Plan in Nevada and California succeeded in convening and coordinating a remarkably diverse array of interests in the watershed. In less than a year, they organized government agencies, the Washoe Tribe, state assembly members, local community leaders, ranchers, conservation groups and homeowners associations to address groundwater and surface water management within the watershed. This success is credited largely to a full-time coordinator who spent long hours lobbying for support among the community, soliciting participants and listening to and acting on the complaints and frustrations of participants.

Often the task of effectively involving all the possible parties interested in the watershed is overwhelming to volunteers. The Bitterroot Water Forum (Bitterroot Forum) in Montana is an example of a watershed effort that started with a small group with the hope of expanding the membership as the group gets organized and builds momentum.

The organizers of the Bitterroot Forum were fairly cautious and selective in inviting members. The organizers were concerned about both obtaining a balance of interests in the watershed and maintaining a manageable group size. At the outset, they wanted to avoid dominating and disruptive people. Several watershed groups in the Bitterroot River basin had organized and then fallen apart due to the friction among participants. Given this history, the Bitterroot Forum is trying to build a more durable group even if that means excluding some interested parties at the beginning.

To accommodate different categories of interests, many watershed efforts set up different types of participation mechanisms. For example, the Middle Rogue Watershed Council in Oregon allows only local residents and organizations to participate as full members. The Council involves federal and state agencies by exchanging information with them and consulting with them to obtain technical advice. This type of arrangement is not unusual, particularly when community members are concerned that the government agencies they deal with have failed to involve the public in a meaningful way in agency activities, such as land use planning efforts. Such an arrangement is often expressly intended to prevent the agencies from unduly dominating the watershed effort.

Other watershed efforts, such as the Nisqually River Council in Washington, consist primarily of government agencies. However, the Council confers with a Citizens Advisory Committee on all decisions regarding the watershed. The Nisqually River Council also established joint subcommittees consisting of both Council members and Citizens Advisory Committee members.

2. General Public Participation

Watershed efforts differ in how far they reach out to include the general public. Members of the public usually have a substantial interest in a watershed even if they are not landowners or water rights holders within the watershed. For instance, as "owners" and users of the public lands and as taxpayers providing funding for public land management, the general public has a strong interest in those lands. Watershed efforts struggle with the practical problems involved with including the general public — more specifically, how to manage meetings and decision making processes.

Two contrasting examples, the San Miguel River Coalition and the Chalk Creek Coordinated Resource Planning Process (Chalk Creek Process), illustrate how different situations can present different challenges and issues regarding public participation. The San Miguel River Coalition, based in Telluride, Colorado, focuses primarily on the river corridor area, most of which is publicly owned. San Miguel County is experiencing a growth explosion on top of the huge number of tourists that visit Telluride annually. River management issues dealing with erosion, sanitation and wildlife habitat destruction have become a focus of concern for residents, local governments and state and federal agencies.

The San Miguel River Coalition has agreed that their meetings will not be open to the public. Coalition members state that as a result members feel less threatened and tend to be more candid and willing to collaborate. However, because public education and cooperation on river management is vital, the Coalition has hired a river ranger to work with the public.

In contrast, the Chalk Creek Process in Utah encourages public participation at all meetings and activities. Unlike the San Miguel River basin, the Chalk Creek basin does not include a highly popular resort town. Because ninety-nine percent of the land in the watershed is privately owned, nearly all of the participants are landowners. Regardless of property interest, any member of the general public is encouraged to participate.

C. What Problems and Issues Exist in the Watershed?

Watershed groups utilize a wide range of approaches to solve watershed problems. Although some watershed groups are established by statute with specific goals, objectives and processes, others have not formally delineated the issues on which they focus or established

formal decision making processes. Unlike government agencies whose authority, jurisdiction and procedures are established by law, these watershed efforts are free to decide what issues to address and how to approach those issues. The issues selected by watershed group organizers reflect their motivations and help explain why the group has undertaken particular activities and selected certain problem solving approaches.

1. Issues Serving as Catalysts for Watershed Efforts

It should come as no surprise that a wide variety of issues have served as the catalysts for the formation of watershed efforts and that different constituencies have different priority issues. In the Santa Clara River Enhancement and Management Plan in California, sand and gravel miners, farmers and environmentalists each have different concerns about the use of the river. Yet, most interested parties can agree upon a list of critical issues. In the Santa Clara Plan, these issues are managing the river corridor, sustaining the industries dependent on the river's resources and the surrounding land, and maintaining the natural resources of the river, including the native plant and animal life.

While any issue can serve as a catalyst for organizing a watershed effort, some of the recurring themes are economic development issues, the inability of government agencies to resolve problems in the watershed and the desire of watershed residents for more input and control in managing resources. The Little Butte Creek Watershed Council (Little Butte Council) in Oregon evolved from a local nonprofit group focused on economic development issues for the City of Eagle Point. Because the creek was important to the economic well-being of the area, the group found itself frequently handling issues related to the creek. Consequently, it set up a separate committee to focus solely on Little Butte Creek. This

committee examined the needs of the agricultural, timber and recreational industries and how they affected water supply, water quality and fish habitat in the watershed.

Economic factors played an important role in the formation of the Feather River Coordinated Resource Management Group (Feather CRMG) in California. Pacific Gas & Electric Company (PG&E) discovered that large amounts of sediment in the river were diminishing its reservoir capacities, damaging turbines and reducing energy production. In response, PG&E initiated and funded a cooperative effort in the watershed to reduce the sedimentation. In addition to focusing on the economic impacts of sedimentation problems, the Feather CRMG works to conserve riparian areas and fisheries and to reduce groundwater overdraft. The group is now over ten years old and still operates with support from PG&E, government agencies and landowners working in the watershed.

At times, a concern over the influence of entities viewed as outsiders will inspire local residents to unite and find a cooperative solution to a problem. The Musselshell Basin Water Management Steering Committee in Montana was formed after state agencies indicated they would intervene through administrative processes or a lawsuit if the water users could not resolve the basin's water supply problems. Water users in the Musselshell River basin were also concerned that the reauthorization of the Clean Water Act might lead to new water quality regulations that would affect them. A strong dislike of government-directed solutions united local water users for the purpose of finding solutions.

Similarly, residents and irrigators along the Lemhi River organized the Lemhi River Model Watershed Project in Idaho to improve salmon habitat to ward off potential intervention by non-local interests on behalf of the salmon. While the residents of the Lemhi

River watershed were not facing any immediate threat of government intervention, they were aware that Idaho's Snake River chinook salmon runs had been listed as threatened under the Endangered Species Act. Although they believed the dominant factor in salmon mortality was the hydroelectric dams along the Snake and Columbia Rivers, increasing attention was being focused on upstream areas, like the Lemhi River watershed, where land use practices were also harming salmon habitat. To avoid Endangered Species Act-driven solutions they feared would be dictated by outsiders, the residents of the Lemhi River watershed collaborated to work on the salmon habitat problem.

2. Objectives and Activities in Response to Problems in the Watershed

To respond to the problems in their watersheds, watershed groups have identified a broad range of objectives and activities that typically include education, conflict resolution and on-the-ground protection and restoration projects. However, since each watershed and each watershed effort is unique, there is no model list of objectives or activities.

Educational activities are a priority for many watershed efforts. The Upper Rogue River watershed in Oregon attracts approximately 600,000 tourists annually to visit sightseeing and recreation areas like Crater Lake National Park, Lost Lake Reservoir and Diamond Lake Recreation Area. Most recreational opportunities in the area, such as backpacking, fishing and boating, take place in the river corridor. At times, tourists trample fragile riparian areas, disturb spawning salmon or litter the area. An annual Water Festival and participation in the Rogue Aquatic Nature Center are among the activities of the Upper Rogue Watershed Council designed to enhance tourists' awareness of the river environment and native wildlife. The Nature Center is run by the Upper Rogue Park and Recreation

Association. The Council has sponsored some of the activities and displays at the Center under its outreach and education programs. According to Roger Fishman, Coordinator of the Council, "[The Rogue Aquatic Nature Center provides] an opportunity to teach the principle of stewardship. It shows what happens upland can affect what's downstream."⁷

Conflict resolution, often focusing on water allocation issues, is another typical activity for a watershed effort. The Upper Clark Fork River Basin Steering Committee in Montana has developed and plans to implement a comprehensive approach to using and maintaining water resources in the basin. Residents were in disagreement over how water in the Clark Fork River should be used in the future. The dispute intensified after the Granite Conservation District applied for storage sites on the river, and the Montana Department of Fish, Wildlife and Parks applied for an instream flow reservation. Facing a lengthy, expensive legal battle with an uncertain outcome, the parties agreed to discuss possible solutions regarding their conflicting applications and use the Northern Lights Institute to facilitate their discussions.

Through these negotiations, the parties agreed to temporarily close the Clark Fork River basin to most new surface water rights and suspend the instream flow reservation process. The Montana Legislature passed a bill temporarily suspending the issuance of new surface water use permits. The legislation also requires local water users, farmers, environmentalists, business representatives and others to develop a plan, in cooperation with local governments, that balances all the water uses in the basin.

⁷ Mark Freeman, *Grants Keep Aquatic Center Dream Afloat Among Backers*, THE MAIL TRIBUNE, Jan. 26, 1995 at 5A.

A third typical focus for a watershed effort is habitat restoration. The Coos Watershed Association in Oregon restores salmon habitat by implementing stream restoration projects that improve fish passage and create spawning grounds and protective habitat for juvenile salmon. The group has improved instream habitat by placing boulders and logs in stream beds, building off-channel ponds for juvenile salmon and modifying culverts to improve salmon passage.

From education to conflict resolution to on-the-ground habitat restoration, we see the broad range of activities that can be undertaken by a watershed group.

D. What New Roles are Federal and State Agencies Undertaking to Support or Accommodate Watershed Efforts?

Watershed efforts may be governed, supported or otherwise impacted by a specific state or federal law or program. Sometimes, a state or federal law, such as the federal Zuni River Watershed Act, specifies the objectives and activities of a particular watershed effort. Other laws may authorize financial or technical assistance to watershed efforts. Oregon's Watershed Enhancement Board program legislation authorizes financial and technical assistance to watershed groups that meet certain criteria and follow specific procedures. State and federal resource management laws often impact the activities of watershed efforts. For example, section 404 of the federal Clean Water Act requires a permit from the U.S. Army Corps of Engineers before a wetlands area may be altered.

1. Federal Laws Authorizing, Assisting or Influencing Watershed Efforts

A broad range of federal laws affects natural resources management; these laws have varying impacts upon watershed efforts. The Clean Water Act, Endangered Species Act,

National Environmental Policy Act, National Forest Management Act, Federal Land Policy and Management Act, Wild and Scenic Rivers Act and the Native American Graves Protection Act are examples of federal laws that affect watershed efforts under specific circumstances.

The Clean Water Act requires states to develop and implement water quality standards in accordance with the Act and Environmental Protection Agency regulations. Many watershed efforts benefit from section 319 of the Clean Water Act, which authorizes funding to control nonpoint source pollution. Nonpoint source pollution is runoff from areas impacted by human activities, such as timber cuts, strip mines, city streets, farms and rangeland, that carries sediment and other pollutants to aquifers and streams. Under section 319, states may obtain grants for water quality protection activities, educational materials and programs, and special studies and projects.

Section 404 of the Clean Water Act frequently applies to watershed restoration projects. This section establishes a permit requirement for dredging and filling in areas of water, including areas saturated by groundwater that produce wetland vegetation. Extra procedures must be satisfied and costs incurred to implement projects subject to section 404 permits. On the other hand, section 404 requirements are a major tool that watershed groups can use to leverage broader, cooperative efforts.

Recognizing the many laws and regulations affecting their watershed effort, participants in the Upper Carson River Watershed Management Plan formed a working group (Upper Carson Group) to identify all the major permits required for river and wetland restoration projects in the watershed. To expedite the permitting processes, the Upper Carson

Group is creating a list of instructions explaining which permits are necessary for which projects and how to successfully complete each permitting process. The Upper Carson Group reports that it routinely obtains the required permits for its watershed projects in record time; its record for obtaining a section 404 permit under the Clean Water Act is two weeks, significantly shorter than the usual time of several months or more.

The Endangered Species Act (ESA), which protects species listed under the Act as either threatened or endangered, prohibits any federal agency action that may jeopardize a listed species or adversely modify its critical habitat. The Endangered Species Act also makes it unlawful for any person to "take" an endangered species, which is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

The Recovery Implementation Program for Endangered Fish Species in the Upper Colorado (Recovery Program), which strives to protect and enhance four endangered fish species, was developed as a result of the ESA. The Recovery Program is designed to satisfy the ESA obligations of water projects authorized, constructed or funded by federal agencies. The Recovery Program is a cooperative effort involving many of the agencies and organizations that have an interest in how the upper Colorado River basin is managed.

At times, federal laws have specifically directed the establishment of watershed efforts. The Zuni River watershed effort is governed by two federal laws enacted by Congress in 1990 and 1992. The first of these laws applies to the Zuni Indian Reservation and the other applies to the watershed upstream from the reservation. In 1981, the Pueblo of Zuni sued the United States for damages to Zuni lands resulting from agricultural and logging practices that were

encouraged and initially sponsored by the federal government. A settlement between the Pueblo of Zuni and the United States led to the Zuni Land Conservation Act of 1990⁸ and the Zuni River Watershed Act of 1992,⁹ which govern natural resource planning in the Zuni River watershed. The Zuni Land Conservation Act set up a trust fund to restore lands on the reservation and implement traditional Zuni agricultural practices. The Zuni River Watershed Act requires the Natural Resources Conservation Service, Forest Service, Bureau of Indian Affairs, Pueblo of Zuni, Ramah Band of the Navajo Tribe, Navajo Nation, State of New Mexico and private landowners to cooperate in formulating a watershed plan that will protect and rehabilitate cultural and natural resources on tribal, public and private lands in the watershed.

Turning to another example, Congress created the Trinity River Task Force to address salmon habitat problems in the Trinity River watershed. The Trinity and Lewiston Dams have resulted in reduced Trinity River flows, which are no longer sufficient to remove the accumulated sediment from logging. The increased amounts of sediment have buried salmon spawning beds, causing a drastic reduction in the salmon population. In response, the Trinity River Task Force established the Trinity River Restoration Program (TRRP), which is comprised of fourteen federal, state and local agencies.

The TRRP contracted with the Trinity County Resource Conservation District on Grass Valley Creek to work with landowners on implementing erosion and sediment control projects

⁸ Zuni Land Conservation Act, Public Law No. 101-486, 104 Stat. 1174 (1990).

⁹ Zuni River Watershed Act, Public Law No. 102-338, 106 Stat. 866 (1992).

in cooperation with the TRRP. The TRRP also provides funding to a Coordinated Resource Management Planning Group working on the South Fork of the Trinity River.

2. State Laws Authorizing, Facilitating or Influencing Watershed Efforts

State laws may authorize, facilitate or otherwise influence watershed efforts. In a few cases, a state law lays out a comprehensive scheme for encouraging the formation of watershed efforts. In 1995, the Oregon Legislature amended the 1987 Governor's Watershed Enhancement Board program (GWEB) to support communities in organizing local watershed councils and to allocate money from state lottery funds for councils.¹⁰

Under the amended GWEB program, local governments appoint local watershed councils to work with state agencies in developing and implementing watershed action plans. The local watershed councils work with state and federal agencies and interest groups to study their watersheds, assess problems and find ways to solve the identified problems.

In other instances, state laws are more narrowly drawn and directed towards a specific watershed or resource problem. In 1985, the Washington Legislature declared the Nisqually River a river of state-wide significance and directed the Washington Department of Ecology to write a Nisqually River Management Plan.¹¹ In this plan, the Department recommended creating the Nisqually River Council, a group comprised of personnel from different agencies and committed to the protection and enhancement of the Nisqually River basin. In 1987, the Legislature adopted the plan, and the Council was created. The Council coordinates the

¹⁰ 1995 Oregon Laws, Ch. 197. The former program is also known as the Watershed Health Program.

¹¹ 1995 Washington Laws, Ch. 244.

Nisqually River Management Program, which includes water quality, habitat management, education and land acquisition activities.

3. Agency Accommodations of Watershed Efforts

Even when no specific law is involved, government agencies may choose to work with watershed groups. For example, state agencies responsible for setting water quality standards and issuing citations for water quality violations often cooperate with local watershed groups; the state agencies may seek to accommodate within their implementation and enforcement programs the water quality improvement efforts of the watershed groups.

The Animas River Stakeholder Group (Stakeholder Group) in Colorado asked the Colorado Water Quality Control Commission (Commission) not to impose more restrictive water quality regulations on the river. Instead, the Stakeholder Group wanted the opportunity to analyze the water quality problems and devise its own solutions. In response to the request, the Commission gave the Stakeholder Group a limited period of time to solve the water quality problems in the Animas River without Commission interference. The Stakeholder Group has three years to improve the water quality in the Animas River to a point sufficient to sustain brown trout.

Similarly, the Utah Division of Water Quality has delayed the issuance of citations for certain water quality violations on the Little Bear River while the Little Bear River Steering Committee works with the landowner on the problem. After approximately six years of implementing restoration projects and improved land use practices along the Little Bear River, the Steering Committee has established a reputation among the Utah agencies for being effective in solving water quality problems.

III. PRACTICAL CONSIDERATIONS CONCERNING THE ORGANIZATION AND MANAGEMENT OF WATERSHED EFFORTS

A. How are Watershed Efforts Initiated?

1. Entities that Can Effectively Initiate Watershed Efforts

Watershed efforts have been initiated by citizens and private groups and by local, state, federal and tribal governments. How local communities perceive the initiating entity can be important to the success of a new effort. Watershed group participants frequently cited the cooperation and involvement of local interests as essential to an effective watershed effort. Three examples, the Clear Creek Watershed Forum, the Eagle River Management Plan and the Muddy Creek Project, illustrate how various watershed efforts have started as the result of local, state and federal initiatives. A fourth example, the Bitterroot Watershed Forum, depicts an effort initiated by a group of citizens.

The Clear Creek Watershed Forum in Colorado was started by the U.S. Environmental Protection Agency (EPA) as a pilot for its Watershed Protection Approach. EPA developed the watershed approach to seek cooperative, integrated solutions on a basin-wide scale to pollution and habitat degradation problems. The initial effort in Clear Creek, the Clear Creek Coordinating Council, proved to be ineffective because residents in the watershed rejected what they perceived as EPA interference in the management of the basin. As a result, the EPA, with the help of the Colorado Department of Health, began coordinating public conferences on watershed issues. Residents seem comfortable with the public conferences, known as the Clear Creek Watershed Forum, which provide them with an opportunity to network and collaborate on projects undertaken by groups other than the Forum. Those

attending conferences have collaborated on projects such as creating a spill alert telephone network to inform downstream users of upstream spills and cleaning up old mining sites.

The Eagle River watershed planning effort in Colorado, on the other hand, was started by a local entity, Eagle County. Because the Eagle River basin is located entirely within Eagle County, the county was particularly suited to initiate the effort. Eagle County solicited the involvement of several federal and state agencies. Municipalities, businesses, interest groups and citizens within Eagle County are also involved. These groups have put together a plan for the basin that takes into account water quality, water quantity, wildlife, recreation and land use.

The Muddy Creek Project in Montana began partly because the Montana Department of Natural Resources and Conservation (Montana DNRC) organized a public meeting to discuss water quality problems in Muddy Creek. The Muddy Creek Task Force, the group carrying out the Muddy Creek Project, was created with the help of the Montana DNRC and in cooperation with local governments, businesses, citizens groups and landowners. Alan Rollo, Coordinator of the Muddy Creek Project, observed that an outside agency, in this case the Montana DNRC, may furnish the impetus needed to bring parties together to solve problems. However, the Muddy Creek Task Force is a local citizens group, and representatives from federal and state agencies serve only as consultants; they are not voting members on the Task Force. Thus, while the Montana DNRC served an important role in initiating the group, local citizens control the group and its direction.

In contrast to the Muddy Creek Project, citizens residing in the Bitterroot Valley southwest of Missoula were responsible for initiating the Bitterroot Watershed Forum. Five

members of the community concerned about water and the future of the valley started a dialogue about water use and water quality. Members of this initial group represented a wide range of interests, including ranchers, domestic water users, agricultural irrigators, environmentalists, private property rights advocates and recreationists. They invited speakers from the Montana Department of Natural Resources and the local university to address them and other civic groups on water issues. The initial group also developed a mission statement, goals and objectives, and sent a letter to the county commissioners requesting a study on water issues. As interest in the activities of the initial group grew, the initial group, with the help of the local resource conservation and development project, invited about twenty members of the community representing diverse perspectives and backgrounds to form a management committee for the Bitterroot Water Forum. Other stakeholders, including government agency representatives, were invited to attend meetings but do not share in the decision making of the management committee. The management committee, which has established sub-groups for particular issues such as water quality, also uses consultants as needed to address issues.

2. Resources Helpful in Initiating a Watershed Effort

No standard formula exists for organizing a watershed group; the resources needed to initiate a watershed group vary widely with the size of the watershed, the scope of the problems to be addressed, the breadth of participation in the initial stages of the effort and other factors. However, nearly all watershed groups have these elements in common: a coordinator or organizer, a broad range of participation and outside technical assistance. Although these three resources come in different forms and may become part of watershed

efforts in different sequences, these elements appear to be critical to the sustainability and effectiveness of watershed efforts.

a. Appoint a Coordinator

Most watershed groups find that a coordinator, whether an individual, an organization or a governmental entity, is essential to organize and help direct the group. While the coordinator's role and responsibilities vary from group to group, typically the coordinator helps organize the interested parties by scheduling and conducting meetings, serving as a contact person, taking the lead in implementing group decisions and undertaking many of the administrative tasks necessary to keep the group informed and acting in concert. The usefulness of a coordinator can be seen in many watershed efforts, including the Upper Arkansas River Watershed Initiative, the Coquille Watershed Association and the McKenzie Watershed Council.

The Upper Arkansas River Watershed Initiative (Arkansas Initiative) in Colorado was started by the Environmental Protection Agency, the Bureau of Reclamation and the Colorado Departments of Health and Natural Resources, who wanted to coordinate their work in the watershed. These agencies drafted a basin-wide work plan but were unable to progress without more participation from local governments, landowners and other agencies working in the basin. When the agency participants became frustrated at their inability to make progress, they hired a local watershed coordinator through the Sangre de Cristo Resource Conservation and Development Council.

In addition to working with the federal agencies, the coordinator was able to work with local landowners and local governments to broaden support for the Arkansas Initiative.

The group has continued to progress and build momentum. For example, the Arkansas Initiative sponsors the Upper Arkansas Watershed Forum which is open to resource managers and anyone else interested in Arkansas River issues. Approximately 150 people ranging from local government officials, agency personnel, realtors, business owners and other interested citizens attended the 1995 forum. On the evaluation forms, one conference participant commented that the forum was a "great way to mix ... folks ... for meeting and talking with one another."

In some groups, the coordinator is responsible for the full range of administrative tasks associated with running a watershed group; in others, a separate individual or entity performs some of the administrative duties. The Coquille Watershed Association in Oregon hired a coordinator on a temporary basis to get the association started. The coordinator was charged with overseeing the implementation of on-the-ground projects. Thus, the coordinator's responsibilities included organizing members for project activities, obtaining materials needed for the projects and coordinating the projects with agency programs in the watershed. The Coquille Watershed Association uses the Coos Soil and Water Conservation District to manage its funds and provide other administrative services.

The Lane Council of Governments (Lane COG), a county-wide intergovernmental planning agency, coordinates and carries out administrative tasks for the McKenzie Watershed Council in Oregon. Instead of having one person in charge of coordination work, the McKenzie Watershed Council determined it would be more effective to rely on an existing coordinating entity, the Lane COG. The COG coordinates staff members, performs administrative duties, assists the chairpersons in developing an agenda, serves as a central

contact point for participants and the public, and monitors the work program and budget. One participant noted that the Lane COG brings to the Council resources that could not be matched in an individual coordinator.

b. Generate a Broad Range of Participation

Many watershed efforts have embraced the proposition that programs and projects developed collaboratively by a group open to participation by all interest groups and interested citizens will be more effective than if developed by a less inclusive group — more effective in the sense that the outcomes will be more durable and comport more closely with community values. Direct participation by non-government stakeholders, both groups and individuals, is viewed as an indispensable element of a successful effort. Under this approach, the many parties affected by activities in the watershed, including local residents, businesses, government agencies and others, should have the opportunity to make their concerns known and take part in resource management decisions.

The Coeur d'Alene Basin Restoration Project (Coeur d'Alene Project or Project) in Idaho has succeeded in involving a broad spectrum of citizens, organizations and agencies, including the U.S. Environmental Protection Agency, the Idaho Division of Environmental Quality, the Coeur d'Alene Tribe, businesses and residents.

Although watershed degradation can come in many forms, the Coeur d'Alene Project addresses metal contamination problems caused by a century of metal mining and refining. Significant human health risks from the contamination of certain waters and soils threaten local communities. Medical professionals do not know all the potential human health risks,

but are particularly concerned about elevated blood lead levels found in children within specific areas of the basin.

While health programs and contamination cleanup activities are developing, the Coeur d'Alene Project endeavors to curtail human health risks by educating the public about potential sources of contaminated water or fish. Participation by local communities, including local newspapers and media, has dramatically improved the effectiveness of the public education program. The Coeur d'Alene Project's public outreach program includes an active Citizens' Advisory Committee, public presentations, field trips and distribution of a monthly newsletter.

With a broad range of participation, more resources are often available to a watershed effort. The Coeur d'Alene Project illustrates how a broad range of participation can enhance the pool of available resources. No one entity, public or private, can afford the total cost of cleaning up the contamination in the Coeur d'Alene River basin, which is estimated at about \$1 billion. However, the State of Idaho, the Coeur d'Alene Tribe and several federal agencies have pooled together about \$250,000 every year. By the summer of 1994, about \$6 million had been contributed to the Coeur d'Alene Project.

In addition, local residents and organizations have contributed additional money through cost-sharing programs sponsored by the Coeur d'Alene Project. Information and technical expertise are shared among local, state, federal and tribal organizations in the basin. Agencies use their expertise to develop environmental objectives for the basin, and mining companies, with the expertise and equipment to do the on-the-ground tasks, carry out the

cleanup projects. The participants support this coordination and division of labor because it puts money to its most productive use and also employs local residents.

Watershed efforts have found broad-based participation helpful in solving problems because many of the people and entities who live or are located in the watershed contribute to watershed problems. Typically, watershed groups themselves do not have authority to regulate those who are the cause of the problem. Instead, the watershed groups strive to get people within the watershed to voluntarily join together and resolve problems. Although the voluntary nature of most watershed efforts is often seen as a strength, it is also a significant potential weakness. Unless the participants believe that the voluntary solution developed by the watershed effort is better than the available government-initiated alternatives or possible litigation outcomes, the voluntary solution may remain a paper solution.

Like most other watershed groups, participants in the Coeur d'Alene Project face a myriad of problems. Besides the metal contamination, the Coeur d'Alene Project is working to remedy water pollution problems caused by municipal wastewater treatment facility discharges into river systems and residential septic system discharges of phosphorous into drinking water supplies. The Project is also focusing on improving severe erosion problems caused by agricultural, timber harvesting and livestock grazing practices and recreational activities.

To address these problems and involve as many people as possible, the Coeur d'Alene Project set up a variety of activities and programs and established an inclusive decision making structure. For example, the Project helps local residents upgrade their septic systems through a cost-sharing program designed to reduce the amount of phosphorous discharged into

the water supply. Additionally, the Coeur d'Alene Project organized a Citizens' Advisory Committee and promotes broad public participation at all Project meetings.

According to Project participants, their success so far is attributed to community members and agencies each shouldering some responsibility for the problems in the watershed. Instead of wasting time and energy on placing blame, they create cost effective ways to deal with the problems.

c. Obtain Technical Assistance

A watershed group needs technical assistance to assess and identify alternative solutions to the resource problems within the basin. Without a sound, scientifically-based understanding of the problems and alternative solutions, watershed groups cannot effectively address problems within the watershed. Technical assistance can come from public or private sources or from local residents who have acquired detailed knowledge about the watershed over the years. Groups often receive technical help from federal, state or local agencies, university extension offices or private sector consultants. Local residents participating in watershed groups are sometimes wary of the possibility that technical experts will drive the group's decision making. The experience of a number of watershed groups has proven such an outcome can be averted.

Where community members are the group decision makers, they need not surrender their decision making authority when seeking technical assistance from a government agency or any other source outside the group. The outside assistance may be confined to a role of helping the local group make educated choices concerning the group's direction.

The Otter Creek Steering Committee (Steering Committee) in Utah has a technical committee, which coordinates scientific research in the watershed and advises the Steering Committee on technical matters. In this watershed effort, the Steering Committee, consisting primarily of landowners, decides which projects the group will undertake. The technical committee supplies information on the hydrological and biological conditions in the watershed and provides advice on how to alter land use practices, particularly agricultural activities such as irrigation and animal waste disposal, in order to address water supply and water quality problems. The technical committee also recommends particular stream restoration projects that will improve water quality conditions and explains how to implement these projects.

The Yampa River Basin Partnership (Yampa Partnership), which is developing its organizational structure, discovered that technical information is important in setting goals and objectives for the group. To get started, the Yampa Partnership organized a public conference to educate the public on watershed issues and to set objectives for the effort. During the first part of the conference, water resources engineers, biologists, land use planners and other technical experts were asked to speak about the problems in the watershed. In the second part of the conference, participants worked in small facilitated discussion groups to set objectives for the Yampa Partnership.

Thus, experts were utilized to inform the participants about basic scientific and technical issues important to the watershed so everyone had some background before they made decisions about the group's direction. Conference speakers talked about issues such as managing rapid growth in the area, land use planning and protecting local agricultural interests. As with the Otter Creek Steering Committee, the technical experts in the Yampa

Partnership did not dominate, and sometimes did not directly participate, in group decision making. Instead, they provided information and options so the decision makers could make informed decisions.

3. Common Challenges in Initiating a Watershed Effort

Each person who has initiated or coordinated a watershed effort can offer dozens of suggestions and lessons learned through participation in the group effort. Out of these numerous suggestions, several common themes emerge. First, education of participants in the watershed effort and the general public on watershed issues should be an early thrust of the effort. An effective education program will help build support for the watershed effort and avoid misunderstandings about the effort. Second, to avoid unproductive meetings and planning processes, concrete goals should be established for the group and for each group activity. Third, meaningful problem solving requires identification of the root causes of problems, not merely treatment of the symptoms.

According to experienced participants, time spent educating members of a watershed group and the public in general on watershed issues and the purposes of the group is well invested. Members of the Clear Creek Coordinated Resource Management and Planning Committee (Clear Creek CRMP) in Idaho believe that more focus on education and public participation at the beginning of their process would have benefitted the effort. The Clear Creek CRMP consists primarily of government agencies with some participation from individual landowners. With better education and public outreach, landowners might have been more receptive to the effort and participated more readily in projects.

Additionally, concrete goals, set by the watershed group, provide direction and lay the foundation for a productive effort. Participants in the John Day Basin Council in Oregon became frustrated after the group met for several years but accomplished very little. They recommended setting specific goals and establishing a structure and agenda for meetings. In their experience, long planning processes with no deadlines and inadequate structure can seem pointless, and people become discouraged and lose interest.

Finally, several group coordinators recommend avoiding quick and dirty solutions to watershed problems. According to Chad Gourley, who coordinates the Lower Truckee River Restoration Steering Committee (Lower Truckee Committee) in Nevada, quick solutions that temporarily fix the symptoms of problems do not lead to long-term success. *Many of the* Lower Truckee River basin's problems have evolved from years of watershed degradation. Finding and applying effective solutions may take a significant period of time.

For example, the Lower Truckee Committee is working to foster the growth and reproduction of cottonwood trees along the river corridor. Mr. Gourley believes that planting new cottonwood trees alone will not permanently resolve the problem because the flow patterns in the river have contributed to the loss of cottonwood growth. Consequently, the Lower Truckee Committee is also addressing the water flow problems.

Thus, watershed group participants recommend focusing initially on educating interested parties in the watershed, then setting concrete goals and ultimately working to resolve the root cause of the problems rather than the symptoms. While each watershed group faces unique challenges, these lessons are basic enough to apply to all groups.

B. How Can Participants Stabilize a Watershed Effort so People Will Stay Involved and the Effort Will Remain Productive?

Once the watershed effort is organized and under way, the next challenge is to stabilize the effort so it remains productive and continues to grow. Watershed efforts can fail because the members simply tire of working on problems in the watershed or they lack direction or momentum to continue the effort after the initial problem motivating the effort is addressed. Like any other voluntary organization, watershed groups can wither and die because of conflict, frustration or loss of interest.

There is no step-by-step formula for sustaining a dynamic watershed organization. However, watershed group leaders suggest that to be sustainable a watershed group must have a long-term vision and a solid structure with realistic goals; it must build support among the participants and the public for the group's work. The structure should include a plan or set of objectives to implement the vision and rules and guidelines for decision making.

1. Structural Aspects of Decision Making Processes Affecting Stability

Participants in watershed groups generally agree on three recommendations with respect to a group's decision making process; each recommendation is intended to enhance group effectiveness and stability. First, the use of a facilitator to conduct the meetings tends to improve the efficiency and productivity of the group. Second, a decision making structure that will prevent deadlock should be implemented as early as possible. Third, the scope of the watershed effort should be manageable and realistic in terms of the geographical area addressed, the number of participants and the type and number of issues and activities on the group's agenda.

a. Appoint a Facilitator

Many watershed groups use a facilitator to conduct meetings. A skilled facilitator can improve the productivity of meetings, maximize participation in discussions and manage conflict among participants on controversial issues. The experiences of three watershed efforts illustrate the potential advantages of selecting a facilitator.

The meetings of the Henry's Fork Watershed Council (Council) in Idaho are conducted by co-facilitators from two member organizations, the Fremont-Madison Irrigation District (District) and the Henry's Fork Foundation (Foundation), who were previously adversaries on many basin issues. The Foundation, an advocacy organization for conservation and recreation interests, and the District insist that the two facilitators appear together in all public discussions of matters affecting the Council. The Council's co-facilitators play an important role in the group's consensus-based decision making. All participants must agree on a decision before it becomes final, and the co-facilitators are responsible for determining when the group has reached consensus. This co-facilitation arrangement by persons representing interest groups traditionally believed to have little common ground has contributed significantly to the credibility of the Council; Council members appear to trust and respect this facilitation team.

The Nooksack River Watershed Initiative (Watershed Initiative) in Washington has also turned to facilitators to conduct its meetings. In this case, however, the facilitation team are paid professionals without any stake in the Watershed Initiative rather than members of the initiative. The Washington Department of Ecology coordinates this watershed effort and chose an outside facilitation team to enhance the credibility of the effort among the local

participants. When a group member is conducting a meeting, other participants may conclude that the biases of that person are unduly influencing both the process and the outcomes.

When a neutral facilitator is running the meeting, participants are less inclined to believe the meetings are conducted to benefit a particular viewpoint or group. By selecting a professional facilitator, however, an opportunity to build leadership capabilities within the group is foregone.

The Paradise Creek Water Quality Management Committee (Paradise Committee) also uses a facilitator to conduct its meetings. According to Bruce Davis, a member of the Paradise Committee, the group credits its success to individual members who are extremely active in the meetings and adept at drawing other members into the discussion. Even though the Paradise Committee relies on a facilitator, all group members share responsibility for creating a receptive, productive atmosphere.

b. Choose a Decision Making Structure That Will Avoid Deadlock

The success of a watershed group depends in part on the implementation of a fair and workable decision making structure. While one goal is to include as many people as possible in the organization, another goal is to prevent frequent deadlocks within the decision making process. Many watershed efforts require total consensus or unanimity of the group in order to make decisions. According to Anne Donnelly, Coordinator of the Coos Watershed Association, consensus decision making can enhance participation because no one is discouraged from joining the group out of fear of being "outvoted."

At the same time, a watershed group needs a mechanism to protect it from repeated deadlocks and "hold-outs," where a few people refuse to join the consensus to the detriment

of the whole group. Dan Kaffer, who coordinated the Upper Carson River Watershed Management Plan during its first year and helped organize the Feather River Coordinated Resource Management Group, indicates that where unanimity is required, a single participant can veto an otherwise popular idea for reasons unrelated to the issues being decided. The participant may refuse to join the consensus until an unrelated decision is made in the participant's favor. Regardless of the decision making mechanism selected, the experience of watershed groups generally indicates it is critical to set ground rules establishing both who is eligible to vote and how group decisions will be made.

The San Pedro Coordinated Resource Management Group (San Pedro CRM Group) in Arizona never agreed to a specific decision making structure but agreed to require total consensus on all decisions. Because the meetings were open to anyone who wanted to attend and vote, new people could show up after weeks of discussion and prevent the group from reaching consensus with a single veto. Some participants eventually grew frustrated with the lack of a workable decision making process and stopped attending.

One possible solution to this dilemma was adopted by the Upper Rogue Watershed Council in Oregon, which decided to abide by an eighty percent super majority vote if total consensus could not be obtained. Other watershed groups require only a simple majority for decisions. The Upper Rogue Watershed Council and some other watershed groups also specifically define who is eligible to vote. This reduces the types of difficulties faced by the San Pedro CRM Group.

c. Define the Scope of the Effort

Another factor affecting the sustainability of a watershed effort is the scope of the activities undertaken by the group. As with any endeavor, a realistic scope enhances the likelihood of success. The concern about the scope of activities is especially relevant to newly-formed efforts, which are occasionally overwhelmed by the large geographic area of the watershed, the number and variety of interests and individuals seeking to be involved or the myriad of intractable issues on the group's agenda.

i. Geographic Area

Where the area initially chosen, whether one watershed or a group of watersheds, encompasses an extensive geographic area, the sheer size of the physical area, the abundance and diversity of issues or the disparate opinions about those issues may militate in favor of focusing on a more limited area. In the cases of the Dungeness-Quilcene Pilot Planning Project and the John Day Basin Council, the geographic area initially addressed by each group was too broad for it to be handled effectively.

The Washington Legislature created the Dungeness-Quilcene Pilot Planning Project (Dungeness-Quilcene Project) to serve as a model for a regional water use plan. The project boundaries were initially set to encompass the entire northeastern portion of the Olympic Peninsula containing two watersheds, the Dungeness and Quilcene River basins, along with other areas outside the two basins.

After the Dungeness-Quilcene Project was under way, the participants determined that the geographic scope was too broad for one group to address in a regional water management planning process. As a result, the project was split into two efforts, one studying the

Dungeness River watershed and the other studying the Quilcene River watershed. In evaluating the pilot planning process, the participants explained that distinct differences between the two major watersheds made joint planning unrealistic and recommended limiting future planning efforts to one watershed or an area with significant commonalities.

The John Day Basin Council in Oregon, which was formed in 1987 but is no longer meeting, also has had difficulties due to the large area addressed by the group. The John Day River watershed encompasses approximately 10,000 square miles in east central Oregon. The travel time from one end of the basin to the other is about four and a half hours. Most residents in the lower portion of the basin were unable or unwilling to travel the 150 miles to the more populated upper basin for meetings. Many members believed the entire basin was too large for an effective group, but there were too few people in the lower basin to form a sub-basin group. As a result, members from the lower basin did not attend meetings regularly, and many group members were frustrated by the lack of progress and participation. The frequency of the meetings declined, and recently the group dissolved.

ii. Participation

While some watershed groups have difficulties getting citizens within the watershed to participate, others struggle to coordinate the many people who want to be involved. Sometimes, the exact number of people is of less concern than the willingness of group members to be constructive, particularly when the group is dealing with divisive issues. Undue antagonism among participants can severely impede a watershed effort.

For example, the Mattole Watershed Alliance in California has focused on healing a deep schism among residents over forestry practices and related issues in the sparsely

populated watershed. Since the timber industry has operated in the Mattole River watershed for years, many residents are directly affected by and have strongly-held opinions about forestry issues. However, the severe antipathies among various factions over those issues, particularly which forests should be protected and which should be logged, has cast uncertainty over whether the Mattole Watershed Alliance will continue meeting.

Even in a group without a history of discord, the number of people involved can significantly impact the effectiveness of the group. The Lolo Creek Coordinated Resource Management Group (Lolo CRM Group) in Idaho endeavored to keep the group to a manageable size that would remain productive. The Clearwater Soil and Water Conservation District (Clearwater SCD) initially called a meeting to organize the Lolo CRM Group, and over thirty landowners, agencies and other interested citizens attended. At the meeting, community members decided that a smaller group would be more effective.

Additionally, the Lolo CRM Group organized smaller sub-groups to address specific areas within the Lolo Creek watershed. Mike Hoffman at the Clearwater SCD highly recommends the use of sub-groups to address areas or specific issues within the watershed. He commented that the sub-group addressing Jim Brown's Creek, a tributary of Lolo Creek, has been more productive than the entire Lolo CRM Group, in part because the smaller group is easier to manage. Many watershed efforts make similar use of sub-groups or sub-committees.

Another watershed effort that initially restricted its membership is the Bitterroot Water Forum. Now that the group is established, it is gradually expanding in size. The Bitterroot Water Forum began with five people who lived in the Bitterroot River basin and had different

backgrounds and political views. Since 1993, it has expanded to approximately thirty members. According to Jean Atthowe, the group intends to continue expanding its membership by inviting others to join. By expanding the membership gradually as the effort develops a structure and direction, the Bitterroot Water Forum hopes to form a strong, stable group.

While the challenges related to group participation are different with every effort, many groups monitor their size in order to keep their activities and processes manageable and productive. Size can be adjusted during the process as with the Lolo CRM Group, whose participants agreed to downsize the group and use sub-groups, and the Bitterroot Water Forum, which is gradually adding members.

iii. Activities and Problems

Resource limitations typically cause watershed efforts to curtail, at least in the early stages, the number of problems considered and the breadth of activities undertaken. Some groups may also impose constraints on their activities in order to focus on development of a common understanding of the watershed before attempting to resolve outstanding issues. The Umatilla Basin Council and the Rio Grande Joint Initiatives have taken two very different approaches in framing the activities and direction of their groups.

The Umatilla Basin Council in Oregon designed a sequence of activities for the group, beginning with an educational effort focusing on the watershed itself and important watershed issues. Educational presentations and field trips addressed issues such as salmon habitat and reintroduction and the concerns of the Confederated Tribes from the Umatilla Indian Reservation.

After the educational effort, the Umatilla Basin Council turned to a comprehensive watershed study, which involves data collection and identification of specific watershed problems and potential funding sources. After the study is complete, the Council intends to design and construct projects dealing with specific problems in the watershed. This deliberate progression of activities from education to planning to on-the-ground projects allows the watershed effort to get organized and define goals and priorities before addressing specific problems.

In contrast, the Rio Grande Joint Initiatives (Joint Initiatives) in New Mexico was organized specifically to evaluate three possible modifications to reservoir operations in the Upper Rio Grande basin. Thus, it did not undertake a comprehensive study of the watershed or an evaluation and prioritization of projects prior to selecting its initial projects.

A separate group within the Joint Initiatives works on each project, and all the groups meet together annually to review their progress. As a result, some groups are no longer meeting because their project has concluded. A new group was recently formed to take on the task of implementing the Rio Grande Bosque Biological Management Plan.

The relatively narrow scope of the Joint Initiatives, focusing exclusively on specific projects, is intentional. The agencies who organized the effort consciously chose a project emphasis rather than a comprehensive watershed approach. Participants indicate the collaborative process for evaluating projects in the Upper Rio Grande basin has worked well; the Joint Initiatives has succeeded in launching productive discussion among agencies, completing projects and building cooperation among the member agencies.

2. Using Initial Activities to Foster Trust and Stability

Early activities designed to enhance trust among the participants can lead to a more cohesive watershed group. Organizing activities to improve trust may be especially important when participants have a history of weak or hostile relationships. To build momentum for larger projects, several watershed groups started with small demonstration projects, focusing on common goals and investing time to develop communication and understanding among the participants.

a. Undertaking a Small, Successful Demonstration Project

Success builds confidence, and watershed efforts in their initial organizational phase often undertake a widely supported project to get people involved and achieve an early positive image for the group. As one of their first activities, the participants in the Upper Salinas River Coordinated Resource Management Plan (Salinas CRMP) in California started a neighborhood watch and educational program called River Watch. Residents living near the river corridor were frustrated by excessive off-road vehicle use, illegal dumping and other trespass incidents. Because the River Watch program dramatically reduced the number of trespass incidents, residents were encouraged and developed confidence in and enthusiasm for the effort.

The Deer Creek Watershed Improvement Project (Deer Creek Project) in Utah also relied on initial, successful projects to build support with landowners. The purpose of the Deer Creek Project is to work with landowners in implementing restoration projects and alternative land use practices. The success of a few initial projects raised enthusiasm and interest among landowners, and several dairy farmers stepped forward to try new agricultural

practices that would keep animal waste out of the watercourses. Fourteen of the sixteen dairies in the area have completed major projects to alter the management of animal waste, and the water quality in Deer Creek Reservoir has improved substantially. The water now requires less treatment before residents use it for drinking water.

b. Focusing on Common Goals, Education or Non-Divisive Issues

Individuals and organizations often participate in watershed groups expecting to address difficult and controversial issues not resolved by traditional resource management agencies and processes. However, many participants in these efforts recommend avoiding controversy during the early stages of the effort so that common goals and interests can be established among the members.

For example, the Pecos River Native Riparian Restoration Organization (Pecos Organization) in New Mexico was organized to stop the spread of the salt cedar, a nonnative shrub that displaces native vegetation and uses a large amount of water. A proposal to use herbicides to eradicate the salt cedar created significant controversy due to the fear of side effects from the herbicide application. Before a productive discussion could take place on the use of herbicides, the participants in the Pecos Organization had to first find common ground, interests and goals. Specifically, everyone first agreed the salt cedar was a problem and native vegetation would be preferable. After common interests were established, the Pecos Organization worked to address the controversial issues one at a time.

The South Platte Forum in Colorado was organized to improve information sharing and communication among water users and concerned citizens along the South Platte River. At the South Platte Forum, speakers are invited to present and discuss papers they have

written on various issues affecting the South Platte River. While information exchange alone will not solve problems, the participants in the South Platte Forum believe the first step to problem solving is improving communication and understanding among the parties.

c. Fostering Communication and Mutual Understanding

Some watershed groups actively focus on group dynamics and relationships; they seek to enhance the group's ability to engage in joint decision making and problem solving. According to the co-facilitators of the Henry's Fork Council in Idaho, the group spent many of its first meetings engaging in interactive games to build rapport and improve communication among the members, which was lacking due to years of poor relationships. After meeting for over two years, the Henry's Fork Council continues to devote part of each meeting to improving communication among the participants. The group sets aside time at the beginning and end of each meeting for silence and thoughtful discussion by the entire group. Ground rules apply to these discussions to provide opportunities for all members to participate and to encourage both mutual respect and candid exchanges.

Similarly, the McKenzie Watershed Council in Oregon organized all-day watershed field trips to familiarize the members with the watershed and with each other. Meetings regularly include a roundtable discussion, where the participants present their concerns about and suggestions for the watershed. The McKenzie Council has found that these activities improve trust, facilitate understanding and contribute to the group's ability to use consensus to make important decisions.

Many group members agree that a tremendous amount of patience and time is required, particularly in the early stages of a watershed effort, to develop trust and positive relationships among participants.

C. Can Smaller Watershed Efforts Expand Their Scope or Influence?

Because many watershed efforts begin by addressing only part of the watershed or by including only some of the affected parties or issues, the question arises whether it is possible to expand the scope of an effort. Several watershed efforts that started with a limited geographic focus or membership have broadened their geographic scope, membership and/or overall influence through either formal or informal mechanisms.

The coordinator of the South Fork American River Partnership (Partnership) in California set up a framework to facilitate later expansion of the watershed effort. The initial effort was organized at two levels with the intent of later combining several groups into a unified watershed effort to address the entire South Fork drainage system. Designed to serve as an umbrella group, the Partnership examines issues facing the entire watershed. Several subwatershed committees address problems and implement projects in local areas. The Partnership and the subwatershed committees developed simultaneously and, to date, remain independent from one another except for overlapping membership. However, the Partnership coordinator and group members indicate they plan to eventually integrate the Partnership and subwatershed committees into one watershed group.

More by coincidence than by plan, the Rio Puerco River in New Mexico has two watershed efforts working at different levels and exchanging information about the watershed.

The Cuba Watershed Committee, consisting of landowners around the Village of Cuba and federal agency representatives, constructs restoration projects to reduce erosion and improve acequia (irrigation ditch) systems along the Rio Puerco River. Additionally, the Rio Puerco Watershed Interagency Group (Interagency Group), comprised of local, state and federal agencies, meets primarily to exchange technical information and coordinate agency activities in the watershed.

Because both groups share members representing the Forest Service, Bureau of Land Management and the Natural Resources Conservation Service, information, ideas and suggestions are exchanged between the groups. The two groups complement each other; the Interagency Group does not implement on-the-ground projects, and the Cuba Watershed Committee would not otherwise have convenient access to technical information. The overlapping membership of the two groups allows the agencies and landowners to work together in one subarea of the watershed.

In contrast to the previous examples where watershed groups linked up with each other to expand their influence and effectiveness, the Hood Canal Coordinating Council (Hood Council) in Washington expanded its base membership. The Hood Council originally consisted of three county governments and the Port Gamble S'Klallam and Skokomish tribes. In 1992, sixteen state and federal agencies and four local Watershed Management Committees joined the Hood Council. While the reorganization was disruptive and required many hours of work, several participants believe the expanded Hood Council is more effective and has broader influence within the watershed.

Finally, the Big Spring Creek Watershed Water Quality Project (Spring Creek Project) in Montana is expanding its geographic scope to address the entire 250,000 acre watershed. Because of the limited resources available, the Spring Creek Project started by constructing water quality restoration projects around the City of Lewiston. The Fergus County Conservation District, which coordinates the effort, is running advertisements in the local newspaper and over the radio to solicit local residents to attend the Spring Creek Project meetings.

D. How are Watershed Efforts Obtaining Funding?

All watershed groups, both new and experienced, struggle to find adequate funding to support their activities. Funding difficulties have forced many groups at some point to either cut back or temporarily halt their activities. Watershed efforts can generally be divided into three categories based on their funding patterns: (1) Groups that depend primarily on federal or state funding; (2) Groups that obtain their funding from group members and the larger community; (3) Groups that use a patchwork approach to funding by piecing together small amounts of money from many sources.

1. Federal and State Government Funding

Some federal and state government programs provide funding to qualifying watershed efforts. The Grande Ronde Model Watershed Program (Grande Ronde Program) in Oregon received funds from both the Northwest Power Planning Council (NPPC) and the Oregon Watershed Health Program. To determine to what extent local activities could assist salmon recovery efforts, the NPPC decided to fund three model watershed projects. As one of the

three projects, the Grande Ronde Program receives NPPC funding for two full-time staff members, additional part-time help and office space. The Oregon Watershed Health Program, which also provided funding for the Grande Ronde Program, promotes the development of local watershed councils and has awarded money to a number of watershed efforts.

Frequently, an agency will provide initial funding for a pilot watershed effort. Once the government funds are spent, participants in the pilot watershed effort must find other sources of funding to continue the effort. The State of Washington's Centennial Clean Water Fund, established with money from state cigarette taxes, provides funding to the Methow River Water Pilot Project Planning Committee to develop a watershed plan for the Methow River basin. Now that the planning process is complete, the group is determining how to fund implementation of the plan.

On occasion, a watershed group has the resources and political clout to obtain funding directly from the U.S. Congress. Examples are the McKenzie Watershed Council in Oregon, the Zuni Conservation Project in New Mexico and the Trinity River Restoration Program in California. A litigation settlement agreement between the Pueblo of Zuni and the United States provided money for the Zuni Conservation Project. Effective lobbying by local citizens and governments brought federal funding to the McKenzie Watershed Council and the Trinity River Restoration Program.

2. Fundraising Within Membership and the Community

A watershed group's membership and the larger community are frequently the source of part or all of the group's funding. Watershed groups seeking to avoid any financial dependence on or link to government agencies may deliberately choose to rely on non-

governmental sources. The Yakima River Watershed Council in Washington was able to raise over \$300,000 from membership and community contributions. The Santa Monica Bay Restoration Project created a foundation, which is currently soliciting contributions to implement a restoration plan for the bay.

In-kind services provided by members, community agencies and other entities can be at least as valuable to watershed groups as money. The Southwest Utah Planning Authorities Council (SUPAC) in Utah receives donations from its members in the form of office space, equipment and staff support. The Five County Association of Governments coordinates the financial affairs of SUPAC and provides necessary financial services. In addition, agency members, including the Bureau of Land Management and Fish and Wildlife Service, draft project proposals and donate staff and other agency resources to SUPAC.

3. Diverse Funding Sources

Funding for a particular watershed group often comes from a wide variety of sources such as government programs, private organizations within the community and membership contributions. The San Luis Rey River Comprehensive Planning Effort in California has received an assortment of grants from various sources, including the Environmental Protection Agency and the State Water Resources Control Board, to undertake a resource inventory, a water quality study and other projects.

An innovative fundraising approach has been adopted by the Mattole Restoration Council in California, which receives fixed amounts of grant money from mail order companies, including the Patagonia Company, to be used for planting trees. In its work to improve trout habitat, the La Barge Watershed Cooperative Management Project in Wyoming

receives financial support from the National Fish and Wildlife Foundation, which agreed to provide a fifty percent match for all nonfederal funds obtained by the project.

According to experienced group members, having a watershed management plan that describes the problems in the watershed and potential solutions is essential to any fundraising effort. Later, watershed groups will need to demonstrate progress and continued local support before they can obtain further funding. The McKenzie Watershed Council received \$500,000 of continued funding from Congress after demonstrating the effectiveness of its processes, which included well-defined objectives and decision making procedures. The McKenzie Watershed Council was also able to show that it used its federal funding effectively and supplemented it with in-kind services, cash donations and the use of existing programs and resources in the community.

IV. CONCLUDING OBSERVATIONS

The emergence of collaborative watershed efforts throughout the western states is a relatively recent phenomenon. The phenomenon is a response to the failure of traditional governmental approaches to address resource management issues in a manner that recognizes the problemshed, and the interrelationships of the issues, to coordinate and cooperate effectively among agencies and across the problemshed and to involve citizens and non-governmental groups in decision making in a meaningful fashion early in the decision making process.

The watershed efforts described in Part 2 of this source book vary dramatically in terms of the size of the watershed addressed, the number of participants, the activities undertaken, the decision making processes adopted and their accomplishments to date. But these watersheds share common attributes: an issue focus on one or more resource management problems related to the allocation, use or quality of water; a geographic scope that encompasses all or part of a watershed; an inclusive approach to participation that actively involves interested members of the local community or the larger public, whether as actual decision makers or in an advisory role; and a collaborative approach to decision making. Additionally, many watershed efforts share a fifth attribute: a broader, systems view of resource problems and potential solutions rather than a resource by resource, agency by agency, political jurisdiction by political jurisdiction approach.

This source book does not attempt to evaluate the achievements of watershed efforts. Have they succeeded in meeting their own goals? Have they fundamentally changed the relationships among conflicting interests in the watersheds? Have they made a measurable

improvement in the health of the watershed? Are they a mechanism for implementing existing federal and state laws in a more effective and more collaborative fashion? Are they a partial solution to the alienation many citizens feel with respect to government? These are questions for future research by the Center and by others.

We invite you to review the descriptions in Part 2, which only begin to reveal the richness of the experiences of watershed efforts, and to draw on both the details and the common themes in those descriptions to supplement the overview provided in this part of the source book.

PART 2

DESCRIPTIONS OF WATERSHED EFFORTS

I. INTRODUCTION

The descriptions of the watershed efforts contained in this part of the source book were developed primarily from telephone interviews conducted between March 1994 and July 1995 with people familiar with the efforts. For those seeking additional information about the efforts, the names of one or more contact persons are listed at the end of each description, along with reference materials where applicable.

The watershed-based efforts described in this part are organized by major regions in the western United States. Following this introduction is a map showing the regions and a comprehensive list of the regions and the watershed-based efforts identified by the Center within each region. Additionally, for each region, we have included a list of the watershed efforts described in this part and a corresponding map showing their location within the region. In some cases, the maps depict the entire watershed even though the watershed efforts encompass only a part of the watershed. This was done where the effort seems likely to move beyond political boundaries.

U.S. Water Resource Regions



LIST OF REGIONAL BASINS AND THEIR ASSOCIATED WATERSHED INITIATIVES

Columbia/North Pacific Coast

Clear Creek, ID
Coeur d'Alene River, ID
Henry's Fork, Snake River: ID, WY
Lemhi River, ID
Lolo Creek, ID
Middle Snake River, ID
Paradise Creek: ID, WA
Bitterroot River, MT
Blackfoot River, MT
Flathead River and Lake, MT
Kootenai River, MT
Upper Clark Fork River, MT
Applegate River, OR
Bear Creek, OR
Coos Bay, OR
Coquille River, OR
Grande Ronde River, OR
Illinois River, OR
John Day River, OR
Little Butte Creek, OR
Lower Deschutes River, OR
McKenzie River, OR
Middle Rogue River, OR
Umatilla River, OR
Upper Rogue River, OR
Walla Walla River, OR
Dungeness-Quilcene Rivers, WA
Hood Canal, WA
Methow River, WA
Nisqually River, WA
Nooksack River, WA
Willapa Bay, WA
Yakima River, WA

California\South Pacific Coast

American River, CA
Feather River, CA
French Creek, CA
Malibu Creek, CA
Mattole River, CA
Mokelumne River, CA
Morro Bay, CA
Mugu Lagoon, CA
Salinas River, CA
San Luis Rey River, CA
Santa Clara River, CA
Santa Margarita River, CA
Santa Monica Bay, CA
Trinity River, CA

Great Basin

Lower Truckee River, NV
Upper Carson River, NV
Bear River: UT, WY, ID
Chalk Creek, UT
Deer Creek Reservoir, Provo River, UT
Little Bear River, UT
Otter Creek, UT

Colorado River Basin

San Pedro River, AZ
Verde River, AZ
Animas River, CO
Colorado River Headwaters, CO
Eagle River, CO
San Miguel River, CO
Upper Colorado River Basin: CO, UT, WY
Yampa River, CO
Gila River: NM, AZ
Zuni River, NM
Virgin River, UT
La Barge Creek, WY

Missouri River Basin

Clear Creek, CO
South Platte River, CO
Big Spring Creek, MT
Greater Yellowstone: MT, ID, WY*
Muddy Creek, MT
Musselshell River, MT

Arkansas/Rio Grande River Basins

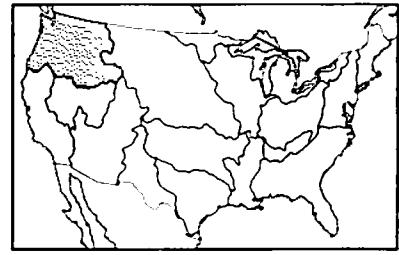
Upper Arkansas River, CO
Pecos River, NM
Upper Rio Grande, NM
Rio Puerco, NM

* The Greater Yellowstone Coalition covers an area that is located primarily in the Missouri Basin and also includes portions of the Columbia Basin, the Colorado Basin and the Great Basin.

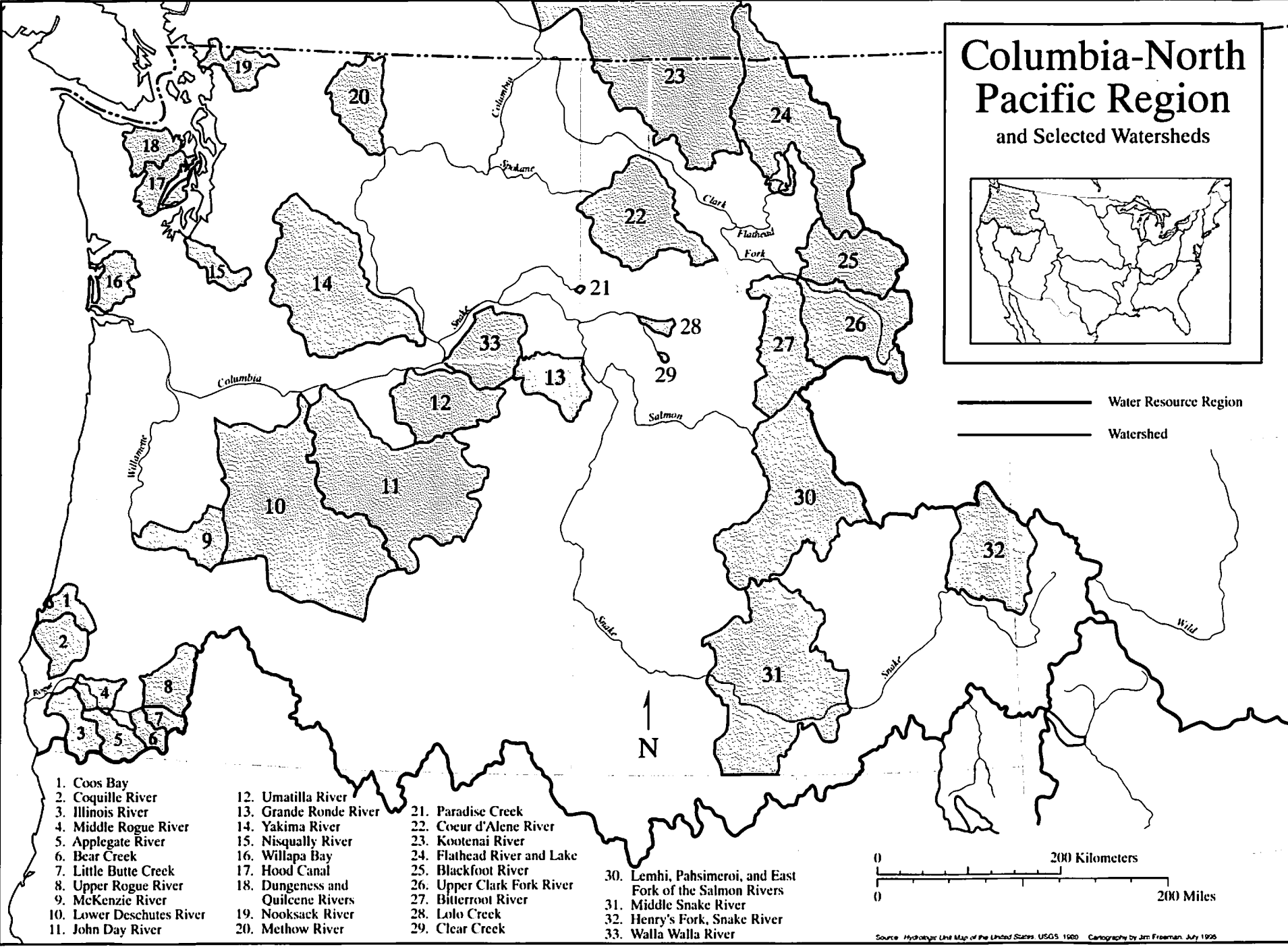
COLUMBIA/NORTH PACIFIC COAST

Clear Creek, ID
Coeur d'Alene River, ID
Henry's Fork, Snake River: ID, WY
Lemhi River, ID
Lolo Creek, ID
Middle Snake River, ID
Paradise Creek: ID, WA
Bitterroot River, MT
Blackfoot River, MT
Flathead River and Lake, MT
Kootenai River, MT
Upper Clark Fork River, MT
Applegate River, OR
Bear Creek, OR
Coos Bay, OR
Coquille River, OR
Grande Ronde River, OR
Illinois River, OR
John Day River, OR
Little Butte Creek, OR
Lower Deschutes River, OR
McKenzie River, OR
Middle Rogue River, OR
Umatilla River, OR
Upper Rogue River, OR
Walla Walla River, OR
Dungeness-Quilcene Rivers, WA
Hood Canal, WA
Methow River, WA
Nisqually River, WA
Nooksack River, WA
Willapa Bay, WA
Yakima River, WA

Columbia-North Pacific Region and Selected Watersheds



Water Resource Region
Watershed



- | | | |
|---------------------------|------------------------------------|---|
| 1. Coos Bay | 12. Umatilla River | 21. Paradise Creek |
| 2. Coquille River | 13. Grande Ronde River | 22. Coeur d'Alene River |
| 3. Illinois River | 14. Yakima River | 23. Kootenai River |
| 4. Middle Rogue River | 15. Nisqually River | 24. Flathead River and Lake |
| 5. Applegate River | 16. Willapa Bay | 25. Blackfoot River |
| 6. Bear Creek | 17. Hood Canal | 26. Upper Clark Fork River |
| 7. Little Butte Creek | 18. Dungeness and Quilecene Rivers | 27. Bitterroot River |
| 8. Upper Rogue River | 19. Nooksack River | 28. Lolo Creek |
| 9. McKenzie River | 20. Methow River | 29. Clear Creek |
| 10. Lower Deschutes River | | 30. Lemhi, Pahsimeroi, and East Fork of the Salmon Rivers |
| 11. John Day River | | 31. Middle Snake River |
| | | 32. Henry's Fork, Snake River |
| | | 33. Walla Walla River |

0 200 Kilometers
0 200 Miles

Source: Hydrologic Unit Map of the United States, USGS, 1980. Cartography by Jim Freeman, July 1995.

CLEAR CREEK, IDAHO

CLEAR CREEK COORDINATED RESOURCE MANAGEMENT AND PLANNING COMMITTEE

Background:

The U.S. Forest Service organized a Coordinated Resource Management and Planning Committee (Committee) in order to resolve resource-related problems in Clear Creek basin. The Committee started after the U.S. Forest Service discovered other landowners along Clear Creek shared a general concern over water quality problems in the stream. The U.S. Fish and Wildlife Service, perhaps one of the most concerned landowners along the stream, operates the Kooskia National Fish Hatchery (Kooskia Hatchery) near the mouth of Clear Creek. The water quality problems in Clear Creek have adversely affected the hatchery production of spring chinook salmon.

Location and Scale of Watershed:

Clear Creek flows approximately 20.5 miles and empties into the Middle Fork of the Clearwater River in north central Idaho. The stream originates in the headwaters of the Nez Perce National Forest and descends through a series of narrow canyons in the middle reaches. The lower portions of Clear Creek flow within the Nez Perce Indian Reservation. The U.S. Forest Service owns the upper two-thirds of the watershed, and private landowners and the Nez Perce Indians own the lower portion.

Participants:

The Committee consists of approximately eighteen members representing public and private interests. Members include the Nez Perce Fisheries Resource Management, Kooskia Hatchery, Valley Elementary School, Idaho Soil Conservation Commission, Idaho Department of Lands, Idaho Department of Fish and Game, Cooperative Extension Service of the University of Idaho, Idaho Division of Environmental Quality, Idaho Department of Agriculture, U.S. Natural Resources Conservation Service, U.S. Forest Service and U.S. Bureau of Land Management.

Problems Involved:

The Committee primarily addresses water quality concerns associated with improving and maintaining the water quality for fish and particularly for the Kooskia Hatchery. Specific problems that are harming the fish include sedimentation, lack of instream cover, low summer flows, high summer water temperatures and lack of riparian vegetation. Livestock grazing activities, forestry activities, stream alterations and residential development all contribute to these problems.

Activities:

Committee projects, designed to improve fish habitat, include stream restoration and jetty structure installation. The Committee has also installed fencing, organized field trips to watershed sites and sponsored tree plantings by Clearwater Valley Elementary School students. Other activities include preparation of an educational pamphlet, construction of interpretive signs at demonstration sites and preparation of an annual project summary.

Processes:

While the initial meetings were primarily attended by agencies, the Committee intended to involve private landowners because many of the activities affecting water quality occur on private land.

The Idaho Division of Environmental Quality coordinates the Committee, which meets approximately twice a year. Some meetings have been open to the public while others are just among agency participants. Usually, the group meets in spring to discuss upcoming projects and again in fall to review progress on the projects.

Several subcommittees address specific areas of concern such as instream flow issues, riparian issues and fisheries issues. A Memorandum of Understanding was drafted and signed by the participating agencies.

Goals:

The Committee outlined three broad-based project goals:

- educate landowners and watershed users regarding proper land use and water management;
- improve the water quality and fish habitat of Clear Creek and
- support and enhance both resident and anadromous fish populations.

Funding:

The U.S. Forest Service, U.S. Fish and Wildlife Service and the Idaho Wildlife Council provided funding for the Council.

What Has Been Accomplished:

The Idaho Division of Environmental Quality, Idaho Department of Fish and Game and the U.S. Forest Service developed a cooperative management plan and corresponding goals for the watershed. Public meetings allow residents to voice concerns to the different agency members. Additionally, the Coordinated Resource Management and Planning process has provided an opportunity for agencies to communicate and coordinate efforts on watershed activities.

How Participants View Effectiveness, Success:

The Committee should have focused more on education and public participation at the beginning of the process. Agencies need the trust and support of residents to get projects accomplished.

Sufficient funding is vital to maintain the momentum and excitement of a watershed effort in the community. Lack of funding causes delays in the effort and discouragement among participants.

While the Coordinated Resource Management and Planning process is a good program, its success in a particular watershed often depends on the support of watershed residents as well as the physical conditions of the area. For example, when the physical problems in the watershed are difficult to resolve, and restoration projects bring little or no success, participants get discouraged quickly.

Committee members had high expectations that have not been met because progress has been slow. Some private landowners vehemently oppose the Committee because they associate it with government interference. The group is now considering appointing a neutral facilitator to run meetings in order to control tensions and maintain the focus of the meetings.

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COEUR D'ALENE RIVER, IDAHO

COEUR D'ALENE BASIN RESTORATION PROJECT

Background:

The Coeur d'Alene Basin Restoration Project (Project) formed in 1991 after the U.S. Environmental Protection Agency (EPA) and the State of Idaho discovered they were both writing a strategy on managing the Coeur d'Alene River watershed. Subsequently, the EPA, the Idaho Division of Environmental Quality (DEQ) and the Coeur d'Alene Tribe (Tribe) organized the Project and agreed to collaborate in developing a watershed plan.

The Coeur d'Alene River basin offers a wealth of wildlife and plant life. Natural resources provide the foundation for the region's economy. Historic natural resource industries such as farming, grazing, mining and timber harvesting co-exist with a burgeoning international tourism industry that attracts an estimated 800,000 visitors annually. Additionally, as the ancestral home of the Tribe, the basin has an important cultural heritage.

Location and Scale of Watershed:

The Project addresses the entire Coeur d'Alene River basin which encompasses approximately 3,700 square miles of land in the Panhandle area of Idaho. The basin includes Coeur d'Alene Lake, Coeur d'Alene River, lakes along the lower Coeur d'Alene River, Spokane River, St. Joe River, St. Maries River and tributaries to these rivers.

Participants:

The EPA, DEQ and the Tribe organize and direct the Project. Other members include the U.S. Forest Service, U.S. Bureau of Land Management, U.S. Geological Survey, Idaho Department of Fish and Game (Fish and Game), Idaho Department of Water Resources, mining and timber industries, and residents with environmental, recreational, fishing and homeownership interests.

Problems Involved:

Nearly a century of mining, timber harvesting, farming and grazing have led to extensive environmental problems. Specific problems include heavy metal contamination (lead, cadmium and zinc), excessive erosion, sedimentation, stream bank destabilization and thermal and nutrient problems. In recent years, heavy recreational use and population growth have also contributed to these problems.

The Coeur d'Alene River basin includes the nation's second-largest Superfund site at Bunker Hill. The 21-square mile, \$190 million clean-up site in the Silver Valley contributes significantly to watershed problems. The Project chose to let EPA handle the Bunker Hill site and instead has concentrated on restoring and managing the 10,000 acres of contaminated wetlands, land and streams below the mining site.

Activities:

The Project is restoring four or five areas outside of the Bunker Hill site. Restoration work involves removing tailings, stabilizing banks and revegetating riparian areas. Additionally, the Project started a pilot program to reduce phosphorous by upgrading septic systems and sharing the cost with residents.

Technical Advisory Groups have formed to draft a Coeur d'Alene Lake Management Plan (Plan). These groups meet regularly and address a specific section of the Plan such as development, agriculture, forestry practices, rivers, recreation and the South Lake area.

In order to educate the public and involve them in these activities, the Project publishes a monthly newsletter, holds public meetings and sponsors community presentations. The Project also publishes and distributes pamphlets explaining how to minimize consumption of heavy metals in the water and fish.

Processes:

The Steering Committee, which directs the Project, consists of the EPA, the DEQ and the Tribe. The Coeur d'Alene Basin Interagency Group (CBIG), a longstanding technical work group predating the Project, provides broad-based technical support for the Project. The Citizens Advisory Committee (CAC) consists of interest groups, representatives of local government and public citizens. The CAC provides for ongoing public review and helps foster public information, education and outreach.

Since the CAC and CBIG are large groups, a smaller Management Advisory Committee (MAC) was formed to oversee specific project activities. The MAC consists of representatives from nine agencies; one representative each from mining, agriculture and timber interests; the Coeur d'Alene Tribe and the chairpersons from the CBIG and the CAC.

The Project Manager is responsible for the day-to-day activities of the Project and coordinates activities with the Coeur d'Alene Tribe and the participating agencies. The University of Idaho Water Resources Research Institute provides staff support to the Project.

Goals:

First, the Project plans to clean up the mine waste in the non-Superfund sites. Instead of spending large amounts of money on consultants, the agencies involved have designed cleanup teams by combining their staff with employees from the mining companies. The agencies will apply their knowledge to set forth the Project objectives and will allow the mining companies to apply their expertise to carry out the physical tasks. The participants support this collaboration because it not only puts money to its most productive use but also employs local residents.

Additionally, the Project intends to develop and implement the Coeur d'Alene Lake Management Plan. The Plan is designed to manage riparian growth and reduce nutrient loading in Lake Coeur d'Alene.

Funding:

The DEQ and the EPA are funding the Project for the first two years. Approximately \$500,000 was originally available to cover the costs of staffing, technical studies and mining reclamation projects. Federal funds are coming from a variety of programs including the Clean Water Act and CERCLA. According to Geoffrey Harvey of the DEQ, finding money is a constant struggle as it must be secured in pieces from many different sources.

What Has Been Accomplished:

The Project has succeeded in creating the Coeur d'Alene Lake Management Plan and implementing several mine cleanup projects. Coordination between the government and industry has led to cost effective cleanup of the area.

Although the Tribe and the agencies have cooperated in the Project, damages caused to natural resources have led the Tribe, the U.S. Department of the Interior and the U.S. Department of Agriculture to bring a lawsuit against eight mining and transportation companies.

How Participants View Effectiveness, Success:

The government's willingness to get directly involved in the cleanup itself, rather than just spending large amounts of money to hire a consultant to examine the problem, has led to significant results.

Instead of pointing fingers, the agencies realized everyone was partially responsible and focused on finding effective ways to resolve the problems. This type of involvement is different from the more typical, adversarial Superfund approach. In three years the Project has accomplished a great deal, especially in comparison to the Superfund site at Bunker Hill. However, soil and water quality monitoring will determine the ultimate success of this approach.

Contact and Sources:

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Coeur d'Alene Restoration Project Group, Coeur d'Alene Basin Restoration Project Framework, June 1993.

Idaho Division of Environmental Quality, Coeur d'Alene Basin Restoration Project Monthly Update (Coeur d'Alene, Idaho), Mar.-June 1994.

HENRY'S FORK, SNAKE RIVER: IDAHO AND WYOMING

HENRY'S FORK WATERSHED COUNCIL

Background:

In 1989, the Idaho Water Resource Board (Resource Board) began preparing a comprehensive plan for the water resources in Henry's Fork basin. The Resource Board used a public involvement process in preparing the plan, which had the effect of aggravating tensions between resource conservation interest groups and development interest groups. The Henry's Fork Foundation, a leading organization among the conservation and recreational interest groups, and the Fremont-Madison Irrigation District, a leading organization for the development interest groups, emerged as opponents as they had in other resource controversies. In 1992, after many months of difficult debate, the comprehensive plan was presented to the Idaho Legislature but was defeated. In 1993, following the two major sediment events described below, the Henry's Fork Basin Plan was approved by the Legislature.

Two major events, which caused severe sedimentation problems in Henry's Fork, occurred during the Summer of 1992. First, in June, during the construction of the Marysville Hydroelectric Project, a canal breached and released 17,000 tons of sediment into Fall River and downstream into the Henry's Fork near St. Anthony. Further upstream, in September, Island Park Reservoir was emptied to kill unwanted fish and inadvertently contributed between 50,000 and 100,000 tons of sediment into a section of the Henry's Fork which supports a blue-ribbon trout fishery. Observers blamed lack of agency coordination for the severity of the spill, and called for improved communications and public involvement in decision making.

Ten months after the Island Park Reservoir drawdown, the Idaho Division of Environmental Quality called all agencies in the basin together to discuss the nature of the problems. Thus, the Henry's Fork Watershed Council (Council) was born and, as a result of citizen desires to coordinate efforts in the basin, the Fremont-Madison Irrigation District and the Henry's Fork Foundation agreed to co-facilitate the Council. A charter for the Council was presented to the 1994 Idaho Legislature and passed unanimously.

Location and Scale of Watershed:

The Henry's Fork basin is located in eastern Idaho and western Wyoming, encompassing 1.7 million acres and over 3000 miles of river, streams and irrigation canals. The basin includes the southwestern corner of Yellowstone National Park and the western slope of the Teton Mountains.

Participants:

Council participants include citizens, scientists, agency representatives and the Shoshone-Bannock Tribes. Meeting attendance averages fifty to sixty people, and has been as high as eighty.

Federal agency participants include: Army Corps of Engineers, Bureau of Land Management, Bureau of Reclamation, Forest Service, Natural Resources Conservation Service, Environmental Protection Agency, Fish and Wildlife Service, Geological Survey and National Park Service.

State agency participants include: Idaho Department of Fish and Game, Idaho Department of Lands, Idaho Department of Parks and Recreation, Idaho Department of Water Resources, Idaho Division of Environmental Quality, Idaho Soil Conservation Commission and Idaho Department of Transportation.

Local agencies include: Fremont, Teton and Madison County Planning and Zoning representatives; Yellowstone, Teton and Madison Soil Conservation Districts; and High Country Resource Conservation and Development Area.

Citizen groups include: Friends of Conant and Squirrel Creeks, Friends of Fall River, Snake River Cutthroats and Wool Growers Association.

Problems Involved:

The sedimentation problems caused by the Island Park and Marysville incidents led to the formation of the Council. Increasing water demands for irrigation use, hydropower and instream flows are creating water management concerns. Also, lack of agency coordination has hindered progress in addressing soil erosion, water supply issues and water quality problems.

Activities:

The Council meets regularly (eight to nine times a year) and reviews proposed projects and activities within the watershed. Since about twenty-five government entities have regulation or management authority in the watershed, the Council takes on the responsibility of reviewing and coordinating projects to ensure all projects will effectively solve problems and meet needs within the watershed. The Council also allocates funding for specific projects.

In addition to reviewing proposals, the Council takes an active role in managing problem areas within the watershed. For example, irrigation diversions along Sheridan Creek have altered the course of the creek and impacted many areas of fish habitat. There are additional concerns with water quality and riparian impacts from cattle grazing on state lands bordering the creek. The problem has stirred controversy among residents living along Sheridan Creek, and the Council has taken an active role in airing disputes among the parties and encouraging coordinated management of grazing along the creek. Finally, the Council has organized an annual public conference where agencies and organizations present research results and progress reports on projects under way in the watershed.

Processes:

The Henry's Fork Foundation and the Fremont-Madison Irrigation District co-facilitate the Council. Board and staff members from each facilitating organization serve on the twelve-member Facilitation Team. All decision making is by consensus, and the co-facilitators exercise their judgment as to whether consensus has been reached by sensing the nature and intensity of opposing viewpoints. The Facilitation Team attends to the administrative and logistical needs of the Council, coordinates its public information activities and submits annual reports on its progress to the Idaho Legislature.

The Council is divided into three subgroups: the Citizens Group, the Technical Team and the Agency Roundtable. The Citizens Group, consisting of business, conservation and community interests, reviews proposals and decides which proposals are most promising and relevant to local needs. The Technical Team coordinates and oversees research efforts in the basin and helps integrate research results into Council decisions. The Agency Roundtable consists of representatives from over twenty government entities with management or regulatory jurisdiction in the basin. Through consultation, the Agency Roundtable coordinates agency actions to implement Council decisions.

Goals:

In January 1994, the Council crafted the following Mission Statement: "The Council is taking the initiative to better appreciate the complex watershed relationships in the Henry's Fork basin, to restore and enhance watershed resources where needed, and to maintain a sustainable watershed resource base for future generations. In addressing social, economic and environmental concerns in the Basin, Council members will respectfully cooperate and coordinate with one another and abide by federal, state and local laws and regulations."

Funding:

Money from a settlement with the Marysville Hydro Partners established the state Henry's Fork Watershed Fund. Funds will be spent over four years for project seed money and administrative expenses. Also, the Henry's Fork Foundation is funding and staffing a watershed resource information center. The Council hopes to secure additional funding from public and private sources.

What Has Been Accomplished:

The Council has succeeded in getting many parties, including those who have historically been at odds, together in a common forum. Additionally, the Council has acquired significant respect within the watershed. Many agencies are consulting and working with the Council before making decisions or undertaking projects in the watershed. Private landowners have also asked the Council to mediate disputes and manage problem areas in the watershed.

How Participants View Effectiveness, Success:

The Council has developed an atmosphere of cooperation and has implemented a process to effectively deal with issues and problems facing the watershed.

The Council is beginning to gain the trust of residents within the watershed. While many diverse interests are involved, the Council is still missing the active participation of the State of Wyoming and regular tribal participation. Also, some government agencies appear reluctant to get involved because they do not trust the Council or do not want to compromise their authority.

It appears that the more government offices and agencies are involved in a watershed, the greater the need for a coordinated effort among the government entities and those with an interest in the watershed.

The Executive Director of The Henry's Fork Foundation listed the following keys for the Council's success: (1) having the Council co-facilitated by credible citizen groups rather than a lead government agency; (2) taking it slowly with respect to developing the organization and spending lots of time on consensus-building processes and self-education; and (3) using an inclusive, community-building philosophy in Council meetings, emphasizing mutual respect, listening to all points of view and offering a "safe" forum for resource discussions.

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LEMHI RIVER, PAHSIMEROI RIVER AND EAST FORK OF THE SALMON RIVER, IDAHO MODEL WATERSHED PROJECT

Background:

In January 1990, residents and irrigators of the Lemhi River system met to discuss irrigation procedures. Residents and irrigators believed something needed to be done locally to aid salmon migration or outside interests would intervene to address the problem. Informal discussions among an irrigation district, water users' association, cattle and horse growers' associations and fisheries' associations took place. These groups outlined problem areas and drafted An Irrigator's Plan to Improve Fish Passage (Irrigators' Plan).

The Lemhi Soil and Water Conservation District (Lemhi SWCD) incorporated the Irrigators' Plan into the Lemhi SWCD Long Range Plan. In March 1991, the Lemhi SWCD, Lemhi Irrigation District and Water District 74 (the Districts) requested the U.S. Soil Conservation Service (SWCS) to do an assessment plan of the salmon issues on the Lemhi River. The SWCS Lemhi Plan was presented to the U.S. Bureau of Reclamation in February 1992. The U.S. Bureau of Reclamation, the Districts and individual irrigators signed Memoranda of Understanding to ensure adequate participation, and the Lemhi Plan was submitted to the Model Water Conservation Program to get formal recognition and funding.

In November 1992, Governor Andrus designated the Lemhi River watershed effort as a Model Watershed Project (Watershed Project), which gave the Lemhi Plan formal recognition and funding from the Bonneville Power Administration. The Watershed Project expanded the Lemhi Plan to include the East Fork of the Salmon River and the Pahsimeroi River, which are also important salmon production streams.

Location and Scale of Watershed:

The Watershed Project encompasses the Lemhi River, Pahsimeroi River and East Fork of the Salmon River, which are located in north central Idaho. These rivers have a combined drainage area of approximately 2,735 square miles.

Land ownership in the watershed is mixed with approximately ninety-five percent of the land owned and managed by the federal government. However, private landowners own and control about ninety percent of the river bottoms and the remaining salmon habitat.

Participants:

Participants in the Watershed Project include the U.S. Natural Resources Conservation Service (formerly the Soil Conservation Service), Idaho Division of Environmental Quality, Idaho Soil Conservation Commission, Bonneville Power Administration, Shoshone-Bannock Tribes, U.S. Bureau of Land Management, Lemhi SCD, Custer SCD, U.S. Forest Service, Idaho Department of Fish and Game, Lemhi County Agent, Water District 74, Lemhi Irrigation District, Timber Industry and Trout Unlimited.

Problems Involved:

A drastic reduction in Columbia River basin salmon population has occurred because many salmon are unable to successfully migrate or spawn. Although most salmon mortality is attributed to the hydroelectric dams further downstream on the Snake and Columbia Rivers, fish biologists also blame the decreasing populations on habitat degradation in the higher streams like the Lemhi River. Altering stream channels and depleting flows for irrigation needs degrade or eliminate migration, rearing and spawning habitat for salmon.

Activities:

The Watershed Project is identifying ways to improve existing diversion structures and stabilize segments of stream bank without drastically changing the stream. Other activities include grading fish screens to prevent young salmon from being pulled into irrigation channels and designing a voluntary fish flush by irrigators during low flow periods.

Additionally, the Watershed Project sends a quarterly newsletter to all 4,500 residential addresses in the watershed counties and sponsors a Salmon Symposium. Several agencies are working on a coordinated effort to complete a stream inventory for the Lemhi, Pahsimeroi and East Fork of the Salmon River.

Processes:

The Idaho Soil Conservation Commission (Commission) serves as the lead agency for the Watershed Project and provides a project coordinator to assist with planning and activities. A sixteen-member Advisory Committee, consisting of local residents and representatives from Indian tribes and conservation groups, oversees the Watershed Project. Advisory Committee members are appointed by the Commission and meet quarterly. Subcommittees are formed as needed by the Advisory Committee to work on specific areas or projects.

A Technical Committee, consisting of twenty-four resource managers from state and federal agencies, provides technical assistance to the Advisory Committee. Technical Committee members often serve on subcommittees with Advisory Committee members. Otherwise, the Technical Committee reports through the Project Coordinator to the Advisory Committee. The Lemhi and Custer SWCDs review programs and plans and solicit local participation and support.

Goals:

The objective of the Watershed Project is "to protect, enhance and restore anadromous and resident fish habitat and achieve and maintain a balance between resource protection and resource use on a holistic watershed basis."

Funding:

The Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program (Program) funds the Watershed Project. By congressional mandate, the Bonneville Power Administration must fund mitigation and enhancement measures under the Program. Bonneville's first grant of approximately \$150,000 covers Advisory Board expenses, information and education projects, equipment, salaries and travel.

The U.S. Agricultural Stabilization and Conservation Service (now the U.S. Farm Service Agency) allocated special funding for diversion improvements under its salmon initiative through the Agricultural Conservation Program. The Idaho Soil Conservation Commission disperses and manages all funding.

What Has Been Accomplished:

Irrigators have improved over twenty-nine diversion structures in the Lemhi River, and plans and designs are complete for three projects in the Pahsimeroi River and two in the East Fork. Also, the Lemhi Fish Flush has been organized and put in operation; several irrigators signed voluntary agreements to forego diverting water for a twelve-hour period to move fish stranded at the mouth of the river due to low river flows.

Habitat inventory on all three rivers has been completed through the cooperation and work of many agencies. The Watershed Project has received positive public recognition from Governor Andrus, and the Watershed Project was featured on a television program, "Incredible Idaho."

How Participants View Effectiveness, Success:

Securing the cooperation of landowners has been an important success, according to the project coordinator. The information and education program is instrumental to the success of the Watershed Project because people often do not mind cooperating if they know what is happening.

The Lemhi River Anadromous Fish Enhancement Agreement that was used to organize the irrigators for the Lemhi River Fish Flush may provide a model for other fish flush projects.

Contact and Sources:

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(208) 756-6322

Model Watershed Project, Model Watershed News Quarterly: News about Restoring Fish in Central Idaho (Salmon, Idaho), Summer 1993 - Winter 1994.

Candace Burns, Groups Take River Inventory, Idaho Falls Post Reg., Apr. 28, 1994, at C1.

LOLO CREEK, IDAHO

LOLO CREEK COORDINATED RESOURCE MANAGEMENT GROUP

Background:

Many agencies and landowners, such as the Nez Perce Tribe and Potlatch Corporation, were monitoring water quality in the Lolo Creek watershed, and many of the monitoring efforts were being duplicated. These parties convened several meetings to coordinate monitoring projects and share information about the watershed.

The Clearwater Soil and Water Conservation District (Clearwater SCD) became involved in the watershed effort after receiving a grant from the State of Idaho to inventory resources and problems in the Lolo Creek watershed. The Clearwater SCD organized a Coordinated Resource Management Group (CRM Group) in 1990 to create a water quality plan for the Lolo Creek watershed. The CRM Group included many of the same people who originally met to coordinate water monitoring efforts. The CRM Group has fewer participants than the initial meeting, which included approximately thirty landowners and other interested citizens. The parties agreed that a smaller group would be more effective.

Location and Scale of Watershed:

Lolo Creek flows into the Clearwater River five miles east of Orofino, Idaho. The Lolo Creek watershed encompasses 156,000 acres with the upper basin managed by the U.S. Forest Service. The population is sparse with no major cities in the watershed. Timber harvesting and agricultural production are major contributors to the regional economy.

Participants:

Lolo Creek CRM Group participants include the Idaho Division of Environmental Quality (DEQ), U.S. Forest Service, U.S. Bureau of Land Management (BLM), Potlatch Corporation, U.S. Natural Resources Conservation Service, Idaho Department of Lands, Idaho Soil Conservation Commission, Idaho Department of Fish and Game, Clearwater SCD and individual landowners within the watershed.

Problems Involved:

The Lolo Creek CRM Group addresses water quality problems such as sedimentation, poor fish habitat and high water temperatures. Many of these problems are caused by grazing and timber harvesting activities in the watershed.

Lolo Creek was identified as a water quality limited segment under Idaho law. This classification raised concern among the Nez Perce Tribe, which planned to construct a satellite fish rearing facility. Such a facility would require water of a quality not currently available in Lolo Creek.

Activities:

The Lolo Creek CRM Group coordinates water quality monitoring and implements a watershed plan to improve and maintain water quality (Watershed Plan). The Watershed Plan includes a list of Best Management Practices (BMPs) to be implemented by the Clearwater SCD and private landowners. BMP projects include off-site watering ponds for cattle, livestock access ramps to streams and other erosion control projects.

The CRM Group also conducts informational and educational programs by sending speakers to community meetings and schools.

Processes:

The Clearwater SCD facilitates the CRM Group, which will meet regularly until the Watershed Plan is fully implemented. Participation in the CRM Group is voluntary and all decisions are made by group consensus. Additionally, the CRM Group split into smaller groups to address specific areas or tributaries within the Lolo Creek watershed. For example, one of the smaller groups focuses on Jim Brown's Creek, which is a tributary of Lolo Creek. This smaller group designs and implements projects to address specific grazing-related problems for Jim Brown's Creek.

Goals:

The CRM Group seeks to coordinate monitoring and resource management activities in order to reduce sedimentation and improve habitat for anadromous fish in Lolo Creek. Also, the CRM Group closely monitors the BMPs implemented in the watershed to make sure they are effective.

Funding:

The Clearwater SCD has received funding for the CRM Group through the State Agricultural Water Quality Program. Also, the U.S. Forest Service and BLM have contributed funds to carry out monitoring activities on public lands, and Potlatch Corporation has contributed funds for projects implemented on its land.

What Has Been Accomplished:

The CRM Group has coordinated activities in the watershed and developed and partially implemented the Watershed Plan. More water quality monitoring is needed to determine whether the Watershed Plan is effective.

How Participants View Effectiveness, Success:

The CRM process has succeeded in gaining the trust of individual landowners who have a general distrust of governmental interference. Extensive and ongoing education and information efforts are essential to gain the trust of the community. When "selling" the CRM process to landowners, one must constantly emphasize that participation is voluntary and government agencies are involved solely to assist landowners and not to dominate decision making.

Watershed groups often need a strong facilitator to keep meetings on track. Additionally, action plans or small goals are helpful to keep the group focused. Outlines of what each meeting should accomplish and when plans and activities should be completed will help keep the group productive.

The voluntary nature of the CRM process means it occasionally lacks the focus and incentives needed to motivate all affected parties to participate. As a first step, it would be helpful to prepare a written plan outlining project goals, objectives and commitments.

The smaller group addressing Jim Brown's Creek has been more effective than the Lolo Creek CRM Group, partly because a smaller group is easier to coordinate.

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MIDDLE SNAKE RIVER, IDAHO

MIDDLE SNAKE RIVER NUTRIENT MANAGEMENT PLAN

Background:

The Middle Snake River, traditionally called Idaho's working river, has a history of agricultural uses, which have caused low flows and high nutrient levels in the river. The Middle Snake nutrient management planning process was initiated after many river valley residents expressed concern over the deteriorating water quality conditions in the Middle Snake River. Under the Clean Water Act, the Idaho Division of Environmental Quality (DEQ) is required to draft a water quality plan for the Middle Snake River. The water quality plan must show what pollution reductions are necessary to meet state water quality standards on the Middle Snake. Also, an implementation schedule for the pollution control mechanisms must be included in the water quality plan. The Idaho Conservation League threatened to sue the state to force it to comply with the Clean Water Act.

The DEQ organized an effort with industry leaders along the Middle Snake River to draft a plan under Idaho's Nutrient Management Act, which would also comply with the Clean Water Act requirements. Industry leaders, municipalities, state and federal agencies and conservation groups participated in drafting the Nutrient Management Plan (Plan). As a result, the Idaho Conservation League agreed to delay filing the lawsuit as long as water quality improvements were being implemented.

Location and Scale of Watershed:

The Snake River segment from Milner Dam to the community of King Hill, Idaho is known as the Middle Snake River. The planning area encompasses the south central Idaho area of the watershed, including a 92.5 mile section of the Snake River.

Participants:

The Plan participants are organized into four committees: General Public Advisory Committee, Executive Advisory Committee (Executive Committee), Technical Advisory Committee (Technical Committee) and the Legal Advisory Committee (Legal Committee).

The Executive Committee participants include representatives from six industry groups: aquaculture (fish hatcheries), irrigated agriculture, confined feeding operations, hydropower, food processing and municipal waste water. Representatives from several conservation groups also participate in the Executive Committee: Idaho Conservation League, Idaho Rivers United, Idaho Wildlife Federation and Hagerman Citizens' Alert. Other Executive Committee members include soil conservation districts, canal companies, U.S. Environmental Protection Agency (EPA), congressional representatives, county commissioners and the Magic Valley Fly Fishers.

The Technical Committee consists of representatives from all the groups participating in the Executive Committee. Additionally, representatives from other federal and state agencies participate in the Technical Committee: U.S. Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Geological Survey, U.S. Fish and Wildlife Service, University of Idaho, Idaho State University, Idaho Department of Fish and Game and the Idaho DEQ.

The Legal Committee consists of lawyers representing the various industry participants.

The General Public Advisory Committee consists of over 100 interested residents and industries in the Middle Snake Basin. These members are less active but wish to keep up-to-date on Plan activities.

Problems Involved:

The Plan addresses water quality problems in the Middle Snake River basin caused by municipal wastewater treatment plants, aquaculture, food processors, irrigated agriculture, animal feeding operations and hydroelectric impoundments. The latter affect the natural processing of pollutants in the river.

Activities:

Each industry group drafted a section of the Plan addressing how practices in their own industry could be changed to improve and maintain the water quality in the Middle Snake River. Additionally, each industry began implementing the better management practices outlined in the Plan as soon as all members of the Executive Committee and Technical Committee agreed that the practices were both feasible and effective in improving water quality.

Plan participants are currently working on getting the Plan approved by federal and state agencies and the Idaho Legislature under the Nutrient Management Act. After the Plan is approved, each participating industry must submit annual reports addressing how they are improving or maintaining their industry practices under the Plan.

Processes:

The Plan was organized under the Idaho Nutrient Management Act and was intended to satisfy the water quality plan requirements under the Clean Water Act. The Technical Committee developed the Plan and submitted it to the Executive Committee for comments and approval. All decision making was done by consensus so all members of both the Technical and Executive Committees had to approve all parts of the Plan.

The Legal Committee reviewed the Plan to make sure it complied with all federal and state laws and regulations. Participating agencies and universities continually monitor water quality to study the problems and determine which industry practices will improve the water quality.

Even before the Plan was completed, industry participants implemented specific industry practices approved by the Executive and Technical Committees. The purpose of the immediate implementation was to start improving water quality to demonstrate the participants' commitment and help secure legislative funding for the process.

Goals:

The overall goal of the Plan is to improve water quality in the Middle Snake River while maintaining economic growth. Three specific goals were identified:

- full implementation of industry nutrient management plans, including nutrient and sediment reduction targets, within five years of final plan approval;
- attainment of state water quality standards for excessive nutrients, nuisance vegetation, and dissolved oxygen and temperature that support cold water biota (animal and plant life) within ten years of final plan approval; and
- establishment a working committee to determine flow requirements for water quality improvement.

Funding:

The Idaho Legislature allocated funding for monitoring work under the Nutrient Management Act. The EPA provided funding for a technical expert to work on the Plan. Participants also funded a significant amount of monitoring and implementation, and the Idaho Legislature allocated funding specifically for Plan development.

What Has Been Accomplished:

The Plan has succeeded in getting many parties together to work on the water quality problems in the Middle Snake River. Whether the Plan will succeed in improving water quality may not be known for several years.

How Participants View Effectiveness, Success:

The disadvantage of including so many people in the decision making process was the amount of time needed to draft the Plan, which took longer than anticipated. However, industry groups appreciated the approach because leaders in each industry drafted the segment of the Plan that affected them. As a result, all participants felt the Plan was workable under industry standards.

In the past, the DEQ had never involved private participants to this extent when drafting a water quality plan. The Idaho Legislature is now considering requiring private participation in the formation of other water quality plans.

Contact and Source:

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Idaho Department of Health and Welfare Division of Environmental Quality, The Middle Snake River Nutrient Management Plan, Feb. 1995.

PARADISE CREEK: IDAHO AND WASHINGTON

PARADISE CREEK WATER QUALITY MANAGEMENT COMMITTEE

Background:

The Washington Department of Ecology received many complaints regarding the poor water quality in Paradise Creek. Runoff from agricultural and urban lands as well as wastewater discharges from the City of Moscow all contribute to the water quality problems in Paradise Creek. Because Paradise Creek flows through two university towns, many university projects have studied the creek and its problems. This attention accounts, in part, for the overwhelming public concern over the creek.

In the early 1990s, the Palouse Conservation District in Pullman, Washington initiated a watershed management effort by organizing the Paradise Creek Water Quality Management Committee (Committee).

Location and Scale of Watershed:

The headwaters of Paradise Creek are located in the Palouse Mountain Range northeast of Moscow, Idaho. The creek flows through agricultural cropland, through the City of Moscow and across the state line into the City of Pullman, Washington. The entire Paradise Creek watershed encompasses approximately 18,600 acres.

Participants:

The membership of the Committee consists of interested parties from the areas of Moscow, Idaho and Pullman, Washington. The key players include the cities of Moscow and Pullman; Latah County, Idaho; Whitman County, Washington; Washington State University; University of Idaho; Latah Soil Conservation District; Palouse Conservation District; farmers from Whitman and Latah counties; Pullman City Trust and the Palouse-Clearwater Environmental Institute.

State agencies, such as the Idaho Department of Environmental Quality, the Washington Department of Transportation and the Washington Department of Wildlife participate as technical advisors to the Committee. Agency participants are not voting members of the Committee.

Problems Involved:

Water quality problems resulting from agriculture and urbanization are the primary problems in the watershed. Over 8,000 acres of agricultural land contribute sediment and nutrients into the creek. Additionally, Paradise Creek does not carry enough water to dilute the contaminants contributed by wastewater discharges from Moscow. Moscow has undergone rapid growth, resulting in water pollution from businesses, small industries, residents and a fertilizer plant. Approximately 120 pipes that discharge pollutants directly into Paradise Creek have been found within the city.

Activities:

The Committee meets approximately every two weeks. Currently, the Committee is completing a watershed plan (Plan) outlining the projects needed to address watershed problems. Even though the Committee is not officially implementing any projects yet, many Committee members have taken the initiative and started their own activities to clean up the watershed.

For example, Washington State University built waste storage ponds, and the University of Idaho funded restoration of a fertilizer site. Pullman drafted an erosion control ordinance, and Moscow started proceedings to develop an erosion control ordinance. The Palouse Clearwater Environmental Institute is soliciting public support for the Committee and assisting in restoration projects along the creek.

Processes:

Committee meetings are conducted informally with a member of the Palouse Conservation District facilitating the meetings. The Committee started by setting ground rules for cooperation and communication among members. Next, the Committee drafted a "vision outline" for each segment of Paradise Creek establishing general goals.

Each member of the Committee made decisions concerning how it could improve conditions along the river and submitted a letter of commitment where appropriate. The Committee is finalizing the draft Plan. Next, the Committee will secure funding and implement the watershed Plan.

Goals:

The Committee's overall goal is to improve the water quality of Paradise Creek. Additionally, the Committee hopes to improve wildlife habitat, stabilize the stream bank and increase the recreational value of the creek.

Funding:

The Washington State Centennial Clean Water Fund and the U.S. Environmental Protection Agency provided funding to the Committee. So far, this money has been used primarily for administrative expenses associated with drafting the Plan and organizing meetings. The Committee has yet to determine how to fund implementation of the Plan.

What Has Been Accomplished:

The Committee has succeeded in bringing together many different interests within the watershed, including individuals and organizations from two states. The Committee and its planning processes provided the catalyst for many members to undertake their own water quality improvement activities. These individual activities have already improved the water quality and aesthetics of Paradise Creek.

How Participants View Effectiveness, Success:

The time initially spent by the Committee in getting members acquainted and setting ground rules for behavior and participation was well spent. Group facilitation skills have played an important role in the Committee's success. Although the Committee has a formal facilitator, several Committee members are good at insuring all the participants are brought into the discussion.

Having Committee members and participating agencies who take the initiative in finding answers and undertaking projects helps the effort tremendously.

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BITTERROOT RIVER, MONTANA

BITTERROOT WATER FORUM

Background:

Five citizens with different backgrounds and interests began talking with each other about Bitterroot River basin issues and formed an initial watershed interest group (Initial Group). In 1993, the Initial Group asked Mike McLane from the Montana Department of Natural Resources and Conservation (DNRC) to speak on basin planning and other watershed management efforts at a public forum. Subsequently, the Initial Group asked the Bitterroot Resource Conservation and Development Project (RC&D) staff to facilitate their watershed effort in the Bitterroot River basin. The effort expanded in 1994 to approximately 30 participants, the Bitterroot Water Forum (Forum), who are exploring basin issues using a collaborative consensus process.

Unlike many other watershed efforts, the Bitterroot watershed effort was launched by a citizens group; it continues to rely on grassroots participation. As the Forum has achieved recognition, however, it has had to struggle to remain grassroots and to avoid being taken over by established political and business interests within the basin.

Location and Scale of Watershed:

The Bitterroot River originates on U.S. National Forest land and flows eighty miles from south to north before emptying into the Clark Fork River. Approximately seventy-five percent of the land in the watershed is owned by the State of Montana, the U.S. Bureau of Reclamation and the U.S. Bureau of Land Management. The high desert mountain terrain in the watershed supports irrigated agriculture, a vital component of the local economy.

Participants:

Participants in the Committee, which is the decision making group, include citizens representing interests in agriculture, ranching, real estate, recreation and the local chamber of commerce. Other interests, including the DNRC, the U.S. Forest Service and the U.S. Fish and Wildlife Service, have been invited to attend Forum meetings, but do not participate on the Committee.

The Committee does not include all parties who have an interest in the basin. Instead, the Initial Group decided to start with a smaller group of people in order to establish the effort. Other parties are invited to attend meetings and may be included in the Committee after the Forum has solidified its organizational structure and built up momentum.

Problems Involved:

Residents in the Bitterroot River basin are concerned about groundwater quality and supply. Also, surface water allocation controversies exist; more water is needed downstream for salmon migration and power generation. A significant amount of water is stored in reservoirs located high in the Bitterroot River watershed. However, local irrigators and the U.S. Forest Service disagree as to how the stored water should be managed and allocated.

Furthermore, the Bitterroot River basin is experiencing rapid growth. As a result, many land use issues, such as widening the main highway and reserving land for agriculture and open space, are becoming increasingly important.

Activities:

Committee participants are meeting regularly; they are developing the organizational structure of the effort and working to educate themselves on watershed issues. The Committee sponsored a tour of the watershed as one of its initial activities.

Processes:

The Initial Group met for three months to write a mission statement, goals and objectives. Community members were invited to form a Management Committee (Committee). In deciding whom to invite to join the Committee, the Initial Group looked for people who would: (1) represent an interest in the river basin; (2) balance the group between men and women; (3) represent the entire river basin and (4) work as consensus builders.

Anyone may attend the monthly Committee meetings, but only Committee members may speak and vote at the meetings. Several subcommittees examine specific issues, such as water quality, working with the county to produce a comprehensive basin plan and closing the basin temporarily to new water rights to allow for comprehensive planning.

Goals:

The following mission statement was adopted by the Committee: "Water is important to maintain and improve our quality of life. There is a critical need for more knowledge about water quality and quantity in the Bitterroot River Basin. We will seek and implement solutions to maintain our water resources."

The Committee has three general objectives:

- understand the basic hydrologic cycle of the Bitterroot River basin;
- identify the issues in the basin and the interested parties and facilitate communication among all parties and
- search for and implement solutions to address water quality and quantity problems in the basin to achieve a balance between resources and users.

Funding:

Initial assistance was provided by the RC&D, which facilitated formation of the group and donated mailing services. In addition the U.S. Geological Survey began a groundwater study prior to the formation of the Forum. A state grant from the coal severance tax fund has been received by the Forum and will be used for Phase 1 of a long-term data gathering and compilation effort, which will incorporate a GIS system. Ravalli County also provided some funding for the hardware needed for Phase 1. The Committee has applied for a grant from the Environmental Protection Agency to fund Phase 2, which will include additional groundwater studies and monitoring for targeted areas within the basin. EPA funding has also been sought by the Committee to create a curriculum for landowners related to water management issues in the basin. Finally, the Committee is seeking EPA funds to facilitate monitoring of nutrients and sediment in the Bitterroot River.

What Has Been Accomplished:

To date, the Forum has succeeded in organizing many people within the basin, who represent diverse interests. The Forum holds regular meetings, which are well attended. Some funding has been obtained to begin a data gathering and compilation program. In addition, Memoranda of Understanding have been signed to work cooperatively with the county, the U.S. Forest Service and the U.S. Natural Resources Conservation Service.

How Participants View Effectiveness, Success:

Participants are trying to be patient and take the time to build a stable group and structure that will allow effective problem solving down the road. Because organizing an effort is a slow process, participants can become impatient and discouraged, especially when watershed resources are visibly deteriorating faster than the group is able to get established.

Several previous watershed management efforts in the area have failed; however, this project is different for several reasons. A broader group representing more interests is involved, and agencies are more inclined to respect and facilitate consensus building in making decisions. Finally, a greater number of people recognize the urgent need to address the watershed problems.

Other Comments:

Agency employees must learn to listen and socialize a little with the locals in order to develop relationships of trust. Long-term residents can provide valuable information about the area and the people and give advice on educating and involving local citizens in the process.

Also, it is important to include people who know how to network and talk with others. Knowing people in each level of federal, state and local agencies aids the effort. Finally, one must have patience, perseverance and the participation of agency people who are helpful and trustworthy.

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BLACKFOOT RIVER, MONTANA

BLACKFOOT CHALLENGE

Background:

In 1991, agencies, organizations, industry representatives and landowners met to discuss possible solutions for managing recreational interests, environmental concerns, and commercial uses of the Blackfoot River Valley's natural resources. Since the response to the initial meeting, sponsored by the Big Blackfoot Chapter of Trout Unlimited, was overwhelming, a follow-up meeting was held in the City of Missoula to formalize the effort. Over sixty people attended the follow-up meeting in Missoula, which created the organization's framework. By January 1993, the Blackfoot Challenge reached a consensus on the mission statement, goals and organizational structure of the group.

Location and Scale of Watershed:

The Blackfoot River basin is located east of Missoula on the west side of the Continental Divide. The Blackfoot River flows approximately 100 miles before emptying into the Clark Fork River. The area is sparsely populated with several small towns, including Seeley Lake, Lincoln, Ovando, Helmville and Potomac.

Participants:

Blackfoot Challenge participants include: Montana Trout Unlimited; ranchers; business owners; recreational interests; The Nature Conservancy; Plum Creek Timber Company; National Fish and Wildlife Foundation; North Powell Conservation District; U.S. Forest Service; U.S. Bureau of Land Management (BLM); Montana Department of Fish, Wildlife and Parks; Montana Water Quality Bureau; U.S. Fish and Wildlife Service and the Montana Land Reliance.

Problems Involved:

The Blackfoot Challenge addresses water supply and water quality issues in the basin. Sedimentation is a concern due to agricultural, mining and timber harvesting activities. Other problems include heavy elk damage on private land and disputes over instream flow rights.

Activities:

The Blackfoot Challenge organized educational field trips on specific topics of concern such as weed control, riparian management and upland management. In addition, several group members are compiling a watershed data base. Stream restoration projects include skidding logs to the stream for overhead fish cover, fencing stream banks to reduce erosion, cutting and planting willow shoots for bank stabilization, and placing rocks to protect irrigation structures from erosion.

Processes:

The Blackfoot Challenge does not have a formal membership. Local governments, state and federal agencies, businesses, private corporations, individuals and other organizations that support the mission of the Blackfoot Challenge are invited to participate at any time.

The Blackfoot Challenge includes an Executive Committee and a Steering Committee. The Executive Committee consists of five individuals who set policies for the group. The Steering Committee consists of fourteen individuals who make decisions on projects. Other committees address specific areas such as private lands, information, public relations and funding.

One major meeting takes place annually bringing all the participants together. The Executive Committee meets every month, and the Steering Committee meets every other month. The Blackfoot Challenge does not take a position on issues but provides a forum for communication and cooperation.

Goals:

The mission of the Blackfoot Challenge is to enhance, conserve and protect the natural resources and the rural lifestyle of the Blackfoot River Valley for present and future generations.

Additionally, the Blackfoot Challenge has set forth the following goals:

- provide a forum for the timely distribution of technical and topical information from public and private sources;
- foster communication between public and private interests to avoid duplication of efforts and capitalize on opportunities;
- recognize and work with the diverse interests in the Blackfoot Valley to avoid confrontation;
- examine the cumulative effects of land management decisions and promote actions that will lessen their adverse impacts in the Blackfoot Valley and
- provide a forum of public and private resources to resolve issues.

Funding:

The BLM has supplied office materials and a cash grant. The U.S. Fish and Wildlife Service, Partners for Wildlife Program along with Trout Unlimited, Ducks Unlimited and Pheasants Forever have also provided funding. The Blackfoot Challenge has raised other money from the private sector.

What Has Been Accomplished:

The Blackfoot Challenge has sponsored educational forums on resource management including water law, riparian management and integrated weed control. It has established a network among agencies and private landowners that has facilitated stream and wildlife habitat restoration, conservation easements and technology transfers. The Blackfoot Challenge has helped draw federal and state attention to Blackfoot River issues and prompted adversaries in resource management to explore common goals.

Specifically, the Blackfoot Challenge has created or restored over 1,510 acres of wetlands. Other achievements include: 13.5 miles of riparian enhancement, 17 miles of stream channel restoration, 17 miles of erosion control along roads and coordination of 32,000 acres of weed control.

How Participants View Effectiveness, Success:

The project has progressed more slowly than expected. The Blackfoot Challenge is overcoming the perception that it is exclusively an environmental group. For this reason, some parties were reluctant to participate, but the Blackfoot Challenge is building trust gradually.

A successful project early in the process is important because it gives participants something positive to claim. Achieving financial security is also vital to the long-term success of the effort. The likelihood of an effort succeeding also depends, in part, on an influential, active set of citizens perceiving a real need within the watershed. Group leaders must be careful to keep initial expectations reasonable. The effort should build slowly and carefully and form a strong foundation. Concentration should be on action over talk.

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Duncan Adams, Interior Wants to Kill a Success, High Country News, May 15, 1995, at 11.

FLATHEAD RIVER AND LAKE, MONTANA

FLATHEAD BASIN COMMISSION

Background:

In the early 1980s, a proposed coal mine in British Columbia attracted attention to water quality concerns in the Flathead River basin. Congress appropriated approximately three million dollars to write an Environmental Impact Statement (EIS) concerning the effect of the proposed coal mine on the watershed. The EIS concluded that the proposed coal mine would adversely impact the watershed and recommended forming a committee to address water quality issues in the basin. In 1985, the Montana Legislature passed legislation establishing the Flathead Basin Commission (Commission).

The water quality of the Flathead River basin has steadily declined over the past twenty years. Much of this decline is associated with forest and water management practices and the high influx of new residents. Water quality degradation could have serious repercussions for the economic vitality and quality of life of the region.

Location and Scale of Watershed:

The Commission addresses the Flathead Lake and River basin located above Kerr Dam in Polson, Montana. The basin includes all of Flathead County, a portion of Lake County and part of British Columbia where the North Fork of the Flathead River flows. The southern two-thirds of Flathead Lake is within the boundaries of the Flathead Indian Reservation, home to members of the Confederated Salish and Kootenai Tribes (Tribes).

Participants:

The Commission consists of twenty-two members, but only thirteen members have voting rights. Twelve of the voting members must reside or have land or water management authority within the Flathead River basin. The Commission membership includes the Governor's Office, the Tribes, Glacier National Park, Flathead National Forest, Montana Department of State Lands, Flathead County Commissioners, Lake County Commissioners and industrial and environmental interests. Ex officio members include the U.S. Environmental Protection Agency (EPA), Montana Department of Natural Resources and Conservation, U.S. Bureau of Reclamation (BOR), Montana Power Company, British Columbia Liaison, Bonneville Power Administration, Montana Department of Health and Environmental Sciences, U.S. Army Corps of Engineers and Montana Department of Fish, Wildlife and Parks.

Citizens interested in the watershed become involved in Commission activities by participating in community meetings, citizen work groups, a technical oversight committee or implementation activities.

Problems Involved:

The water quality problems in the basin resulted from population growth and hydropower, forestry, mining and recreation activities. Logging and road construction cause extra sediment loading in the river. Residential development and the use of on-site septic systems contribute phosphorous and other pollutants to the river. Agricultural activities occur only in the lower basin but contribute nutrients and sediment to the river.

The proposed Cabin Creek coal mine in British Columbia threatens to contaminate water supplies in the basin. Hydropower activities contribute to thermal problems and shoreline erosion and block the migration of the cutthroat and bull trout. Finally, the introduction of exotic species such as the possum shrimp into Flathead Lake has severely disrupted the food chain of native species.

Activities:

Commission activities in the basin include a forest planning process, installation of new gates on Hungry Horse Dam, implementation of advanced wastewater treatment processes and operational changes at Kerr Dam.

The Commission sponsors public forums on issues such as water quality and recently hired a public involvement coordinator to increase public participation in Commission activities. The Commission is developing a comprehensive plan for managing the basin, looking particularly at managing growth and development. One-half million dollars was raised locally to create zoning and land use plans for the area. However, to date Flathead County has not accepted the Commission's land use plans and suggestions.

Processes:

The Commission meets monthly and the Commission chairman facilitates meetings. In approaching watershed problems, the Commission emphasizes public education and persuasion.

Several subcommittees address specific areas or issues within the watershed. For example, the Flathead River Partnership addresses issues specifically affecting the area upstream from Flathead Lake. A binational committee works on coordinating efforts with the province of British Columbia.

According to the authorizing state legislation, the Commission must submit a biennial report to the Governor and the Montana Legislature. The report must include summaries of information gathered in the watershed, information on monitoring activities, identification of land use and land development trends in the basin, recommendations appropriate for the continued preservation of the basin and an accounting of all money received and expended.

Goals:

The Montana Legislature set forth the following mission statement for the Commission: "The purpose of the Flathead basin commission is to protect the existing high quality of the Flathead Lake aquatic environment; the waters that flow into, out of, or are tributary to the lake; and the natural resources and environment of the Flathead basin."

Specific Commission duties include:

- monitoring the existing condition of natural resources in the basin and coordinating development of an annual monitoring plan;
- encouraging close cooperation and coordination among federal, state, provincial, tribal and local resource managers for establishment of compatible resource development standards, comprehensive monitoring and data collection and interpretation and
- encouraging economic development and use of the basin resources to their fullest extent without compromising the present high quality of the basin's aquatic environment.

Funding:

The Bureau of Reclamation paid for the changes made to Hungry Horse Dam. Sewage treatment money came from EPA's Construction Grant Program. A state grant program and the EPA provided funding for watershed plans and water quality monitoring.

Private funds were raised for specific projects, such as local planning efforts, through the Comprehensive Planning Coalition. In addition, the Coors Pure Water 2000 Program and the EPA Clean Lakes Program provided funding for water quality monitoring.

What Has Been Accomplished:

The Commission created a Flathead Lake and Watershed Management Plan for the North Fork of Flathead River. Also, the Commission was instrumental in convincing local communities to adopt secondary and tertiary waste treatment systems. As a result of the improved waste treatment systems and a phosphorous ban in the upper watershed, the total phosphorous discharge has been significantly reduced.

How Participants View Effectiveness, Success:

Public interest in protecting the Flathead River basin remains unusually strong. Normally, the public will not get involved unless their individual values or interests are threatened.

The problems confronting the lake and the entire watershed are becoming more complex. Protection of Flathead Lake requires a new approach that includes all the residents and water users in the basin. However, local interests need to drive the watershed management and protection effort.

According to one state agency participant, the Commission could strengthen its credibility with the public by adding more citizen members, decreasing the influence of the ex officio members and weakening the Commission's ties with the Governor's office.

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Ron Cooper, Department of Natural Resources and Conservation Water Development and Renewable Resource Development Grant Program (Mont. Dept. of Nat. Resources and Conservation), May 1994.

KOOTENAI RIVER, MONTANA

KOOTENAI RIVER NETWORK

Background:

The Kootenai River Network (Network) was formed approximately in 1992 to develop and disseminate information and address problems in the Kootenai River watershed. The Network began after a local environmentalist and a member of the Kootenai Tribe gathered data on metal concentrations in the Kootenai River and were astonished to find high levels of metals in the river.

Location and Scale of Watershed:

The Kootenai River Basin, an international watershed, straddles the Canadian-United States border at the 49th parallel along the eastern rim of the Columbia River Basin. About two-thirds, or 14,000 square miles, of the watershed is located within the province of British Columbia; 3,750 square miles are located in the State of Montana and roughly 1,150 square miles are located in the state of Idaho.

The Kootenai River Basin remains relatively remote and sparsely populated with fewer than 100,000 people living within the basin. The Cranbrook/Kimberley area, the largest municipal center, has a population of approximately 25,000.

Participants:

The Network consists of federal, state, tribal, provincial, industry and citizen group representatives, who are interested in the physical and biological integrity of the Kootenai River Basin. Agencies and organizations in attendance at Network meetings include the British Columbia Ministry of Environment; Cabinet Resource Group; Champion International; East Kootenai Environmental Society; Idaho Department of Fish and Game; Idaho Division of Environmental Quality; Kootenai National Forest; Kootenai Tribe of Idaho; Kootenai Tribes of British Columbia; Montana Department of Fish, Wildlife and Parks; Montana Department of Health and Environmental Science; Noranda Minerals Corporation and Panhandle National Forest.

Problems Involved:

Logging, mining and road building activities adversely affected the water quality and fish and recreational resources of the Kootenai River Basin. The effects of these activities on fish and other aquatic life remain largely undocumented, primarily because public agencies do not have sufficient funds or staff to conduct instream monitoring in the basin. Poor coordination exists among agencies charged with water quality and aquatic resource management. Also, communication needs to be improved among industry, agency and citizen groups.

Bull trout and white sturgeon populations are declining due to lost habitat, competition with nonnative species, over-harvest and alteration of streams in the basin.

Activities:

Network activities include: (1) organizing individual landowners and other interested parties in the basin; (2) compiling an annotated bibliography for the Kootenai River Basin Water Quality Status Report; (3) operating an Adopt-A-Stream Project; (4) creating a Geographic Information System and a computer data base and (5) developing a basinwide management program.

Processes:

A facilitator manages Network meetings, which occur quarterly. The Network is designing a media outreach program to raise public awareness and support through press releases and other methods.

Goals:

The Network's primary goal is to restore and maintain the chemical, physical and biological integrity of the Kootenai River basin waters. In order to achieve this primary goal, the Network set five specific goals: (1) improve communication among governments and public and private interests from British Columbia, Montana and Idaho; (2) pursue coordination of efforts and standardization of methods; (3) develop and implement basinwide water quality monitoring programs; (4) fully utilize monitoring information to accomplish effective water resources management and (5) educate the public and solicit information about water resources issues.

Funding:

The Kootenai Tribe and the U.S. Bureau of Indian Affairs are funding water quality monitoring. Various organizations donated approximately \$50,000 in funding for the Adopt-A-Stream program.

What Has Been Accomplished:

The Network completed a Water Quality Status Report for the river basin. Additionally, the Adopt-A-River Project and water quality monitoring efforts have proceeded successfully.

How Participants View Effectiveness, Success:

According to Jill Davies, Director of the Adopt-A-Stream Project, the Network has progressed little in a relatively long period of time. The biggest problem the Network faces is securing the participation of British Columbia.

Never prejudge who will be a positive or negative force in a watershed-based effort. In this effort, certain industry groups are more active in Network activities than government agencies and environmental groups.

Contact and Source:

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14 Old Bull River Road
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Ken Knudsen, Water Quality Status Report Kootenai River Basin (Ecological Resource Consulting, Helena, Mont.), Jan. 1994.

UPPER CLARK FORK RIVER, MONTANA

UPPER CLARK FORK RIVER BASIN STEERING COMMITTEE

Background:

Northern Lights Institute, a nonprofit organization dedicated to resolving natural resource disputes outside of the judicial system, organized a negotiation group in 1989 to develop consensus management strategies for the Clark Fork River. The negotiation group formed after the Granite Conservation District applied for water reservations for storage sites in the basin about the same time the Montana Department of Fish, Wildlife and Parks applied for instream flow reservations for the upper Clark Fork River and several tributaries. Since both parties faced a lengthy, expensive legal battle with an uncertain outcome, they agreed to participate in discussions facilitated by the Northern Lights Institute concerning their conflicting applications.

The parties agreed to request a temporary closure of the Clark Fork River basin to most new surface water rights and to suspend the instream flow reservation process. The 1991 Montana Legislature passed a bill (Senate Bill 434) implementing the recommendations largely due to the strength of the coalition that agreed to the arrangement. The resulting four year moratorium provided time for interested parties to educate themselves on the needs of the watershed and develop a water management plan, which was approved by the Montana Legislature in 1995.

Location and Scale of Watershed:

The upper Clark Fork River drainage system includes the Clark Fork River itself and its tributaries above Missoula. The upper basin headwaters originate in the Flint Creek Range, Pintler Mountains, Garnet Range, Sapphire Mountains and along the Continental Divide. In Montana, the Clark Fork basin encompasses 22,000 square miles. The Clark Fork flows west into Idaho, where it empties into Lake Pend Oreille.

Participants:

Pursuant to Senate Bill 434, the Montana Department of Natural Resources and Conservation (DNRC) appointed a 21-member Steering Committee to examine water resource issues within the basin and draft a comprehensive water management plan (Management Plan). The original Steering Committee members included local irrigators, environmental and recreational organizations, a county commissioner, a state senator, a state representative, an electric utilities representative and an industry representative. Additionally, five members represent local, state or federal government agencies.

Thirteen committee members were reappointed in 1995, one additional member representing local government was added and eight new members were appointed. The committee now has twenty-two members with basically the same representation as the original committee.

Problems Involved:

Conflicting demands between water development interests and fish and wildlife interests create water allocation dilemmas, which were aggravated by several years of drought. Additionally, mining activities, agricultural and forestry practices and human habitation have degraded the water quality in parts of the upper Clark Fork River basin.

Mining and smelting have contaminated the water with copper and zinc in concentrations high enough to be toxic to fish. Agricultural impacts on water quality include sedimentation, temperature changes, dissolved solids and high levels of nutrients. Municipal and industrial wastewater discharges also contribute nutrients to the Clark Fork River. Logging activities in the basin cause soil erosion and alter the natural habitat of the area. Overgrazing of cattle and sheep also increase erosion as vegetation is stripped from stream banks.

Activities:

During its first year, the Steering Committee adopted ground rules for meetings and heard a series of presentations on water law, water availability, water quality and water uses in the basin. The Steering Committee also toured several areas of the watershed. During the second and third years, the Steering Committee, assisted by subwatershed committees, developed a Work Plan, which outlined the substance and procedure for producing the Management Plan. The Steering Committee completed a draft Management Plan in September 1994.

Over 220 individuals attended meetings concerning development of the Work Plan. Over 100 written surveys from individual water users were received, identifying the water interests, suggesting issues the plan should address and specifying the location of water shortages.

In response to the public interest at the Work Plan meetings, the Steering Committee divided the basin into six subwatersheds and created an ongoing committee for each. The six subwatersheds were: the upper Clark Fork mainstem and tributaries, the lower Clark Fork, the Little Blackfoot, Flint Creek, Rock Creek and the Big Blackfoot. Each subwatershed committee met at night to allow local water users, unable to attend the daytime Steering Committee meetings, to participate in developing the Management Plan. During 1993 and 1994, these committees met on 37 occasions and the meetings were attended by over 400 individuals.

The Steering Committee published a newsletter to keep basin water users informed. Newsletters were mailed to all water rights holders in the basin and other interested organizations and individuals identified from other mailing lists. The newsletter circulation reaches over 2,200 households.

Processes:

The DNRC appointed a Steering Committee to oversee the preparation of the Management Plan. The Management Plan considers all water uses in the upper Clark Fork River basin and makes recommendations on how to manage the water resources. The Management Plan identified seventy management options for different areas of the watershed. The Steering Committee prioritized the options and areas of the watershed.

The Management Plan was approved by the Montana Legislature in 1995. The new Steering Committee is now preparing to implement the plan.

Goals:

Senate Bill 434 identified the following goals of the Management Plan:

- to provide for continued planning and management of the waters of the upper Clark Fork River Basin rooted at the local level and
- to balance all of the basin's beneficial water uses.

Funding:

Grants from the Northwest Area Foundation and the Ford Foundation provided funding for the Steering Committee while it was developing the Management Plan. The DNRC donated staff support to the Steering Committee. Additionally, the Steering Committee applied to the Montana Renewable Resource Grant and Loan Program for funding the implementation of the Management Plan. In 1995, funds were approved by the Legislature.

What Has Been Accomplished:

The Steering Committee completed the Management Plan which was approved by the Montana Legislature in 1995. Even before the Management Plan was completed, the effort experienced political and procedural successes, including the passage of Senate Bill 434 and the participation and cooperation of many interested parties in the Clark Fork River basin.

How Participants View Effectiveness, Success:

According to the Steering Committee facilitator, from the beginning the Steering Committee and its accomplishments exceeded his hopes. The cooperation of many people with diverse interests in developing and completing the Management Plan attests to a great achievement for all those involved.

Many parties were willing to participate because independent funding sources provided a sense of neutrality. Participants also recognized that the alternative to the process, litigation, was expensive, especially considering the chance of losing. The legislative mandate behind the Steering Committee helped keep the parties at the table; legislative support bolstered local efforts and legitimized the results.

Other Comments:

According to Donald Snow of the Northern Lights Institute, "The Clark Fork Project speaks to the need to build community around water — to use what may be the thorniest issue of all, water allocation, as the core of efforts to create sound politics in the American West. We hope that the Project contributes to a new model of public cooperation to create sound politics and better environmental and economic outcomes through local water management and watershed protection."

Contact and Sources:

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Missoula, MT 59802
(406) 543-0026

Upper Clark Fork River Basin Steering Comm., Upper Clark Fork River Basin Water Management Plan (Missoula), Dec. 1994.

Upper Clark Fork River Basin Steering Committee, The Upper Clark Fork Water News (Missoula), Vol. 1 Nos. 1-3, Sept. - June 1993-94.

Janet Maughan, Taming Troubled Waters: How Mediation Triumphed Over Configuration in Shaping the Future of Montana's Storied Clark Fork River (Ford Foundation Report), Summer 1994.

Jennifer Smally, An Overview of Water Planning in Four Western States with Case Studies on Regional Water Planning in Kansas and Montana (Western Network, Santa Fe, N.M.), Sept. 1993.

Donald Snow, "Building Community Around Water: The Shift from Icon to Substance in the Local Politics of Water," in Water Organizations in a Changing West (Natural Resources Law Center, University of Colorado School of Law), June 1993.

APPLEGATE RIVER, OREGON

APPLEGATE PARTNERSHIP

Background:

The Applegate Partnership (Partnership) formed to alleviate the warlike atmosphere, which had developed among the timber industry, environmental groups and government agencies in the Applegate basin. Environmentalists, timber operators and agencies were clashing both in and out of the courtroom and nothing was getting accomplished. The environmentalists wanted a coordinated approach to natural resource planning in the watershed because they were tired of simply responding to agency and industry actions. After frequently being shut down by court injunctions concerning spotted owls or by other environmental pressures, industry representatives became extremely frustrated and started banding together against agencies and national environmental groups.

In the Applegate River watershed, ecosystem health is inextricably linked to the economic well-being of nearly all the community members because of the reliance on the timber industry. According to one of the Partnership founders, the community wanted to find its own solutions, and it became evident that a solution would only be found if all the parties were brought together.

Location and Scale of Watershed:

The Applegate River originates in California and flows through Josephine and Jackson counties in Oregon before emptying into the Rogue River. Nearly seventy percent of the land within the 500,000 acre watershed is federally owned.

Participants:

Partnership members include environmentalists, timber industry representatives, ranchers, community members, the U.S. Bureau of Land Management (BLM) and the U.S. Forest Service.

Problems Involved:

The many years of logging, road building, fire suppression and drought have adversely affected the forests in the watershed. As a result, the forests have become young, overcrowded, insect damaged and at high risk of catastrophic fire. Additionally, organizations and residents within the communities vehemently disagree over how the forests should be managed.

Activities:

The Partnership is developing a newsletter for watershed residents and surveying residents on watershed matters. Also, a subcommittee is collecting existing ecological data to serve as baseline information for future management.

The Partnership is organizing some on-the-ground projects, including headgate construction on areas of the river. Additionally, the Partnership is working with the U.S. Forest Service on timber sales matters and recently succeeded in getting an injunction lifted on a fire-kill area. Both the Forest Service and the BLM are cooperating with the Partnership to accelerate the approval of salvage and thinning timber sales.

Processes:

The Partnership meets weekly and meetings alternate from mornings to evenings in order to provide a convenient time for everyone interested. The attendance at meetings ranges from ten to fifty people. In 1992, a nine-member board of directors was formed representing environmentalists, industry and agency representatives and the general public.

Following the formation of the Partnership, the area was designated as an Adaptive Management Area under President Clinton's new forest plan.

Goals:

The Partnership seeks to mend the social fabric of the community and develop a cooperative planning process for forest management. The Partnership also intends to promote ecosystem health and thereby contribute to economic and community stability within the watershed. A self-imposed three- to five-year deadline for reaching these goals was set by Partnership members to ensure the group will not meet indefinitely if nothing is getting accomplished.

Funding:

The Partnership has received state lottery funds under the Watershed Health Program, including \$10,000 for a newsletter.

The Oregon Watershed Health Program also supplies a coordinator to the Applegate River watershed. The coordinator is not an official Partnership employee but works closely with the Partnership to coordinate the watershed activities funded by the state. The Partnership does not have any full-time staff of its own.

The Partnership is actively seeking funding from other sources; however, Partnership members are concerned that if funding is acquired, the group's mission will change to reflect the mission of the funding source.

What Has Been Accomplished:

The Partnership has succeeded in bringing together parties to talk about watershed issues. According to Duane Cross, a board member representing timber operators, the parties used to meet only in courtrooms, but now people are learning to listen and compromise in a less adversarial environment.

How Participants View Effectiveness, Success:

In general, participants seem pleased with the progress of the Partnership. People are talking to each other instead of screaming or suing. The level of trust between participants has slowly increased.

Within the Partnership, local environmentalists are seen as having a legitimate interest, but the involvement of national organizations in the Partnership is resented. Some residents believe the environmental groups are unable to understand the importance of the timber industry to the community. Some of the national environmental groups have criticized local environmentalists for their involvement in the Partnership.

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BEAR CREEK, OREGON

BEAR CREEK WATERSHED COUNCIL

Background:

In the early 1990s, the county and municipal governments and local residents in the Bear Creek basin formed the Jackson County Water Resources Committees (Jackson Committees) to address local water supply problems. Unlike much of Oregon, the Bear Creek basin is arid, averaging approximately eighteen inches of rainfall annually. The City of Medford imports water from the Rogue River headwaters and Bear Creek basin irrigators import water from the Klamath River basin. In recent years, the basin experienced a long drought.

The Jackson Committees decided to develop a comprehensive water supply plan for the county extending through the year 2050 (2050 Plan). A sub-group of the Jackson Committees, known as the 2050 Committee, took on the tasks of researching and drafting the 2050 Plan. After the 2050 Committee met for about a year, the Oregon Legislature passed the Watershed Health Program, which authorized the formation of local watershed councils and allocated a portion of state lottery funds for watershed projects. Consequently, the 2050 Committee reorganized into the Bear Creek Watershed Council (Council) and expanded its projects beyond water supply issues.

Location and Scale of Watershed:

Bear Creek basin, which contains the largest population center in the region, is located entirely within Jackson County in southwestern Oregon and includes the city of Medford. Bear Creek originates near the California state line and flows into the Rogue River in western Jackson County.

Participants:

Council participants include representatives from six municipalities, Jackson County, the U.S. Natural Resources Conservation Service and the U.S. Bureau of Reclamation. In addition, the U.S. Bureau of Land Management and U.S. Forest Service assist the Council by providing technical information. Basin residents representing agricultural, industrial, environmental and recreational interests participate on the Council. The Council encourages public participation in all activities and meetings.

Problems Involved:

The Council primarily addresses water supply issues, especially since a long drought in the Bear Creek basin has water users scrambling for water. Water quality issues, fishery issues and instream rights for habitat and recreation purposes are also important to the Council. The Council examines land use issues associated with a fast growing population and disappearing agricultural lands.

Activities:

The Council continues to work on the 2050 Plan. The Council is conducting a basin assessment study, planting trees and removing Jackson Street Dam, which blocks chinook salmon passage. The U.S. Bureau of Reclamation is conducting flow studies in the basin in cooperation with the Council. Also, the Council is sponsoring watershed educational programs in the community high schools.

Processes:

The Council is led by an Executive Committee, which meets as needed and consists of representatives from the areas of agriculture, industry, education, municipalities and instream water use. The entire Council meets monthly and the chair of the Executive Committee facilitates the meetings.

Several subcommittees within the Council work on specific issues, including agricultural, municipal, industrial, educational and instream use needs. Decisions are made informally by consensus. The Council avoids controversial issues and focuses on projects upon which everyone can agree.

Goals:

The Council aims to improve water supply and water quality issues in the basin. Participants emphasize finding solutions on the local level to prevent interference from state and federal entities.

Funding:

The Council receives funding from state lottery funds, the U.S. Natural Resources Conservation Service, the U.S. Bureau of Reclamation, the Medford Water Commission and local citizen groups.

What Has Been Accomplished:

The Council has made significant progress on the 2050 Plan. Additionally, the Council succeeded in getting many groups and individuals, who represent diverse interests within the watershed, involved in watershed projects and activities.

How Participants View Effectiveness, Success:

No one has left the table yet and all the parties are still talking according to the chairman of the Council. Many of the participants, including those from agriculture and industry, were surprised to find they had common goals for the Bear Creek basin.

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COOS BAY, OREGON

COOS WATERSHED ASSOCIATION

Background:

In early 1993, landowners in the Coos Bay watershed began discussing cooperative natural resources management, partly because of the possibility that coho salmon would be listed as an endangered species under the Endangered Species Act. Since the economy of the region relies heavily on agriculture, fishing and timber, community members are acutely concerned about natural resources issues that affect those industries.

The Oregon Legislature passed the Watershed Health Program in 1993, which provides for the formation of local watershed councils and sets aside state lottery money for watershed projects. In response to the new program, landowners in the Coos Bay watershed incorporated as the Coos Watershed Association (Coos Association) and applied for state funding.

Location and Scale of Watershed:

Coos Bay watershed is located on the southern part of the Oregon coast and encompasses 590 square miles. The Coos River and its tributaries drain the coast mountain range, which drops from about 4,000 feet in elevation to sea level over a distance of about 45 miles. The topography of the watershed consists of steep dry lands and flat wetlands. The relatively short rivers and streams provide highly valued salmon and trout habitat and the estuaries contain highly productive shellfish beds.

Participants:

Members of the Coos Association include Coos County; U.S. Bureau of Land Management; U.S. Forest Service; environmental groups; timber, aquaculture, recreation, agriculture and fishing interests; the Port of Coos Bay and small woodland owners.

Problems Involved:

At present, the most critical issues in the watershed revolve around salmon habitat, including water quality issues and the lack of refuges for juvenile salmon, which are at risk of being prematurely flushed downstream during times of high winter flows.

Complex combinations of pools, eddies and riffles typically create good salmon spawning and rearing habitat and provide winter refuge. The river systems in the Coos watershed have been greatly simplified over the past hundred years. In-stream logs and boulders have been removed to facilitate boat and log raft passage. Culverts installed to permit stream crossings often impede the up and downstream movement of fish. Lowland marshes and wetlands, which provide rearing habitat and refuge, are largely diked off or filled for industrial, residential, agricultural and transportation uses.

In addition, excessive sediment levels in streams caused by the removal of stream bank vegetation have further contributed to the mortality of salmon eggs and juveniles. Water quality in some of the estuarine portions of the watershed is degraded due to high temperatures, industrial and urban runoff and contaminants from human and animal waste.

Activities:

The Coos Association is constructing instream structures, including boulders and logs placed in the stream beds, to create spawning grounds and protection for juvenile salmon from high flows. Other activities include construction of off-channel ponds for juvenile salmon, assessment and alteration of culverts to improve salmon passage and protection of seedling conifers along stream banks.

Additionally, the Coos Association is setting up a program for displaced loggers to work on land inventories. Rural landowners are contacted personally by association members to introduce residents to the Coos Association and obtain permission to carry out projects on private lands.

Processes:

The Coos Association uses total consensus to make decisions, which is critical to the success of the group according to Anne Donnelly, the Coos Association Coordinator. Several federal and state agencies that do not own land in the watershed participate as technical advisors to the Coos Association.

An Executive Council, consisting of approximately twenty members, leads the Coos Association, which is incorporated as a nonprofit organization. Several smaller committees address financial issues, projects, public outreach and urgent tasks. Additionally, a coordinator manages the day-to-day affairs of the Coos Association. Organization bylaws, a mission statement and a statement of shared values were adopted by the Coos Association.

Goals:

According to the Coos Association's statement of shared values and mission, the "purpose of the Coos Association is to provide a framework to promote, coordinate and implement proven management practices and test promising new management practices, in the interests of watershed health."

The Coos Association adopted the following goals:

- foster and encourage landowner action in the interests of watershed health;
- foster public awareness of watershed processes and activities and opportunities to contribute to watershed health;
- foster scientific understanding through a program of experimental watershed research and focused monitoring;
- serve as a clearinghouse of watershed information and activities;
- provide an organizational framework to accomplish the Association's mission and
- operate according to a plan which supports environmental integrity and economic stability within the Coos Watershed.

Funding:

The Coos Association received funding for initial projects and operational support from state lottery funds through the Watershed Health Program. Also, members and landowners involved in projects contribute cash and donate materials and services. For example, the Port of Coos Bay is providing office space for the coordinator; the U.S. Bureau of Land Management has contributed significant technical assistance; and corporate members, such as the Weyerhaeuser Company, contribute materials and services.

Federal funding was obtained from various disaster relief funds, allowing the Coos Association to hire displaced loggers and fishermen to work on stream enhancement projects.

What Has Been Accomplished:

The Coos Association has succeeded in coordinating the efforts of many interested parties within the watershed and completing many on-the-ground projects. A high level of interest in the Coos Association and watershed issues in general exists in the area.

How Participants View Effectiveness, Success:

It is critical that the group genuinely commit to consensus-based decision making. By using consensus, no one is discouraged from joining the group because they are afraid of being outvoted. Landowners need to know they are not losing control over their own property by agreeing to work with the Coos Association. By identifying a shared vision and focusing on how to accomplish it, watershed groups can become productive and avoid rehashing the past or assigning blame.

The Oregon Watershed Health Program has succeeded in inspiring the organization of many watershed groups like the Coos Association. This sort of state legislation legitimizes local watershed efforts and assists them by granting money, which may otherwise not be available.

Currently, funding is provided primarily for on-the-ground projects. While these projects have gone well, participants of the Coos Association often wish they could obtain money and resources to conduct more studies and develop plans for the watershed. A more precise understanding of the problems and possible solutions would permit better project planning.

Other Comments:

The interests and activities of a watershed group can overlap in a variety of ways with the responsibilities of existing state and federal agencies and local governments. Representatives of agencies and local governments should be included in the watershed group (either as members or as technical advisors) at the earliest possible stages in order to minimize any misapprehension about the group's purpose. These entities can provide valuable resources and expertise.

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COQUILLE RIVER, OREGON

COQUILLE WATERSHED ASSOCIATION

Background:

In April 1994, the Oregon State University Extension Service organized a meeting to see if community members in the Coquille River basin were interested in forming a watershed council. The Extension Service sent letters to groups and individuals active in the basin and the meeting was advertised in the local newspaper. About twenty people attended the initial meeting and eventually formed the Coquille Watershed Association (Coquille Association).

The passage of Oregon's Watershed Health Program, which authorized the formation of local watershed councils and allocated state lottery funds for watershed projects, served as an important impetus to the formation of the Coquille Association. However, Ed Peterson from the U.S. Natural Resources Conservation Service believes the association would have formed without the state program because of the overwhelming interest among residents within the watershed.

Location and Scale of Watershed:

The Coquille River Basin is located south of Coos Bay on the southern Oregon coast. The Coquille River, which is part of the South Coast/Rogue area, drains approximately 1,059 square miles.

Participants:

The Coquille Association consists of timber landowners, U.S. Forest Service, U.S. Bureau of Land Management, Oregon Department of Fish and Wildlife, private landowners, Coos Soil and Water Conservation District, Audubon Society, Friends of the Coquille and fishery interests.

Problems Involved:

The problems in the Coquille watershed all relate to the declining salmon and steelhead populations. Degraded water quality, poor riparian habitat and water diversions all contribute to the declining anadromous fish populations.

Activities:

In 1994, the Coquille Association constructed approximately 300 instream structures (such as planting boulder or log impediments to improve fish habitat) and installed over 300 miles of fence to protect riparian areas from cattle. Other restoration activities include culvert alteration to allow salmon passage, off-channel pond construction and revegetation of stream banks.

In addition to ongoing stream restoration projects, the Coquille Association sponsors landowner workshops, tours and educational programs in the community schools.

Processes:

The Coquille Association, a nonprofit corporation, consists of an Executive Council and a General Membership Committee. The Executive Council meets monthly, makes policy decisions and serves as a board of directors for the association. The General Membership Committee meets every two months. Total consensus is used by both the Council and the Committee to make decisions.

The Coquille Association hired a coordinator temporarily to get the association started. The Coos Soil and Water Conservation District is managing the money and providing administrative services. A technical advisory committee consisting of state and federal agency representatives serves the Coquille Association, the Coos Association and the Coos County Commissioners.

Goals:

As stated in the Coquille Association's Articles of Incorporation, the purpose of the association is "to provide an organizational framework to coordinate the assessment of the watershed's conditions, implement and monitor proven management practices and test new management practices that are designed to support environmental integrity and economic stability for the communities of the Coquille Watershed."

Funding:

The Coquille Association receives federal funds under the Clean Water Act and the Bring Back the Natives Program. The state has provided money under the Watershed Health Program and through the Governor's Watershed Enhancement Board. Coos County, the U.S. Farm Service Agency and individual Coquille Association members contribute money and in-kind services.

What Has Been Accomplished:

The Coquille Association has completed many stream restoration projects and developed a strategic plan for the Coquille River watershed. Many residents show a great deal of interest in watershed issues and are participating in the Coquille Association.

How Participants View Effectiveness, Success:

The only apparent limitations on the Coquille Association seem to be the amount of money and resources available. The participants and the public are eager to participate in as many restoration projects and education projects as the association can produce.

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GRANDE RONDE RIVER, OREGON

GRANDE RONDE MODEL WATERSHED PROGRAM

Background:

Concern over water development for agricultural and flood control purposes has existed among residents in the Grande Ronde River basin for a long time. At separate times, the U.S. Bureau of Reclamation (BOR) and the U.S. Army Corps of Engineers have proposed projects for the Grande Ronde River and its tributaries. Interested parties in the area have come together on several occasions to discuss proposed projects. In the late 1980s, the BOR began a water optimization study to assess plans to build storage facilities. In response to the study, Union County organized a small advisory committee to look at water resources in the basin.

In 1992, the Northwest Power Planning Council, a congressionally-mandated interstate council whose mission includes protection and enhancement of the Columbia Basin's fish and wildlife, was searching for a model watershed organization to determine how local entities could effectively manage salmon habitat restoration projects. The advisory committee that had previously met with the BOR lobbied for and received the Council's model watershed designation. The Council chose the Grande Ronde River basin because a loosely-organized group already existed and the summer chinook salmon populations in the basin had severely declined. As a result of the model watershed designation, the advisory committee expanded its focus beyond water development to include wildlife habitat and salmon recovery issues.

Two years later, the Oregon Strategic Water Management Group recognized the Grande Ronde Model Watershed Program (Grande Ronde Program) and decided to provide state funding and coordination assistance to the program under the Oregon Watershed Health Program.

Location and Scale of Watershed:

The Grande Ronde Program includes both the Grande Ronde River watershed and the neighboring Imnaha River watershed. The Imnaha River basin is included in the program due to its physical proximity and its sparse population. Otherwise, the basin might not be included in a watershed effort.

The Grande Ronde River watershed, which encompasses approximately 5,265 square miles, is located in northeastern Oregon in the Columbia River basin and includes two Oregon counties, Wallowa and Union. The Grande Ronde River system consists of 280 rivers and streams; the river eventually empties into the Snake River. The largest municipality in the watershed is La Grande.

Participants:

The participants in the Grande Ronde Program include the counties of Wallowa and Union, U.S. Forest Service, U.S. Bureau of Reclamation, Oregon Cattlemen's Association, Eastern Oregon State College, U.S. Natural Resources Conservation Service, soil and water conservation districts in Union and Wallowa counties, Boise Cascade Company, U.S. Environmental Protection Agency and citizens living in the watershed.

The Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe and the Columbia River Inter-Tribal Fish Commission are all involved to some extent with the Grande Ronde Program.

Problems Involved:

Chinook salmon and steelhead populations have declined severely in recent years. Sedimentation caused by mining, logging, grazing and wildfires remains a significant factor in the decline of the salmon population. Additionally, a decline in riparian vegetation has led to high water temperatures which often violate state water quality standards. Conflict also exists over impending road construction and future timber harvesting activities.

Activities:

The Grande Ronde Board of Directors (Board) meets monthly and provides policy development, oversight and direction to the overall program. The Board does not get directly involved in watershed projects, but hires consultants and requests agencies to do project work. The Board hired a consultant to prepare a basin habitat assessment and identify priority restoration projects.

The Board established a technical committee composed of local and academic specialists to review projects and make recommendations to the Board. The technical committee is developing a process for selecting stream areas for high priority habitat and restoration work. The first projects will focus largely on salmon habitat restoration and will shift to upslope watershed restoration and management activities over the longer term.

Processes:

The Grande Ronde Program is governed by a fourteen-member Board, which was designated by the Union County Commission and the Wallowa County Court. A charter and bylaws, which were ratified by Union and Wallowa counties, govern Board actions. Board decisions require at least a sixty percent majority vote. Due to the large area covered by the program, the Board meets alternately in the cities of La Grande, Elgin and Enterprise.

The Blue Mountains Natural Resources Institute (Institute) provides staff and support to the Grande Ronde Program pursuant to a cooperative agreement. The Institute serves as the administrative office for the Grande Ronde Program and the executive director from the Institute is responsible for program planning and finances. Technical groups are formed when needed to address a variety of topics. The Grande Ronde Program also coordinates its efforts with the activities and projects of sub-basin groups and the Wallowa County Salmon Recovery Group.

Goals:

The mission of the Grande Ronde Program is "to develop and oversee the implementation, maintenance and monitoring of coordinated resource management that will enhance [the basin's] natural resources." Specific goals include restoring and enhancing salmon habitat, soliciting public involvement, providing recommendations for basin management and coordinated resource management, monitoring basin activities and protecting the customs, cultures and economic stability of local inhabitants including Indian tribes.

Funding:

The Grande Ronde Program receives both state and federal funding. The Northwest Power Planning Council provides funding for two full-time staff members, an executive director and a program coordinator. Those funds are administered through the Blue Mountains Natural Resources Institute. Additional funding is available for part-time help and office space. The Bureau of Reclamation has also contributed \$17,000 in matching funds for development of a habitat assessment.

State funding from the Watershed Health Program is used by the Watershed Health Program's field team to fund on-the-ground projects within the basin that have been approved by the Board. The Board is currently seeking future funding for the Grande Ronde Program.

What Has Been Accomplished:

The Grande Ronde Program has succeeded in raising public awareness of watershed issues and bringing together many interested parties.

How Participants View Effectiveness, Success:

Although the various interests are still wary of each other, through the program the participants have become more accepting of each other's views.

Participants disagree on the appropriate membership for the Board. Some participants argue that agricultural interests dominate the Board. On the other hand, other participants claim this dominance is necessary to gain community acceptance. Since environmentalists do not have property interests at risk, some contend more private landowners should serve on the Board.

Contact and Sources:

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10901 Island Avenue
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(503) 962-6590

Grande Ronde Model Watershed Program (Bonneville Power Administration), Jan. 1993 -
Mar. 1994.

Craig Harper, "Potential Institutional Arrangements for Long-Term Watershed Management in
Johnson Creek," Technical Memorandum No. 9, Draft Revision 1 (Woodward-Clyde
Consultants), Mar. 1994.

ILLINOIS RIVER, OREGON

ILLINOIS VALLEY WATERSHED COUNCIL

Background:

The Rogue Valley Council of Governments (RVCOG) initially attempted to organize a coordinated watershed management effort in the Illinois River watershed. The RVCOG sponsored a two-day public symposium in May 1992, which included presentations and a public workshop on watershed issues. Approximately 140 people attended the symposium presentations and 90 people attended the public workshop.

Subsequently, a community watershed group named the Illinois Basin Interest Group (IBIG) formed. IBIG is still active in the watershed and has completed many tree planting projects. However, IBIG's membership became severely polarized between members advocating commodity interests and members advocating environmental interests.

The Oregon Legislature passed the Oregon Watershed Health Program in 1993, which provided for the formation and funding of local watershed councils. In response, the Illinois Valley Natural Resources Conservation District (District) formed the Illinois Valley Watershed Council (Council) consisting of existing District board members and other individuals representing various interests in the watershed.

The Council had difficulties obtaining recognition under the Oregon Health Watershed Program on the ground that it did not have diverse representation. However, the Council eventually received state recognition.

Location and Scale of Watershed:

The Illinois River is located in the southwestern corner of Oregon and flows into the Rogue River near the City of Agness. The Council addresses the entire Illinois River watershed, most of which is located in Josephine County, Oregon.

Participants:

Council members include District board members plus representatives from the fishery industry, educational community, mining industry, a local environmental group and the City of Cave Junction.

Problems Involved:

The problems on the Illinois River include poor water quality and deteriorating fish habitat. The declining anadromous fish populations are a primary concern in the watershed. High water temperatures in the summer months and low river flows have harmed the fish populations in the river.

Activities:

The Council is working with IBIG to administer and fund tree planting projects initiated by IBIG. Volunteers within the community donate labor to plant trees. Additionally, the Council is eliminating a gravel pushup dam in the river that is blocking fish passage.

The Council is also planning additional projects and is seeking state funding for project implementation.

Processes:

A watershed coordinator from the District was appointed to organize the Council and begin planning projects and activities. Technical advisory committees address specific areas, such as fishery, agricultural, water quality, water resources and educational issues. Many agency representatives serve on the technical advisory committees and exchange technical information with the Council.

When the Council was developing its Watershed Assessment and Action Plan, several community meetings were held to get public input for the plan. Also, all Council meetings are open to the public.

Goals:

The Council generally seeks to improve water quality and fish habitat in the Illinois River. Specifically, the Council hopes to restore riparian areas, construct off-stream impoundments and repair inefficient water conveyance systems.

Funding:

The Watershed Health Program provides funding for the Council and its activities.

What Has Been Accomplished:

The Council received recognition from the Watershed Health Program and submitted a Watershed Assessment and Action Plan for the Illinois River watershed.

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JOHN DAY RIVER, OREGON

JOHN DAY BASIN COUNCIL

Background:

Between 1980 and 1986, the Oregon Water Resources Department (Department) rewrote the John Day Basin Program (Program). To help reformulate the Program, the Department asked local residents to organize an advisory committee consisting of residents, fishermen and ranchers. After the Program was complete, members of the committee decided to stay together to ensure their work would do more than simply sit on a shelf.

Soon afterward, several state agencies submitted instream right applications for fish and wildlife needs and residents were concerned about the applications and wanted a say in what these agencies were doing. The advisory committee members went to the County Court and in 1987 the court authorized the formation of the John Day Basin Council (Basin Council). Membership of the Basin Council was originally nearly identical to the membership of the Department's advisory committee. Since 1987, participation by Basin Council members and others has fluctuated.

Although state legislation was adopted in 1993 allowing the formation of local councils subject to appointment under the legislative guidelines, the Basin Council members have never been formally appointed under the state program. However, in the North Fork of the John Day, a watershed council has been appointed and other areas of the basin are expressing interest in forming a watershed council.

As of late 1994, the John Day Basin Council has not been actively meeting. One of the last decisions made by the Council was to recognize that the overall basin may be too large for one watershed council.

Location and Scale of Watershed:

The John Day River watershed encompasses approximately 8,100 square miles in north central Oregon. The river flows north to the Columbia River through an arid, sparsely populated region. The U.S. Forest Service manages approximately sixty percent of the upper basin and the U.S. Bureau of Land Management (BLM) manages about twenty percent of the lower basin.

Participants:

The Basin Council originally consisted of citizen representatives from four of the seven counties located within the watershed (technically the John Day drains portions of eleven counties). Grant County is the most active county in the Basin Council and Jefferson, Wasco and Morrow are active to a lesser extent. In addition to Basin Council members, participation at meetings includes agency representatives from the Oregon Department of Fish and Wildlife, BLM, U.S. Forest Service, U.S. Bureau of Reclamation, Oregon Department of Forestry, local soil and water conservation districts and the Oregon Water Resources Department.

Problems Involved:

Human activities such as road building and logging have reduced the land's capacity to hold water and subsequently have affected the timing of river flows. Specific problems include declining fish populations, low summer flows and high water temperatures.

Farmers in the basin would like to see water storage facilities built for irrigation use. Currently, no storage facilities exist along the river.

Activities:

Until late 1994, the Basin Council met regularly. Few activities were carried out beyond the regular meetings. Since the Basin Council is technically an advisory council to the County Court, there is a limit to what the group can do.

The Basin Council has sponsored two studies on the feasibility of constructing storage facilities in the basin. The Oregon Department of Fish and Wildlife rejected all suggestions from the studies.

Processes:

The Basin Council was designed to include two representatives from seven of the counties in the watershed. However, three counties have not participated in the Basin Council. Participating state and federal agencies send representatives to serve in an advisory capacity. The Basin Council remains a loosely organized group with little formal structure.

Goals:

The Basin Council has no mission statement or formally stated goals, but it originally intended to serve as a forum for considering the concerns of different groups within the watershed.

Funding:

The U.S. Bureau of Reclamation helped pay for planning efforts for the Basin Council and the Oregon Department of Agriculture also contributed a series of planning grants. Coors granted the Basin Council \$1,000 to construct fencing and protect riparian areas from cattle. Many other individuals and groups volunteered a considerable amount of time and money to the Basin Council.

What Has Been Accomplished:

The Basin Council sponsored the development and publication of the Upper John Day Water Optimization Working Paper. Also the development of a Stream Restoration Program and voluntary efforts to conserve water resulted from the Basin Council's work.

How Participants View Effectiveness, Success:

Many Basin Council members became frustrated and left the council due to the lack of immediate benefits or on-the-ground projects. Some members also became frustrated with agencies' long-range planning approach and were annoyed that outside agencies were working in the basin.

The Basin Council Chairman, a rancher in the lower basin, believes a better way to accomplish council objectives would be to "give a bunch of guys like me some money and some shovels and just let us do it." The chairman says he has become pessimistic about the group. He says everyone is so paranoid about water issues that they plan and plan and never do anything. His advice for people trying to participate in community watershed groups is "Don't expect to get anything done."

Other Comments:

The large size of the John Day River Basin presents fundamental problems in operating a watershed group. First, the travel time across the basin is four and a half hours and many lower basin residents are not able or willing to travel 150 miles for meetings. Second, the number of counties involved makes it difficult. Many of the counties with a very small interest in the watershed are dropping out. (Wasco, for example, has about twenty people living in its portion of the basin.) Third, the vast majority of the population is located in the upper basin and some regions of the lower basin are essentially unpopulated. In short, the basin is too big in terms of miles for an effective group, but there are simply too few people in the lower basin to form a sub-basin group.

Although the John Day River Council is one of the older watershed groups in the state, it is making less progress than most according to Mitch Lewis, the Grant County assistant water master. Part of the problem is the lack of money to fund any projects in the basin.

Mitch Lewis also made the following suggestions regarding the organization and structure of watershed groups:

- develop a mission statement and provide focus for the group;
- structure meeting by using an agenda so that time is used efficiently and
- obtain strong sources of funding to sustain the group's work.

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LITTLE BUTTE CREEK, OREGON

LITTLE BUTTE CREEK WATERSHED COUNCIL

Background:

The Little Butte Creek Watershed Council (Council) evolved from a local nonprofit group working on economic development issues for the City of Eagle Point. Since Little Butte Creek was so important to the agricultural economy of Eagle Point and the surrounding area, the group addressed many river basin issues and eventually set up a water committee to focus solely on Little Butte Creek issues.

The water committee applied for and received funds from the Governor's Watershed Enhancement Board (GWEB) to organize watershed education projects in the community. Shortly thereafter, the Oregon legislature passed the Oregon Watershed Health Program, which provided for the formation of local watershed councils and allocated state lottery funds for watershed projects. Because of the water committee's initial work and the GWEB funding, the community decided to form a watershed council under the Watershed Health Program. The Council was approved by the Jackson County Commissioners in May 1994.

Location and Scale of Watershed:

The Little Butte Creek watershed, located primarily in Jackson County, encompasses 3200 square miles. Little Butte Creek originates in the Cascade Mountains and flows through eastern Jackson County, past the city of Eagle Point and into the Rogue River.

Because Little Butte Creek provides the highest river reaches in the stream system that are accessible to salmon, the creek is an important coho salmon spawning habitat.

Participants:

The Council consists of about sixteen landowners in the Little Butte Creek watershed. The members represent many interests within the watershed, including timber, agriculture, ranching and environmental interests. Most of the watershed is owned by the U.S. Forest Service and the U.S. Bureau of Land Management (BLM) and these agencies provide technical assistance but do not participate in Council decision making.

In addition, the Council often contacts other federal and state agencies to exchange information and suggestions. These agencies include the Oregon Water Resources Department, U.S. Natural Resources Conservation Service and the U.S. Fish and Wildlife Service.

Problems Involved:

The Council focuses primarily on improving salmon habitat in the watershed. The coho salmon populations are declining and spawning at low rates. Stream channel alterations, such as the elimination of side channels and the removal of natural obstacles from the stream, have caused the river to flow more quickly. As a result, spawning habitat and protective habitat for juvenile salmon have been destroyed.

Several irrigation diversion structures are impassable to salmon because jump pools and fish ladders have deteriorated. Also, some water quality problems exist due to livestock grazing and other sources.

Activities:

The Council has organized public forums on the following topics: Watershed Management; History of Little Butte Creek; and Fisheries, Forestry and the Community. Additionally, the Council sponsors a school educational program on coho salmon. Landowners are encouraged to report pollution problems and to request information on riparian planting and salmon habitat projects. Articles which solicit involvement from landowners are frequently printed in the local paper.

During the summers, the Council constructs salmon structures, including off-channel ponds for juvenile salmon and natural barriers to vary the stream flows. Local students and Trout Unlimited members have donated time for planting trees in the watershed.

Eleven Council members received training from the U.S. Fish and Wildlife Service to do weekly spawning surveys.

Processes:

A half-time coordinator organizes and facilitates Council meetings. The Council meets monthly and has completed a Watershed Action and Assessment Plan as required under the Watershed Health Program.

Although the Council's projects focus specifically on salmon issues, the Council spends part of each meeting discussing other watershed issues such as timber and agriculture. The Council requires a super majority vote for decision making, but tries to achieve total consensus.

Goals:

The Council seeks to improve anadromous fish habitat and gain a thorough understanding of the Little Butte Creek watershed.

Funding:

The Governor's Watershed Enhancement Board provided funding for the Council's educational programs. The Council received approximately \$91,000 in state lottery funds under the Watershed Health Program. Additionally, the U.S. Fish and Wildlife Service gave the Council a grant for riparian fencing and planting projects.

What Has Been Accomplished:

The Council received positive and enthusiastic feedback on its evaluation forms from the public forums. Many restoration projects were completed by the Council in 1994. Also, landowners in the watershed are beginning to call the Council Coordinator to ask about the Council's projects and report problems in the watershed.

How Participants View Effectiveness, Success:

One irrigation diversion structure in Little Butte Creek that is notorious for blocking salmon passage has attracted attention from all over the Rogue River basin and the state. Citizens in the Lower Rogue basin became concerned about the effect of the diversion structure on salmon and eventually toured the site with the Council. The Council hopes to coordinate with the Lower Rogue basin citizens to modify the diversion structure and share the modification costs.

The Oregon Water Resources Department threatened to issue a citation to an irrigation district because of this same diversion structure. The Council contacted the Water Resources Department and explained that efforts were being taken to correct the situation. The Department agreed not to issue any citations as long as the Council was working on the problem.

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LOWER DESCHUTES RIVER, OREGON

DESCHUTES RIVER POLICY GROUP

Background:

In the mid-1980s, the Warm Springs Indian Tribe introduced a bill in the Oregon Legislature to reduce damage to the river basin by limiting recreation uses. In response, recreation groups introduced their own bill. As a compromise, the Oregon Legislature established a recreation resource management area, which required the development of a recreation plan and the creation of a nine-member planning committee (Deschutes River Management Committee).

Soon afterward, the Lower Deschutes River was designated as a federal Wild and Scenic River, which required a federal planning effort. Instead of having two groups doing essentially the same work, a joint committee was created called the Deschutes River Policy Group (DRPG). The DRPG consisted of members from the Deschutes River Management Committee plus eleven tribal and other public entities. The primary purpose of the DRPG was to develop a comprehensive management plan for the lower river.

Location and Scale of Watershed:

The Deschutes River flows from central Oregon into the Columbia River; however, the DRPG addresses only the lower twenty-four miles of the Deschutes River. The river is a world-class steelhead and trout stream and a popular white water recreation area.

Participants:

The DRPG consisted of nine private citizens appointed by the governor plus eleven tribal and public entities including the U.S. Forest Service, U.S. Bureau of Land Management (BLM) and the Warm Springs Indian Tribe.

Problems Involved:

Recreational use along the Lower Deschutes River was becoming excessive. Visitor activities, which resulted in litter, trespass and congestion, were degrading the river and adversely affecting everyone's enjoyment of the river.

Activities:

The DRPG began meeting in 1988 and took five to six years to work out a Joint River Plan (Plan) for the lower river. Although the Plan has been completed, some issues are still being litigated. As a result, there is a chance the DRPG will reconvene for briefings, but the group's work is essentially completed.

The Plan addresses land acquisition guidelines, access issues, methodology on monitoring and power boat regulations.

Processes:

Each participating agency appointed a representative who signed a Memorandum of Understanding on behalf of the agency. Agencies were willing to postpone management decisions until the Plan was completed.

The planning process utilized a neutral facilitator with no background in natural resources issues and all decisions were made by consensus. In addition a four-member appeals board, the Executive Review Board, was used to resolve conflicts.

Goals:

The DRPG sought to develop a comprehensive management plan for the river that would satisfy the Oregon Legislature and the National Wild and Scenic Rivers Act.

Funding:

To pay for the original planning effort, the Oregon Legislature allocated funds from boater pass revenues. The BLM paid for the actual Plan preparation from Wild and Scenic River funds.

What Has Been Accomplished:

The Plan was completed and adopted by the BLM as part of its compliance with the Wild and Scenic River designation.

How Participants View Effectiveness, Success:

According to Ronotta McNair, a U.S. Forest Service employee who is currently working at BLM, forming a group representing various interests is the only effective way to produce a river plan. Otherwise, she said, there would be challenges to any plan, and implementation would be next to impossible. It is best to bring all the players to the table at the beginning and get the issues resolved in the planning process.

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MCKENZIE RIVER, OREGON

MCKENZIE WATERSHED COUNCIL

Background:

In a 1991 joint session, the Lane County Board of Commissioners and the Eugene Water and Electric Board (EWEB) acknowledged the piecemeal approach used to manage MacKenzie River watershed resources would continue to frustrate the diverse groups interested in the basin. Together, Lane County and EWEB provided funding in 1991 and 1992 to initiate a scoping study that evaluated the development of an integrated watershed management program for the McKenzie River basin.

After reviewing the scoping study, the Lane County and EWEB commissioners voted unanimously to support development of a watershed program for the McKenzie River. Consequently, a twenty-member McKenzie Watershed Council (Council) formed in 1993 to address water resource issues in the McKenzie River watershed.

Location and Scale of Watershed:

The McKenzie River flows from the crest of the Cascade mountains westward to the confluence of the Willamette River near the Eugene-Springfield metropolitan area. The main stem of the McKenzie River originates at Clear Lake and flows approximately ninety miles before reaching the Willamette River. The watershed encompasses approximately 1,300 square miles in Lane and Linn Counties.

Participants:

Council members include representatives from the Agripac Cooperative, McKenzie Fisheries Restoration Project, McKenzie Residents Association, Mohawk Community Council, Pacific Rivers Council, Rural Resources Development Committee, Weyerhaeuser Company, the cities of Eugene and Springfield, East Lane Soil and Water Conservation District, Eugene Water and Electric Board, Lane County, Springfield Utility Board, Willamalane Park and Recreation District, U.S. Army Corps of Engineers, U.S. Bureau of Land Management, U.S. Forest Service, Oregon Division of State Lands and the Oregon Water Resources Department.

In addition, other local, state and federal government agencies participate on the McKenzie Coordination Team.

Problems Involved:

The Council addresses water quality, fish and wildlife habitat, recreation and land use issues in the watershed.

Activities:

The Council has completed its comprehensive watershed plan and is beginning to implement the plan. The Council has sponsored a tree planting demonstration project involving volunteers in the community. A water quality monitoring program is under way that includes citizen volunteers and the Council is working to establish a common data base for the entire watershed. Additionally, the Council is active in state and local agency natural resource rulemakings that might affect the McKenzie River watershed.

The Council reaches out to the public on watershed issues through meetings with community groups, open houses, a county fair booth and other similar events. A newspaper insert distributed to about 60,000 households in the watershed and the adjacent metropolitan area introduces the Council to the public. Additionally, to assist educators, the Council produces a summary of existing educational curricula and monitoring programs.

Processes:

The Council began by conducting a scoping study, which included extensive interviews with representatives of government agencies and private interest groups affected by water resource issues. The study also entailed a review of existing plans and reports for the basin.

The Lane Council of Government serves as project manager. Managing the project involves preparation of agendas and minutes for council and subcommittee meetings; working with the co-chairs for agenda setting and debriefing members; monitoring mailouts, public notices, correspondence and record keeping; collecting reference materials and preparing display materials.

The Council members selected co-chairs to serve as spokespersons and advise the project manager on Council agendas. The co-chairs also call and manage council meetings and enforce meeting ground rules. All decision making is done by consensus. A neutral facilitator was appointed by the Council to conduct the meetings and ensure full inclusion of the participants.

Additionally, the Council organized several subcommittees including the Process Subcommittee, Program Resources Subcommittee, Citizen Involvement Subcommittee and the Editorial Board. A Coordination Team, consisting of agency representatives and technical experts, assists the project manager in obtaining information and carrying out tasks assigned by the Council.

Goals:

The Council works to foster better stewardship of the McKenzie River watershed resources, deal with issues in advance of resource degradation and ensure sustainable watershed health and uses.

Specific objectives include:

- improve communication among affected private individuals, interested citizens and representatives of local, state and federal agencies;
- establish a framework for coordination, cooperation and citizen involvement;
- provide a forum for resolving problems and conflicts related to the Council's mission when all parties to the problems or conflict agree to refer the matter to the Council;
- develop an integrated, comprehensive watershed management program that includes an action plan, to achieve and maintain watershed health;
- provide ongoing program evaluation during implementation and
- promote ongoing monitoring of the health of the McKenzie River Watershed.

By the summer of 1996, the Council intends to become a self-sufficient entity that can seek and administer funds independently.

Funding:

Local governments successfully lobbied Congress to obtain funding for the McKenzie River watershed program. This cooperative annual lobbying effort, known as the *United Front*, sets priorities and presents them to Oregon's congressional delegation and key federal agencies. In fiscal year 1993, Congress appropriated \$600,000 to the Environmental Protection Agency (EPA) to initiate the McKenzie River watershed program. Subsequently, EPA approved the \$600,000 grant to Lane Council of Governments for start-up activities and program development.

The *United Front* was successful in garnering additional support for the McKenzie River watershed program by highlighting the tasks completed or initiated under the EPA appropriation. Congress appropriated \$250,000 in 1994 and in 1995 (for a total of \$500,000) to the U.S. Natural Resources Conservation Service to continue work on the McKenzie River watershed program.

Lane County and EWEB jointly funded the initial scoping study. Participating agencies have also provided funding and in kind services to the Council.

What Has Been Accomplished:

The Council recently completed its watershed action plan, which focuses on fish and wildlife habitat and water quality. Additionally, the Council established a forum to discuss watershed issues and resolve disputes between parties who consent to bring their disagreements to the Council.

The Council has also had success in lobbying for funding and participating in agency rulemaking processes. Many educational activities and projects are completed or under way throughout the watershed.

How Participants View Effectiveness, Success:

It is essential to have a strong process and structure to have an effective watershed effort. A good process adds credibility to the effort within the community and outside of the community, which is essential when seeking funding.

Working by consensus, rather than by majority rule, is preferred in order to gain maximum support for group decisions.

It is valuable to have a local agency or agencies act as conveners or initiators to set the process in motion. Lane County and EWEB played a key role as conveners during the scoping and start-up phases. They provided support and impetus to propose a starting framework (study organization, council membership, general scope and purpose), seek start-up funding and create the vision for the watershed program.

Other Comments:

Consider electing co-chairs. Dividing and sharing the responsibilities allows one chair to run the meeting and the other chair to act as facilitator. The style of one chair can complement or offset the style of the other, which gives a broader window on the whole council for setting the agenda and setting direction for the council.

Contact and Source:

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Lane Council of Governments, How the McKenzie Watershed Council Got Started, May 1995.

MIDDLE ROGUE RIVER, OREGON

MIDDLE ROGUE WATERSHED COUNCIL

Background:

The Josephine County Water Resources Advisory Committee (Advisory Committee), which addresses water matters within the county, organized the Middle Rogue River Watershed Council (Council) after the Oregon Legislature passed the Watershed Health Program. The Watershed Health Program provides for the formation and funding of local watershed councils and watershed projects. In 1994, the Council was approved by the Josephine County Commissioners and the Strategic Water Management Group which gave the Council official recognition under the Watershed Health Program.

Location and Scale of Watershed:

The Middle Rogue River watershed, located primarily in Josephine County, encompasses approximately 548 square miles; it covers the Rogue River basin above the Illinois River and Applegate River basins. The watershed includes Kelsey Creek and Grave Creek, which include portions of Curry County and Jackson County.

Participants:

The Council includes local citizens representing diverse interests within the watershed such as environmental, business, agricultural and timber. The realtors' board and other interested citizens and organizations also serve on the Council.

Although federal and state agencies are not members of the Council, the Council exchanges information and coordinates efforts with agencies through the Council coordinator.

Problems Involved:

The Council uses the salmon as an indicator species for the health of the watershed. Sedimentation, water diversions and stream channel alterations adversely affect the salmon population. Culverts that obstruct fish passage, the lack of fish screens or diversion structures and the removal of natural barriers in the stream contribute to declines in the salmon population. Mining and grazing activities, road construction and riparian clearing contribute to sedimentation in the watershed. Other water quality problems include low river flows, urban septic system problems, animal waste and excessive aquatic growth in the stream beds.

Water users in the area are struggling with water shortage problems, which were aggravated by a long drought period.

Activities:

The Council sponsors tree planting projects and works closely with local schools to involve students in the planting activities. Nearly 35,000 trees were planted in some of the projects.

Additionally, the Council is working with the Picket Creek Irrigation Association to change one of the Association's points of diversion. This project will improve fish passage and involves removing a diversion dam and dismantling a ditch.

In order to remove contaminants from irrigation run-off, the Council is developing a wetland area that will be used to filter the water and deliver it to a fishery within Grants Pass. This project will serve as a demonstration and education project and include a public trail with signs explaining the project.

Processes:

The Council meets monthly and all meetings are open to the public. One of the first tasks completed by the Council was drafting a Watershed Assessment and Action Plan, which included an outline of watershed projects the Council intends to implement. The Council chair facilitates the meetings and decision making is achieved by a majority vote even though the Council tries to achieve a consensus whenever possible.

A Council coordinator works with the public, handles administrative tasks and reviews project suggestions submitted to the Council. When projects are under way, the coordinator helps landowners obtain permits or satisfy other administrative procedures associated with Council projects.

Subcommittees address specific issues such as irrigation, mining and wetlands. At Council meetings, the subcommittees present information to keep members current on state and federal laws concerning water and land use issues.

Goals:

The Council seeks to protect and enhance salmon populations and improve salmon habitat. Pursuant to this principal goal, the Council works to keep the public informed, implement projects that will enhance the watershed, involve the community in Council activities and achieve consensus within the Council.

Funding:

Council funding is provided by the Oregon Watershed Health Program and the Governor's Watershed Enhancement Program. Also, a grant from the U.S. Bureau of Reclamation partially pays for the Council's coordinator position. Private landowners contribute funds for specific projects affecting their land.

What Has Been Accomplished:

The Council has completed many tree planting projects. Getting watershed residents with diverse interests together and talking is also a significant accomplishment.

How Participants View Effectiveness, Success:

Council activities have generally improved relations between local citizens and agencies. In a few cases, Council activities have uncovered illegal uses of water and consequently stirred up tensions and controversy in the watershed.

Other Comments:

The Rogue Basin Steering Committee, organized by the Rogue Valley Council of Governments, meets regularly. This group includes coordinators from all the local watershed councils within the Rogue River basin (Middle Rogue, Upper Rogue, Bear Creek, Applegate River, Coos River, Coquille River, Little Butte Creek). While the Steering Committee has no authority over the local watershed councils, it does provide an opportunity for council representatives to exchange information and suggestions on problems and projects.

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UMATILLA RIVER, OREGON

UMATILLA BASIN COUNCIL

Background:

A state legislator, who was from Umatilla County and supported the passage of Oregon's Watershed Health Program, led the effort to start a local watershed council in the Umatilla River basin. A five-member organization group met for a short time to determine how to organize the watershed council. In April 1994, the Umatilla County Commissioners approved the Umatilla Basin Council (Council) and appointed members to the Council. The Council began meeting in May 1994.

Location and Scale of Watershed:

The Umatilla River, a tributary to the Columbia River, is located in northeastern Oregon entirely within Umatilla County. The watershed encompasses approximately 1,600 square miles and supports both dryland and irrigated agriculture.

Participants:

The Council consists of fifteen members appointed by the Umatilla County Commissioners. Originally, the members were appointed to represent different interests within the watershed, but not specific organizations. The Council included individuals representing irrigated agriculture, dryland agriculture, recreation, timber, range, fishery, wildlife habitat, ecology, industry/municipality and tribal interests. Due to complaints that certain members were not truly representative of particular interests, the individual Council members are no longer assigned to represent a particular interest. Instead, members are asked to keep all interests in mind when making decisions on policies and watershed projects.

Problems Involved:

The Council is primarily concerned about water quality in the Umatilla River watershed. Specifically, the City of Pendleton needs high quality water for its municipal water supply and concerns exist that nitrates applied to agricultural lands are contaminating the water. Additionally, tribes in the area are working to reintroduce fish in the river.

Activities:

Each of the Council's monthly meetings includes an educational presentation from a local agency or organization regarding a specific issue in the watershed. Also, the Council is currently developing a comprehensive watershed study.

The Council is participating in two demonstration projects, one of which is being carried out with the Oregon Department of Fish and Wildlife. Additionally, the Council is collecting data on the watershed and building a comprehensive list of ongoing projects in the watershed.

Processes:

The Council chairperson, who is appointed by the County Commissioners, leads the Council meetings. All policy decisions require total consensus of the Council members and all administrative decisions require a majority vote using Robert's Rules of Parliamentary Procedure.

A full-time coordinator manages the day-to-day affairs of the Council. All Council meetings are open to the public and both Council members and nonmembers may serve on Council committees. The Council committees include the Projects Committee, Funding Committee and the Data Collection Committee. Many agency representatives and technical experts serve on the Data Collection Committee.

Goals:

The Council is currently setting formal goals for the effort. The initial goals were to obtain knowledge of issues in the watershed, develop a comprehensive watershed study and secure funding for the Council.

Funding:

The Council received a one-year grant from the U.S. Environmental Protection Agency's pollution abatement program for groundwater. Umatilla County contributes resources and personnel benefits for the Council coordinator. In addition, the U.S. Farm Service Agency and the Umatilla County Soil and Water Conservation District have contributed resources.

What Has Been Accomplished:

Many local residents attend the Council meetings and local interest in watershed issues appears to be high. Funding was secured for the Council's first year and a comprehensive watershed study is under way.

How Participants View Effectiveness, Success:

During the first year, the Council examined broad, general topics. After the watershed study is complete, the Council hopes to be able to identify what specific watershed problems and issues should be addressed.

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UPPER ROGUE RIVER, OREGON

UPPER ROGUE WATERSHED COUNCIL

Background:

The Upper Rogue Watershed Council (Council) began in 1994 after the Oregon Legislature passed the Oregon Watershed Health Program, which provides for the formation and funding of local watershed councils. Community members asked one individual, who became the coordinator, to organize a watershed council for the Upper Rogue River. After community support was obtained, the Jackson County Commissioners issued a proclamation in support of the Council. Subsequently, the Strategic Water Management Group recognized the Council under the Watershed Health Program.

Location and Scale of Watershed:

The Council addresses the entire 2,100 square mile watershed of the Upper Rogue River. The following landmarks set the boundaries of the watershed: the southern edge of Crater Lake marks the northeast boundary; Mt. McLaughlin marks the southeast boundary; River Mile 133 along the Upper Rogue River marks the west boundary and the northwest corner of the watershed includes the western fork of Elk Creek.

Participants:

The thirteen-member Council includes the following participants: U.S. Forest Service, Medford Water Commission, a political activist, U.S. Army Corp of Engineers (Corps), a special forest products manufacturer, environmental interests, timber interests, education interests, agricultural interests, a college student and a Watershed Health Team member at large.

While agencies are currently members of the Council, they agreed to relinquish their membership when replaced by local citizens. However, agencies will still provide technical support to the Council. A thirteen-member limit was set for the Council.

Problems Involved:

The Council addresses anadromous fish habitat issues such as low stream flows, high stream temperatures and stream structures that prevent fish passage. Many areas of the watershed remain in near pristine condition and the Council seeks to maintain those healthy areas of the watershed. The influx of new residents in the area and the many tourists that visit each year strain the delicate areas within the watershed. Water rights issues have also come into the picture.

Activities:

The Council sponsors many educational programs and activities within the watershed. Activities coordinated with local schools include projects to clean up parks and maintain trails. Additionally, the Council writes a regular article in the local paper in order to educate the public on watershed concepts, issues and history. Beginning in June 1995, the Council will sponsor an annual Water Festival to educate community members and tourists. The Water Festival includes many entertainment activities as well educational activities and exhibits.

The Council has also participated in setting up the Rogue Aquatic Nature Center (Aquatic Center) located at the Lost Creek Lake Complex in Jackson County. The Aquatic Center, which includes a large fish hatchery, is designed to be a hands-on ecological exhibit for teaching visitors about watershed issues. For example, a Stream Walk Exhibit will display a degraded stream and a healthy stream system. Additionally, certain stream restoration projects will be demonstrated.

Riparian fencing projects are under way on lands owned by the U.S. Bureau of Land Management (BLM) and Corps. Additionally, the Big Butte Creek Technical Committee is designing and building fish ramps and fish screens for irrigation diversions.

Processes:

The Council meets monthly and initially drafted bylaws and set ground rules for meetings. The Council attempts to make decisions using consensus but will abide by a super majority vote of eighty percent.

Three technical committees within the Council address the following issues: public education on watershed issues, revision of the Watershed Action and Assessment Plan and Big Butte Creek. Big Butte Creek was targeted for special attention because several Council participants lived near the creek and took an interest in issues particularly affecting the creek, including passage of the spring chinook salmon.

The chairperson of the Council facilitates meetings and follows a list of objectives set for each meeting. In addition, the Oregon Watershed Health Program funds a part-time coordinator for the Council.

Goals:

Council goals include: providing a framework to aid ongoing watershed-based management, protecting existing natural resources within the watershed, enhancing habitat for all species including humans, organizing watershed educational activities, involving the community in watershed activities, developing partnerships within the watershed and locating sources of funding.

Funding:

The Council receives state lottery money under the Oregon Watershed Health Program. Also, the Corps provided about \$35,000 for riparian fencing projects.

What Has Been Accomplished:

The Council has successfully mediated disputes between water users and the Oregon Water Resources Department. Additionally, the Council initiated riparian fencing projects on BLM and Corps land and successfully addressed a fish passage problem on Big Butte Creek. Wire mesh screens were installed to limit beaver damage to trees and tree plantings along riparian areas.

How Participants View Effectiveness, Success:

Hoping to increase the effectiveness of the Council by including all perspectives on the watershed, the coordinator solicited members who had very polar viewpoints on watershed issues.

In mediating controversies, just getting all the involved parties together and talking has accomplished a great deal. Many of the problems were caused, or at least aggravated, by poor communication.

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WALLA WALLA RIVER, OREGON

WALLA WALLA BASIN COUNCIL

Background:

The Walla Walla River originates in Oregon, crosses into Washington and empties into the Columbia River. Within Oregon, the river is overappropriated, with claims nearly triple average summer flows of 100 cubic feet per second. There is no storage facility in the upper basin and the fractured geology and other problems make it unlikely a dam will be constructed. As a result, the river is dried up during irrigation season.

Traditionally, irrigated agriculture has provided the economic foundation for the basin. In the early 1990s, a group called the Friends of the Walla Walla (Friends), began to meet in response to concerns within the watershed about water management. In 1994, the Umatilla County Soil and Water Conservation District and Friends cosponsored a public meeting; they also participated in an appointed task force to establish criteria for membership in a watershed council. Following the task force's findings, County Commissioners from Umatilla County appointed a twelve-member Walla Walla Watershed Council under the Governor's Watershed Program to work on a plan to protect and enhance the Walla Walla River watershed. Subsequent water shortages and a proposed wild and scenic river designation added to the Council's challenge.

Location and Scale of Watershed:

The watershed encompasses 1,758 square miles and covers four counties, four soil and water conservation districts and one national forest in two states. Headwaters for three major tributaries to the Walla Walla River are in north-central Oregon but most of the watershed (over seventy percent) is within the state of Washington.

Participants:

Council members appointed by the county commissioners include local representatives of both irrigated and dryland farming, industry, municipal, fisheries, range, recreation and timber interests. Commissioners also appointed a chairman and a vice-chairman from among council members.

Some of the entities identified by the Council as available resources include the U.S. Forest Service, Army Corps of Engineers, Umatilla Indian Reservation, Walla Walla Irrigation District, Gardena Farms Irrigation District, National Marine Fisheries Service, Environmental Protection Agency, Natural Resources Conservation Service and the soil and water conservation districts.

Problems Involved:

There is a general concern with the health of the river as the river is overappropriated. Demand for some uses is increasing, including agriculture, recreation, range and fisheries. Fisheries and water quality are also significant concerns. Bull trout, found in the South Fork of the Walla Walla, and some populations of steelhead salmon are expected to be listed under the Endangered Species Act. A jurisdictional problem is the interstate nature of the watershed. Council members recognize the importance of residents within the basin from Oregon and Washington working cooperatively to effectively address watershed issues. For example, any benefits from efforts in Oregon to conserve water could be canceled by pumping activities within Washington.

Activities:

The Council has been meeting once a month since June 1994. It has been gathering and evaluating data on existing watershed conditions and projects. In addition, the Council has been working on an assessment of basin needs and conditions as a foundation for identifying long-range goals. Improvement projects have been undertaken or supported by the Council, as well as activities directed toward educating the public on the economic and environmental impacts on the watershed of resource management decisions.

Processes:

The Council chair runs the monthly Council meetings. At the meetings, members review current legislative proposals, Council concerns, projects and activities. Increasingly, local citizens and government representatives bring water-related problems to the Council's attention during the monthly meetings. The Council attempts to assist in referring the problems to the appropriate agency or other contact person. The appropriate contacts may be invited to the monthly meetings to assist in addressing water-related problems.

The formation of committees has been discussed but no committees have yet been formed. As envisioned, committees would be led by Council members but committee membership would be open to the public and committee work would be undertaken by community volunteers. The Council is currently working directly with members of the local community, including the schools, to help the Council with on-the-ground projects, such as monitoring water quality.

Goals:

The Council's goals for the watershed include: improving water supplies for fish, wildlife and agriculture; improving river fish habitat and educating water users and others on the range of effects of resource decisions. More specifically, the Council hopes to educate local citizens on the need for and implications of conserving water.

Funding:

The Council has very little funding. A private foundation, the Adopt-A-Stream Program in Everett, Oregon, has approved Walla Walla's nomination for the program of Couse Creek, a drainage within the basin. This selection will provide personnel, training and supplies to correct a water quality problem related to storm runoff. A small amount of funding was received from the Oregon Department of Fish and Wildlife for fencing projects. Finally, the Natural Resources Conservation Service has provided technical assistance.

What Has Been Accomplished:

As of fall 1995, several on-the-ground activities are planned, including tree planting, riparian area fencing and monitoring. Couse Creek has been approved for the Adopt-A-Stream Program. A proposal was developed in conjunction with local landowners and the Natural Resources Conservation Service, and submitted to the Environmental Protection Agency seeking funding for additional water quality-related projects.

Water quality and quantity problems are regularly brought to the Council's attention for assistance and direction. The Council has developed a list of agency and other contact people to assist with these problems. This has added to the Council's reputation and credibility.

The Council is working with a Water District, consisting of several small water companies, to improve the District's water distribution system, which is in need of repair and updating. The goal of the effort is to conserve water and to provide a reliable water supply for the water users. Long range plans include the possibility of a pressurized irrigation water delivery system. The benefit would be a shortening of the period during which the river is dried up and thus a longer period of migration for the steelhead salmon.

How Participants View Effectiveness, Success:

Water management issues are complex and it takes a long time to effectively address them. Hands-on projects are important to build early successes and thus promote continued effort and interest by Council members.

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DUNGENESS AND QUILCENE RIVERS, WASHINGTON

DUNGENESS-QUILCENE PILOT PLANNING PROJECT

Background:

The 1990 Chelan Agreement was developed as a cooperative response to a historic water resource conflict in Washington State. The Agreement established the Water Resources Forum consisting of eight groups: state, local and tribal governments; agriculture; business; environmentalists; recreation and fisheries. While the Chelan Agreement does not settle water rights disputes, it represents a commitment by the signatories to follow a process of collaborative negotiation rather than litigation.

During the same year, the Washington Legislature passed legislation supporting the cooperative planning effort and providing funding for two pilot areas to develop regional water use plans. The Jamestown S'Klallam Tribe originally nominated the Dungeness watershed as one of the pilot projects, and the project boundary was eventually expanded to encompass the northeastern portion of the Olympic Peninsula.

Location and Scale of Watershed:

The Dungeness-Quilcene Pilot Planning Project (Project) is located in the northeast corner of the Olympic Peninsula in Clallam and Jefferson counties. The Project encompasses two watersheds, the Dungeness and the Quilcene drainage systems, along with certain other areas outside of specific drainages such as the Marrowstone and Indian Islands and the Miller Peninsula.

Participants:

Project participants include Clallam and Jefferson counties; the cities of Sequim and Port Townsend; the Jamestown and Port Gamble S'Klallam Tribes; the Clallam and Jefferson Public Utility Districts; Washington Departments of Ecology, Fisheries, Wildlife, Community, Trade and Economic Development; U.S. Forest Service; National Park Service and the U.S. Geological Survey.

Problems Involved:

Both the Dungeness and Quilcene River basins face water supply problems. Water demands exceed the available amount of renewable water, resulting in harm to fish populations and depletion of groundwater supplies. The balance between water diversions and instream flows is a major issue.

Activities:

The overall goal of the Project was to develop an ongoing water resource management plan using the collaborative structure outlined by the Chelan Agreement. The planning activities for the Project are now complete, and implementation has begun.

While the Project initially combined the two watersheds, it eventually developed a separate planning effort and advisory group for each. Currently, the advisory groups are working on implementing the plans. For example, the Dungeness advisory group is developing a conservation plan for the irrigation systems in the watershed.

Education and public involvement activities include informational meetings, open planning meetings, a series of brochures on water resources and support for local water resource educational programs.

Processes:

Originally, the Project used one Regional Planning Group (Group) consisting of two representatives from each of the eight caucuses: agriculture, business, environmental, fisheries, local government, recreation, state government and tribal governments. Other interests and the general public were encouraged to participate. The Jamestown S'Klallam Tribe served as the coordinating entity, and the Group completed a mission statement, joint goals and a scoping document for the regional water management plan.

Later, the Group divided into two advisory groups, one addressing the Dungeness River watershed and the other addressing the Quilcene River watershed. Neutral facilitators run meetings, and advisory group decisions require the consensus of all group members.

Goals:

The mission of the Project is to "work cooperatively to meet water quality and quantity needs of human and natural systems in a manner that will insure the sustainability of both."

Funding:

The Washington Legislature initially allocated money for the Project from 1991 to 1993. Out of the allocated money, the Department of Ecology received funding for one full-time employee and \$100,000 for coordination of the Project. Subsequently, the Legislature extended the Project funding through 1995.

The government participants agreed to cover the out-of-pocket expenses associated with the Project for the non-governmental participants. In the Analysis of Pilot Process completed by the Project participants, many participants agreed the financial help provided by the governmental participants helped create a level playing field for negotiating activities.

What Has Been Accomplished:

Each advisory group completed a watershed plan for its respective watershed, and the Department of Ecology has started incorporating the plan recommendations into its regulations for the region.

As a result of the cooperative planning process, participants began collaborating and compromising to find solutions. For example, in the Quilcene River watershed, the Port Townsend Paper Mill volunteered to shut down production during low flow periods in order to keep water in the river. In the Dungeness River watershed, many irrigators agreed not to use their full water rights in order to maintain minimum flows in the river.

How Participants View Effectiveness, Success:

Highly skilled facilitation is needed early in the process. Facilitators should possess solid knowledge of effective meeting structure, conflict resolution and water resources issues. Although the consensus process is time consuming, it is quicker, cheaper and easier than litigation.

Participants should receive training in effective communication skills and collaborative problem solving techniques both at the beginning of the planning process and throughout the process.

The distinct difference between the two major watersheds and the two sets of jurisdictions made joint planning difficult. Future planning efforts should be limited to one watershed or an area with significant commonalities.

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Jamestown S'Klallam Tribe, Dungeness-Quilcene Water Resource Management Plan Executive Summary, June 1994.

Jamestown S'Klallam Tribe, Dungeness-Quilcene Water Resource Management Plan, Description and Analysis of the Pilot Process. Ch. 11, 159-61, June 1994.

HOOD CANAL, WASHINGTON

HOOD CANAL COORDINATING COUNCIL

Background:

In 1985, three county governments and the Port Gamble S'Klallam and Skokomish tribes formed the Hood Canal Coordinating Council (Coordinating Council) in order to consolidate their water quality improvement efforts. The Coordinating Council was created in response to a report issued by the Washington Ecological Commission that stated "it is the policy of the state to ensure that all actions and programs affecting Hood Canal are evaluated for their impacts on environmental quality." In 1992, the Coordinating Council was restructured to add sixteen state and federal agencies and four local Watershed Management Committees as ex officio members.

Two other watershed groups are active in the Hood Canal region. Under the 1987 Puget Sound Water Quality Management Plan, the Puget Sound counties prioritized their watershed regions and created Watershed Management Committees to address nonpoint source pollution. In Hood Canal, Watershed Management Committees were established for both the upper and lower Hood Canal watersheds. Each of the committees are formulating and implementing management plans for the local watersheds.

Additionally, the Skokomish Indian Tribe is leading a comprehensive watershed/ecosystem improvement project in the Skokomish River basin, which is located in the southern portion of the Hood Canal watershed. The tribe is working in partnership with federal and state agencies and other interested parties within the basin to develop a strategic action plan for healing the Skokomish River basin.

Location and Scale of Watershed:

The Hood Canal watershed is located in western Washington at the southern end of Puget Sound. The watershed spans the counties of Jefferson, Mason and Kitsap and includes the Skokomish Indian Reservation.

Participants:

The Coordinating Council consists of a Policy Body, a Technical Work Group and an executive and administrative staff.

The regular membership of the Policy Body includes elected officials representing Jefferson, Mason and Kitsap counties and the Skokomish and Port Gamble S'Klallam tribes. The Policy Body also includes ex-officio members from federal and state agencies that exercise authority in Hood Canal. Representatives from the local Watershed Management Committees under the Puget Sound Water Quality Management Plan also participate in the Policy Body.

The Technical Work Group consists of personnel from government agencies with management or regulatory authority in the basin.

Problems Involved:

Hood Canal's shellfish and salmon populations are declining due to pollution problems. The canal is particularly vulnerable to pollution because the hydrogeologic characteristics of the canal cause pollutants to recirculate within the system instead of being flushed out of the system.

The rapid population growth in the area threatens to add more pollution and strain on the watershed's natural resources. Also, the lack of agency coordination has resulted in poor resource management in the watershed.

Activities:

The Coordinating Council operates an education and outreach program, which involves publishing a quarterly newsletter, printing brochures and presenting slide shows and videos.

Other activities include a boater education project, work with local schools and development and distribution of a regional directory on environmental educational resources. The Coordinating Council also sponsors an annual environmental awards program, a wetlands inventory project on three Hood Canal streams, a household hazardous waste collection day and citizen monitoring projects.

The Technical Work Group is developing a summary report of the problems affecting natural resources within the Hood Canal watershed. The group is also creating an alert network to help coordinate response actions when sewage spills occur from sewage treatment plants.

Processes:

A Chair and a Vice-Chair lead the meetings and are elected by the regular members of the Policy Body. Regular members of the Policy Body meet monthly, and the entire Policy Body meets quarterly. Meetings of the Technical Work Group are held at least six times a year or as otherwise needed. All meetings of the Policy Body are open to the public, and regular meetings of the Policy Body include an opportunity for public comment on agenda items.

The tasks undertaken by the Coordinating Council are outlined in an annual Work Plan.

Goals:

The Mission Statement of the Coordinating Council states, "the Hood Canal Coordinating Council recognizes Hood Canal as a national treasure and will advocate and implement locally-appropriate actions to protect and enhance the Canal's special qualities."

Specific natural resource goals include: (1) understanding and formulating a position on the issues affecting natural resources and environmental protection; (2) formulating strategies for protecting and enhancing fish and wildlife habitat; (3) coordinating efforts to control existing nonpoint source pollution and (4) strengthening controls on new development activities.

Other goals include: (1) improving interagency cooperation and coordination and garnering support from agencies with management authority; (2) formulating strategies for improving recreational public access; (3) encouraging more centralized research and baseline data collection, including research on the local economy as well as on resource issues and (4) supporting other agencies or organizations, to the extent possible, in their efforts to find the technical and financial resources to carry out their work related to Hood Canal.

Funding:

All of the members pay an annual fee, and the Department of Ecology is funding the staff support for the Coordinating Council. The Coordinating Council has also benefitted from the work of several student interns.

What Has Been Accomplished:

In 1992, the Coordinating Council reorganized in order to broaden its membership and influence within the watershed. Also, a comprehensive report developed by the Technical Work Group on shellfish and fish populations as well as an economic and business profile of the watershed are nearly complete.

How Participants View Effectiveness, Success:

The former Executive Director of the Coordinating Council believes the Coordinating Council has been more effective since its reorganization in 1992. According to the current Executive Director, the Coordinating Council is moving from a planning phase to an action phase. The completed reports define the problems so the group can now move into action.

The tribes express frustration at the seemingly endless planning process that produces very few results. Nevertheless, the Coordinating Council has established strong networks and relationships among participants.

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Hood Coordinating Council, Olympia, Wash. The Water Connection Newsletter (Hood Canal Coordinating Council, Olympia, Wash.) Oct. 1993 - Apr. 1994.

METHOW RIVER, WASHINGTON

METHOW RIVER WATER PILOT PROJECT PLANNING COMMITTEE

Background:

The 1990 Chelan Agreement was developed as a response to a conflict over water resources in the State of Washington. The Agreement established the Water Resources Forum consisting of eight groups: state, local and tribal governments; agricultural interests; business interests; environmental interests; recreational interests and fishery interests. While the Chelan Agreement does not settle water rights disputes, it represents a commitment by the signatories to follow a process of collaborative negotiation rather than litigation.

During the same year, the Washington Legislature passed legislation supporting the cooperative planning effort and providing funding for two pilot areas to develop regional water use plans. Based on the Washington Water Resources Forum's recommendation, the Washington Department of Ecology designated the Methow Valley as the pilot project for eastern Washington. Thus, the Methow River Water Pilot Project Planning Committee (Planning Committee) was formed.

Under a separate program, the Department of Ecology organized a Groundwater Advisory Committee consisting of water users in the Methow River basin and funded by the state's Centennial Clean Water Fund. The Planning Committee and Groundwater Advisory Committee have jointly organized the Methow Valley Water Resources Forum (Forum).

Location and Scale of Watershed:

The Methow River watershed encompasses 1,794 square miles and is located in north central Washington east of the Cascade Mountains. The Methow River has several major tributaries including the Chewuch River, the Twisp River and Early Winters Creek, and it joins the Columbia River north of Lake Chelan.

Participants:

The Planning Committee consists of eight caucuses from business, agricultural, environmental, fisheries and recreation interests, as well as local, state and tribal governments. Other interests are eligible to join as caucuses, and the general public is encouraged to participate. The Groundwater Advisory Committee consists of water users in the Methow River basin. The Forum, organized by the two committees, has members from both committees.

Problems Involved:

Competition for water use is the primary issue facing the group. The demand for water in the basin exceeds the available supply, although the vast majority of rights and claims in the watershed have never been adjudicated. Additionally, the Yakama Indian Nation has asserted rights to instream flows to protect anadromous fish. Consequently, conflicts have emerged at many levels, particularly between agricultural uses and instream uses.

Water quality, however, is not a problem. The water quality within the Methow River watershed is exceptionally good from the mouth of the river to the confluence with the Chewuch river.

Activities:

The Planning Committee completed a Regional Water Resources Plan (Plan) in 1993 and began meeting with the Department of Ecology on implementing the Plan. The Groundwater Advisory Committee also drafted a plan and a set of recommendations for water resource management in the watershed. The Department of Ecology then consolidated the Planning Committee and the Groundwater Advisory Committee so the groups could agree on a combined plan and one set of recommendations for the watershed.

After drafting one set of recommendations, the Planning Committee and the Groundwater Advisory Committee organized the Methow Valley Water Resources Forum, consisting of members of both groups. The Forum is overseeing implementation of the watershed plan and the joint recommendations. The Department of Ecology has started incorporating the watershed plan and recommendations into its basin plan and regulations.

Additionally, the Planning Committee has sponsored several public forums on water conservation and water-efficient gardening techniques.

Processes:

The Planning Committee hired a facilitator to run meetings and arranged for individuals and private firms to do most of the research and writing for the Plan. The Planning Committee attempted to reach consensus when possible. In cases where consensus was not possible, decisions were made by a consensus of the government representatives and a majority of the interest group representatives.

When possible, the Planning Committee implemented plan recommendations as the Plan was developed. Some of the recommendations from the Planning Committee require new or modified administrative rules.

Goals:

The Planning Committee had two goals:

- "To create a plan for the Methow River Basin which will effectively resolve the regulatory and legal morass which complicates water use decisions in the Basin and which causes uncertainty and confusion to all who seek to use or preserve the waters of the Basin."
- "To provide [the Department of] Ecology with a document which identifies Basin-wide water management concerns, provides recommended management approaches which address instream and out of stream uses, and to suggest strategies which may aid in the implementation of the plan."

Funding:

The Planning Committee received \$576,000 from the Washington Legislature for studies, facilitation, coordination, report preparation and participation costs of local and tribal governments. The Groundwater Advisory Committee also received funding from the Centennial Clean Water Fund.

What Has Been Accomplished:

A watershed plan and corresponding set of recommendations were completed by both the Planning Committee and the Groundwater Advisory Committee. Subsequently, the two committees joined efforts to combine and reconcile their plans and recommendations. Implementation of the recommendations is beginning.

How Participants View Effectiveness, Success:

The membership of the Planning Committee forced working relationships that would not have happened under another organization. Identifying projects for early implementation creates a sense of group success.

The state received a good return on the money it spent on the Methow planning project. It is much cheaper than doing business the old way. Nevertheless, a consensus process is time-consuming.

Contact and Sources:

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Puget Sound Water Quality Authority, Briefing Paper: Water Quality Governance Chelan Agreement, Aug. 1993.

Methow Valley Water Pilot Planning Project Planning Committee, Draft Methow River Basin Plan Executive Summary, Jan. 1994.

Methow Valley Water Pilot Planning Project Planning Committee, Draft Methow River Basin Plan Pilot Planning Process Evaluation, Jan. 1994.

NISQUALLY RIVER, WASHINGTON

NISQUALLY RIVER COUNCIL

Background:

In 1985, the Washington Legislature directed the Washington Department of Ecology (Ecology) to develop the Nisqually River Management Plan (Plan) for the Nisqually River basin. The Nisqually River basin is unique and highly visible to the public because the river originates in Mount Rainier National Park and ends up in a National Wildlife Refuge at Puget Sound.

In June of 1987, the Washington Legislature adopted the Plan, which promotes stewardship of the basin's economic, cultural and natural resources. The Plan called for the creation of the Nisqually River Council (Council) as an interagency body committed to the protection and enhancement of the Nisqually River basin through education, advocacy and coordination.

Location and Scale of Watershed:

The Nisqually River flows seventy-eight miles from the slopes of Mount Rainier to the estuaries and mud flats of the Nisqually National Wildlife Refuge. The river basin includes parts of Thurston, Pierce and Lewis Counties as well as the Fort Lewis Military Reservation and the Nisqually Indian Reservation. The Plan addresses the entire Nisqually River basin.

Participants:

Council representation includes eleven state and federal agencies, seven tribal and local governments and one public utility. The Plan also called for creation of a Nisqually River Citizens Advisory Committee (Advisory Committee), which consists of twenty-one members from throughout the basin. Three of the Advisory Committee members sit as full members of the Council. Two independent nonprofit groups, the Nisqually River Basin Land Trust and the Nisqually River Interpretive Center Foundation, were organized by the Council to implement aspects of the Plan best addressed by nongovernmental entities.

Problems Involved:

The Council addresses water quality, wildlife, land use, education and growth issues. Many of the natural resources in the Nisqually River basin are in excellent condition, and the Council is working to maintain the quality of the watershed. The river basin provides habitat to many threatened and endangered species, and some water quality and habitat problems exist as the result of agricultural and timber harvesting activities. In addition, the population is growing rapidly in the region, so land use issues have become important.

The Plan also addresses historical, cultural and economic issues as well as natural resource issues.

Activities:

The Council works to improve public access to the river, conducts historic district planning, monitors water quality, implements stream restoration projects, organizes an educational program for the schools and sponsors an annual Festival of Waters.

Council members also work to implement best management practices on farmlands in the watershed, initiate agreements regarding wastewater treatment and put into effect zoning laws to preserve agricultural lands.

The Council distributes a quarterly newsletter containing information about the watershed and Council activities. A Nisqually Basin Watch Program, similar to the neighborhood watch concept, has been organized to prevent illegal burning, dumping and poaching.

Processes:

The Council and Advisory Committee continue to meet monthly and implement an annual work plan developed during a joint planning retreat held each spring. Council members use Robert's Rules of Parliamentary Procedure at meetings. Public participation is strongly encouraged at all meetings and activities.

The Council uses subcommittees to address specific issues, such as education and public access to the river. Council members, citizens and technical experts serve on the subcommittees. The Department of Ecology provides a staff coordinator for the Council.

The Council formed the Nisqually River Basin Land Trust, a nonprofit organization, to implement certain elements of the Plan. Additionally, the Council established the Nisqually River Interpretive Center Foundation. The Plan provided for the creation of other entities under the supervision of the Council in order to implement various elements of the Plan.

Goals:

The Plan sets forth specific goals concerning mineral resources, water resources, flood damage reduction, fish and wildlife, hydropower, economic activities, land use planning, recreation, educational programs, and land acquisition and protection.

The Plan promotes effective stewardship of the basin's economic, cultural and natural resources through coordination, education and advocacy, without creating an additional tier of government regulation.

Funding:

The Department of Ecology funded the Council for the first two years. Since then, the Washington Legislature has appropriated funding for the Council either directly or through the Department. Staff support is funded by the Legislature through the Department of Ecology's Shorelands and Water Resources Program.

What Has Been Accomplished:

Recently, the Council facilitated the development of a three-county agreement regarding sludge and bio-solids management. The Council purchased water quality equipment to be used by the Nisqually Tribe and funded a variety of riparian restoration efforts.

The Council also completed the Nisqually Education and Interpretation Study, facilitated siting and acquisition actions for Nisqually State Park and funded the Eatonville and Yelm Historic District Master Plans. For its efforts, the Council received the 1992 Environmental Excellence Award from the Washington State Ecological Commission.

How Participants View Effectiveness, Success:

Local governments are the principal powers and the most important players on the Council. Because local governments are active and committed to the process, the effort remains productive and stable.

Now that the Council is approximately eight years old and facing budget cuts from the state, the Council continually faces the challenge of maintaining momentum and productivity. In determining where to save money, the Council decided it was important not to reduce the number of meetings. In order to keep the effort progressing, it is important to maintain a regular level of involvement among members. The atmosphere of the meetings often affects the level of public involvement. While a certain amount of structure and formality is required for Council meetings, meetings should not be too dry or controlled.

The Council also strives to get involved with the emerging issues in the basin. Keeping involved in the "hot issues" helps the Council maintain the participation and interest level.

Contact and Sources:

Peter Moulton
Nisqually River Council
P.O. Box 47775
Olympia, WA 98504
(360) 407-6783

Nisqually River Task Force, Nisqually River Management Plan (Wash. Dept. of Ecology), June 1987.

Nisqually River Task Force, Nisqually River Management Plan. Final Environmental Impact Statement (Wash. Dept. of Ecology), June 1987.

NOOKSACK RIVER, WASHINGTON

NOOKSACK RIVER WATERSHED INITIATIVE

Background:

The Washington Department of Ecology undertook the Nooksack River Watershed Initiative after a departmental survey indicated more than forty Ecology employees had worked in the Nooksack Basin in one year. In 1993, the Department set up a field office with eight staff members in the City of Bellingham to establish and coordinate a watershed management effort in the Nooksack River Basin. Soon afterward, the Department organized a Task Force consisting of twenty-one individuals representing different interests in the watershed.

Location and Scale of Watershed:

The Nooksack River Basin is located primarily in Whatcom County in northern Washington adjacent to the Canadian border. The watershed also covers parts of Skagit County and British Columbia as well as the Lummi Indian Reservation and Nooksack Tribe lands.

Participants:

Participants in the Task Force represent agriculture, business, timber, mining, local and national environmental groups, fisheries, recreation, water suppliers, local government, state government, tribal government and the federal government. The Lummi Indian Tribe is not represented on the Task Force.

Problems Involved:

The Task Force intends to address water supply, water quality, instream flow, and habitat issues in the watershed. Water quality problems include sedimentation and nonpoint source pollution from agriculture, timber and other activities.

Despite the apparent abundance of water in the watershed, some streams in the Nooksack River watershed have been closed to additional water diversions. Specific water supply problems include disputes over tribal water rights and an increased demand for water due to continuing growth in the area.

The coho salmon populations have severely declined in recent years due to sedimentation, high water temperatures and lack of riparian cover on the stream banks.

Activities:

The Task Force meets approximately every two months. Meetings include presentations on watershed issues from specialists.

Task Force members are focusing on gathering information on the watershed and making a list of priority areas and problems within the watershed. Additionally, the Task Force organized a riparian planting project in cooperation with the Nooksack Salmon Enhancement Group.

Processes:

A professional facilitation team runs Task Force meetings, and the Department of Ecology sets meeting agendas and provides staff support. Task Force decisions require consensus of the members. All Task Force meetings are open to the public and include a period for public comments.

The Task Force uses subcommittees to organize public outreach and educational activities, develop a mission statement and set boundaries for the Project.

Goals:

The Task Force seeks to:

- identify issues influencing the health of the Nooksack ecosystem;
- develop a common data base including an inventory of available information and identification and filling of data gaps;
- evaluate and set priorities among the factors influencing the health of the ecosystem and seek interim and long-term solutions;
- promote a responsible attitude toward resolving the identified issues by educating the Task Force members, the public and regulatory and legislative personnel;
- identify and develop strategies to repair and enhance the resources in the watershed and
- make necessary and appropriate policy recommendations.

Funding:

The Department of Ecology provides funds for the facilitation team, a field office and staff support. Other funding sources include a grant under section 319 of the Clean Water Act, discretionary funds from the U.S. Environmental Protection Agency, and U.S. Bureau of Reclamation funds to build a Geographic Information System data base. In addition, the Task Force receives funding from the state's Natural Resource Damage Account (from accrued oil spill penalties) and the state's Centennial Clean Water Fund (from cigarette taxes).

What Has Been Accomplished:

The Department of Ecology has organized a Task Force that represents diverse interests within the watershed. The Task Force has secured funding and begun organizing projects and activities.

How Participants View Effectiveness, Success:

When the Department of Ecology first set up its field office in Whatcom County, residents were suspicious and distrustful. However, most of the Task Force members are beginning to trust the Ecology employees who work at the Nooksack field office.

Other Comments:

Private property rights issues remain sensitive among Whatcom County residents. The Task Force has a difficult time discussing land use issues because people are worried that governmental entities will interfere with the use of private property.

Contact and Source:

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Washington Department of Ecology, Nooksack River Watershed Initiative, Spring 1995.

WILLAPA BAY, WASHINGTON

WILLAPA BAY WATER RESOURCES COORDINATING COUNCIL

Background:

In 1988, citizens approached the Board of County Commissioners in Pacific County, Washington with concerns about the actual and potential degradation of Willapa Bay. The County Commissioners appointed a planning committee and charged them with the responsibility of setting guidelines for the organization of a Willapa Water Quality Committee. The planning committee concluded that a permanent committee was needed to implement long-term projects, coordinate agency work in the Bay and serve as an on-going public forum. In 1990, the Board created the Willapa Bay Water Resources Coordinating Council (WRCC) to pursue these goals.

The Willapa Alliance, another local group working in the watershed, is a private organization with nonprofit status. Formed in response to the perceived encroachment of federal agencies and environmental interests, the Willapa Alliance fosters research and education in the watershed and works closely with the WRCC in its efforts.

Location and Scale of Watershed:

Willapa Bay is located primarily within Pacific County on the southwest coast of Washington just north of the mouth of the Columbia River. The watershed encompasses approximately 680,000 acres and includes 1,470 miles of rivers and small streams.

The economy of the rural region is based primarily upon the use and enjoyment of natural resources and includes oyster culture, forestry, cranberry farming, fishing and tourism.

Participants:

The purpose of the WRCC was to bring together all of Willapa Bay's user groups. The WRCC consists of seventeen appointed representatives from business and industry within the watershed including oystering, fishing, municipal, tribal and real estate interests.

Problems Involved:

Since water quality in the watershed remains good, residents are interested in preventing degradation. Risks to the bay stem from many sources including inadequate sewage treatment and unsafe pesticide application. Eighteen commercial dairies in the watershed have inadequate animal waste management practices and little incentive to develop better methods.

Cranberry farming in the watershed is threatened by incompatible adjacent land uses. Additionally, the appearance of a foreign grass species and a foreign burrowing shrimp species threatens to alter the tideland habitat and degrade the oyster beds.

Activities:

In 1990, the WRCC prepared a comprehensive Water Resources Management Plan. The plan outlines the three current focuses of the WRCC: improving interagency relationships, collecting scientific data and sponsoring educational programs. The education subcommittee is producing a public education video and developing a common educational research facility for user groups.

Processes:

The WRCC holds monthly public meetings to carry out the intent and objectives of the Water Resources Management Plan. Subcommittees address specific projects, and at least one council member serves on each subcommittee with the remaining members consisting of citizens and agency representatives.

The WRCC serves as a permanent advisory board to the Pacific Board of County Commissioners to review plans, ordinances and grants that affect the water quality of the bay.

Goals:

The WRCC plans to maintain a public forum to initiate and review governmental policy concerning the water resources of the watershed. It does not intend to become another level of government, but instead an influential group through which the public can directly influence policy development. The WRCC seeks to create a process where common goals and mutual understanding are shared among all user groups.

Funding:

The Washington Department of Ecology and the National Oceanic and Atmospheric Administration funded the development of the WRCC's 1990 Water Resources Management Plan.

What Has Been Accomplished:

The WRCC has completed a comprehensive Water Resources Management Plan and resolved some sewage problems that were affecting the oyster beds. The oyster beds were subsequently recertified as clean.

How Participants View Effectiveness, Success:

The WRCC is seen primarily as a forum to assure that everyone's point of view is heard.

Other Comments:

Members of the WRCC are described as "users." According to the WRCC Chair, this designation is expressly intended to exclude groups espousing environmental concerns.

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YAKIMA RIVER, WASHINGTON

YAKIMA RIVER WATERSHED COUNCIL

Background:

In November 1993, a group of individuals involved in agricultural businesses started organizing the Yakima River Watershed Council (Council). This initial group, acting as an interim steering committee, developed the general mission of the Council and began developing the structure and membership.

Water allocation problems aggravated by a drought spurred the formation of the Council. With approximately 400,000 acres of irrigated cropland in the watershed, agriculture provides the economic foundation of the area. Thus, the water allocation problems in the basin threaten the livelihoods of the residents and the economic productivity of the watershed.

However, the interim steering committee wanted to address the problems by looking at all the different interests in the watershed, not just agricultural uses. As a result, the Council includes a diverse set of interests.

Location and Scale of Watershed:

The Yakima River basin, which encompasses approximately 6,000 square miles, is located in south central Washington on the east slope of the Cascade Mountains. The Yakima River originates north of Mount Rainier and flows over 200 miles until it empties into the Columbia River near the confluence of the Snake and Columbia Rivers.

Participants:

The Council has a fifty-member Board of Directors representing different interests within the watershed. Board members include representatives from irrigation groups, food processing interests, environmental organizations, the Yakama Indian Nation, financial institutions, municipal and county governments, educational groups, timber interests and electric utilities.

The Council's general membership is open to any interested individual or organization. Board members, general members and state and federal agency employees all serve on the Working Committees within the Council.

Problems Involved:

Water users in the basin face water supply shortages; and the recent drought has aggravated the water supply problem and led to the depletion of ground water aquifers. Water storage facilities in the Yakima basin are inadequate to supply existing water needs.

The Yakima River once supported one of the world's largest salmon runs. However, human activities along the Yakima and Columbia Rivers, such as logging, livestock grazing, hydroelectric development and farming, have altered the watershed over the last 150 years. Specific habitat problems include low river flows, high water temperatures and poor water quality. As a result, the salmon populations have severely declined.

Activities:

The Council's Board of Directors started meeting on a monthly basis in August 1994. The board meetings focus on public education and providing information on watershed issues. The Working Committees began meeting in 1995 and started gathering information on their specific subject areas.

Processes:

The Board of Directors governs the Council and uses a consensus process to make decisions. An Executive Committee manages the day-to-day activities of the Council, with the help of five staff members, including a Chief Executive Officer, a Communications and Research Officer and a Membership Officer.

Additionally, Working Committees address specific issues within the watershed: water quantity; water quality; water conservation, transfers and marketing; storage; low level re-regulating reservoirs; ground water recharge; legislative and legal issues; and water supply system management. Members of the Working Committees include members of the board, general members and technical experts.

The Council approaches watershed issues using a four-step process: organization, education, solutions identification and solutions implementation.

Goals:

The Council's mission is "building consensus to provide more water for the basin." The Council's membership pledge states that "no one's special interest shall impede the goal of trying to provide more water for everyone's specific interests."

Funding:

The Council receives funding through membership contributions. So far, interested individuals and businesses have contributed over \$300,000 to the Council.

What Has Been Accomplished:

The primary accomplishment of the Council to date is getting people together who have different interests in the watershed. One staff member indicates a positive outcome has been the discovery by participants that in many cases they have some shared values.

How Participants View Effectiveness, Success:

The Council faces the challenge of keeping participants committed to making decisions through consensus. Achieving consensus takes patience and perseverance. Interest may wane when the group is not facing either a drought or a flood.

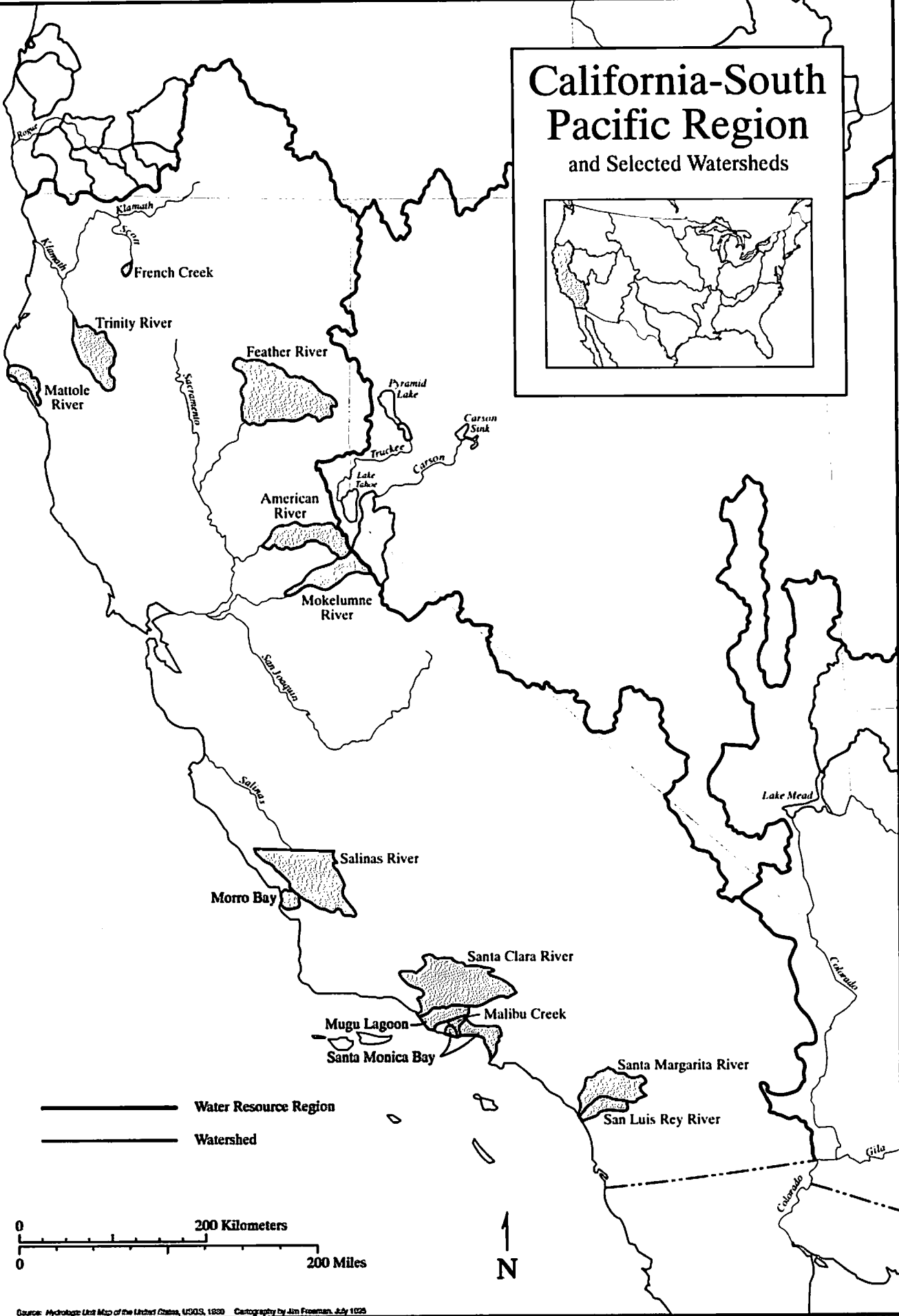
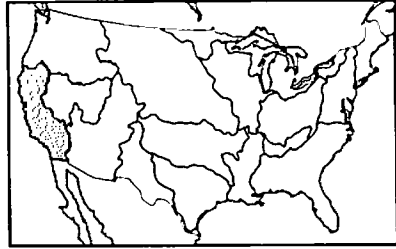
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CALIFORNIA\ SOUTH PACIFIC COAST

American River, CA
Feather River, CA
French Creek, CA
Malibu Creek, CA
Mattole River, CA
Mokelumne River, CA
Morro Bay, CA
Mugu Lagoon, CA
Salinas River, CA
San Luis Rey River, CA
Santa Clara River, CA
Santa Margarita River, CA
Santa Monica Bay, CA
Trinity River, CA

California-South Pacific Region and Selected Watersheds



Source: Hydrologic Unit Map of the United States, USGS, 1980 Cartography by Jim Freeman, July 1998

AMERICAN RIVER, CALIFORNIA

SOUTH FORK AMERICAN RIVER PARTNERSHIP

Background:

The Resources Agency of California funded and initiated the South Fork American River Partnership (Partnership) as one of two watershed pilot programs. Under the watershed pilot programs, local Resource Conservation Districts (RCDs) were directed to organize the watershed groups, oversee the development of a comprehensive watershed plan and implement several projects under the plan within a year.

The coordinator of the Partnership organized the American River watershed effort at two levels with the intent of combining several groups into one complete watershed group. The Partnership serves as an umbrella group to discuss and work on problems faced by the entire watershed, while several smaller subwatershed committees address problems and carry out projects in local areas. The Partnership and the subwatershed committees were started simultaneously; to date they function independently except for some common members. However, the coordinator and group members still plan to integrate the Partnership and subwatershed committees into one watershed group.

Location and Scale of Watershed:

The watershed of the South Fork of the American River encompasses approximately 500,000 acres on the west side of the Sierra Nevada range between Lake Tahoe and Sacramento. Most of the watershed is located within El Dorado County. The Partnership is defining the precise watershed boundaries and the exact geographical area the group will address.

Participants:

Partnership participants include the U.S. Forest Service, U.S. Bureau of Land Management, California Department of Forestry and Fire Protection, California Department of Fish and Game, El Dorado County RCD, Georgetown RCD, county supervisors, Georgia Pacific and Sierra Pacific timber companies, one private and one public power company, two irrigation districts, El Dorado County Water Agency and environmental groups. To keep the group size manageable, the membership is limited to between ten and fifteen participants that have expertise and/or resources to contribute.

Problems Involved:

Mining, logging and grazing activities have created water quality problems in the American River. Recently, the exploding population growth in the Sacramento area has also led to degradation of the watershed.

Activities:

The first projects focused on fire management, specifically the removal of dead wood from the forests. The subwatershed committees have been monitoring water quality and eliminating or reducing herbicide applications in storm diversion channels. A local high school science class has been doing most of the stream monitoring work.

Processes:

The Partnership meets approximately every two months. The meetings are informal, but the Partnership works to keep them brief and productive. A volunteer facilitator worked with the group for awhile to help keep the meetings moving.

Goals:

The Partnership plans to integrate with the subwatershed committees to form a comprehensive watershed group.

For the future, the Partnership intends to implement projects concerning timber management, Forest Service procedures, watershed restoration and assessment of water quality.

Funding:

For the first year, the Partnership received \$100,000 from the Resources Agency of California. Afterwards, the Partnership received a small extension of funding from the Resources Agency and some grant money from other sources. Obtaining money continues to be a challenge for the Partnership.

What Has Been Accomplished:

Agencies, organizations and landowners are now meeting and working together in the watershed. Additionally, the parties have identified some common ground including an agreement to clear out dead timber to improve management of forest fires.

How Participants View Effectiveness, Success:

According to the Partnership coordinator, "Like any other organization, the creation of a watershed management group requires leadership. At least one person who is as skilled at politics as ... is at resource management must provide the impetus and sustenance for others' involvement. Someone has to persistently sell the concept, make the phone calls and mail the letters."

Contact and Source:

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El Dorado County Resource Conservation District
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Mark Hicks, South Fork American River: Water Conservation Initiative, Notes on Watershed Planning Strategy (Feb. 16, 1994) (unpublished memorandum, on file with the California Association of Resource Conservation Districts, Northern Sierra Office).

FEATHER RIVER, CALIFORNIA

FEATHER RIVER COORDINATED RESOURCE MANAGEMENT GROUP

Background:

In 1984, Pacific Gas & Electric Company (PG&E) discovered a problem with excessive sedimentation from logging activities at Rock Creek Dam on the North Fork of the Feather River. Sedimentation from upstream erosion reduced PG&E's reservoir capacities, damaged turbines and adversely affected energy production. PG&E met with the U.S. Forest Service and the U.S. Natural Resources Conservation Service to work on finding solutions. Within a year, Plumas Corporation, a county nonprofit development corporation, became involved with PG&E's watershed coordination efforts, and the Feather River Coordinated Resource Management Group (Feather CRMG) was formed.

The first activity of the Feather CRMG was a pilot project. In 1985, four loose rock drop structures were installed along Red Clover Creek. The project was considered a success in terms of reduced erosion, fish and wildlife habitat improvement and restoration of floodplain areas.

Location and Scale of Watershed:

The Feather River, which drains the northern end of the Sierras and is a tributary of the Sacramento River, is comprised of three forks: North, Middle and South. The North Fork has an east and a west branch. With the exception of the West Branch of the North Fork, all of the Feather River watershed is located in Plumas County. The West Branch enters the river downstream from Plumas County.

The Feather CRMG first focused on the East Branch of the North Fork, an area of approximately 1,200 square miles. In 1993, the effort was expanded to include the Middle Fork of the Feather River for a total of 2,500 square miles.

Participants:

Participants in the Feather CRMG include Plumas County, Plumas Corporation, PG&E, California Department of Transportation, California Regional Water Quality Control Board, U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, California Department of Fish and Game, California Department of Water Resources, California Department of Forestry and Fire Protection, Natural Resources Conservation Service, Indian-American Valley Resource Conservation District (RCD), U.S. Department of Agriculture's Farm Service Agency, Feather River College, and the Plumas Unified School District. The University of California Cooperative Extension Service has recently joined the Feather CRMG. Also, private landowners participate by entering into project agreements with the Feather CRMG.

Problems Involved:

The Feather CRMG was formed in response to sedimentation problems in the Feather River. Severe erosion problems, caused by more than a century of logging, mining, grazing, flood control activities, and associated transportation systems have led to a high level of sediment loading in the river. Additionally, the CRMG addresses other water quality issues, fish and wildlife habitat, conversion of wetlands, groundwater levels and the effects of ecosystem degradation on the long-term economic health of the area.

Activities:

The CRMG meets quarterly, and the management and technical committees meet more frequently. The smaller management committees identify projects and develop restoration plans before presenting them to the entire CRMG for approval.

Each year a list of projects is developed, which includes reconfiguring the river channel, placing slope revetment, planting vegetation and changing land management practices. The Feather CRMG hopes that with the reestablishment of natural vegetation and stream channel structure, the artificial physical changes made by the CRMG projects will either disintegrate or become superfluous in twenty years.

The local community college, Feather River College, has developed a two-year degree program in Watershed Management. College students participate in the field work and monitoring of the Feather CRMG restoration projects. Over thirty-five projects have been completed including water quality studies, fish ladder construction, creek and meadow restoration, and waterfowl habitat improvement projects.

Processes:

A steering committee is the primary decision making body for the CRMG. The seventeen-member committee consists of representatives from thirteen agencies plus representatives of interested organizations and community groups.

All members of the steering committee must approve each restoration project. After approval, the steering committee seeks funding and obtains the necessary permits. State and federal agencies have conducted many of the watershed studies. For example, the EPA studied the effects of logging roads on the watershed and National Resources Conservation Service studied erosion problems.

The restoration projects are then implemented, sometimes with donated labor and sometimes by workers hired by Plumas Corporation. Local students help monitor water quality and the installed projects. A Memorandum of Understanding (MOU) among the participants established guidelines for the CRMG. The MOU identifies the objectives of the CRMG and outlines the responsibilities of each of the participants.

Goals:

The Feather CRMG plans to restore the Feather River and its tributaries to their natural conditions and improve management practices of surrounding uplands. Specifically, the CRMG works towards accomplishing the following objectives: reduce sedimentation in the reservoirs, improve economic conditions in the county, decrease stream bank erosion and restore trout fisheries.

Funding:

PG&E contributes \$35,000 and the Forest Service contributes \$15,000 annually to the CRMG operating fund. Additionally, PG&E has granted funds for specific projects totaling \$1 million over the last ten years. Landowners and agencies contribute money, materials and labor. Plumas Corporation prepares grant proposals to solicit state and federal funds for projects. More than 3.5 million dollars have been raised from all sources.

What Has Been Accomplished:

The CRMG has made progress in attaining all its stated goals. While restoration projects have been undertaken on in some parts of the watershed and it is too soon to determine the effectiveness of the completed restoration work, the early assessments of the projects show positive results. Additionally, the CRMP projects have provided full and part-time jobs for more than seventy local residents.

How Participants View Effectiveness, Success:

The participants all agree the CRMG has been successful. They are proud of the accomplishments, particularly the fact that historically antagonistic parties are planning and implementing solutions together. Differences between the parties cause the effort to run roughly sometimes, but it does run. The scope of the restoration in terms of number of projects and amount of funding received is beyond what was initially envisioned.

Participants credit the CRMG's success partly to the emphasis on grassroots involvement, with local residents making decisions rather than mandates being imposed by any "big brother" such as government or PG&E. Plumas Corporation's neutral management of the CRMG has also contributed to the group's success because it has gained the trust of landowners and implements projects with a minimum of bureaucracy. Ranchers and loggers, who are likely to be wary of environmental and resource agencies, willingly accept the leadership of the Plumas Corporation. The corporation also has much more freedom in managing money and contracting than a state or federal government agency.

Other Comments:

As a successful watershed effort, a few aspects of the Feather CRMG stand out:

- willingness of institutional players to work outside the traditional boundaries of their roles;
- a simple and effective pilot project that encouraged the participants to remain involved;
- initial emphasis on projects which were most likely to be agreeable to all parties, saving the more contentious projects for later and
- efforts to monitor projects' impacts in order to quantify projects' benefits.

Contact and Source:

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Quincy, CA 95971
(916) 283-3739

Leah Wills and John Schramel, "A Grass Roots Perspective: Feather River Coordinated Resource Management," *in* Overcoming Obstacles 53 (U.C. Davis Water Resources Center Report No. 81).

FRENCH CREEK, CALIFORNIA

FRENCH CREEK WATERSHED ADVISORY GROUP

Background:

The French Creek watershed was selected by the California Board of Forestry and the California Department of Forestry and Fire Protection as a case study of landowner watershed management. The U.S. Forest Service, timber companies and ranchers all own land along French Creek. The case study was initiated to seek alternative methods to resolve tensions among landowners over forest management, which was apparently causing erosion and sedimentation, harming salmon and steelhead habitat.

Location and Scale of Watershed:

French Creek, a tributary of the Scott River which is in turn a tributary of the Kalmath River, drains approximately 20,500 acres within Siskiyou County, California.

Participants:

The initial French Creek Watershed Advisory Group (WAG) participants included the U.S. Forest Service (Kalmath National Forest, Scott River Ranger District), Fruit Growers Supply Company, Sierra Pacific Industries, Roseburg Resources Company, California Department of Forestry and Fire Protection, Siskiyou County Road Department and the French Creek Drainage Property Owners Association.

Later other groups became members: California Department of Fish and Game, State Water Resources Control Board, North Coast Regional Water Quality Control Board, Natural Resources Conservation Service, Siskiyou Resource Conservation District and the Marble Mountain Audubon Society.

Problems Involved:

The tensions in the French Creek watershed revolve around forestry practices, erosion and sedimentation problems, and the degraded salmon and steelhead habitat. Existing studies show much of the area is comprised of decomposed granitic soils, which are fragile and highly erodible, making the area highly susceptible to erosion and sedimentation problems.

Activities:

As one of its first activities, the WAG sponsored a field trip, open to all interested landowners, to examine erosion problems. In Spring 1992, the group started a newsletter.

The WAG drafted and implemented a Road Management Plan, a Fire and Fuel Management Plan and a Monitoring Plan. Additionally, the group worked on a Forest Sustainability Plan, using a Geographic Information System to map scenario modeling.

Most of the Road Management Plan has been implemented. The WAG continues to monitor water quality and work on fire and fuel management. The WAG is not planning any major activities in the near future because funds are not available.

Processes:

When state funding was available, two facilitators were used to run WAG meetings. Currently, the group operates without an independent facilitator. The WAG has met approximately two times per year and anticipates continuing to meet at least once a year. The meetings and discussions are informal, and decisions are made by consensus.

Subcommittees work on each of the plans and their implementation. A facilitator wrote the initial discussion draft of each plan, and the subcommittees gathered data and subsequently revised the plans. The final drafts of the plans were then presented to the full group for adoption.

Goals:

The WAG agreed to continue meeting at least once a year to monitor water quality and discuss road maintenance. While WAG members desire to maintain communication among participants, there is no funding for future projects.

Funding:

Initially, the California Board of Forestry and the California Department of Forestry and Fire Protection provided limited funding for the group. Around \$800,000 was raised by and from local landowners to do road servicing projects. The U.S. Forest Service, U.S. Fish and Wildlife Service and Siskiyou County also contributed funds for road improvement projects.

What Has Been Accomplished:

Three plans were adopted to reduce sedimentation: a Road Management Plan, a Fire and Fuel Management Plan and a Monitoring Plan. Nearly all of the Road Management Plan has been implemented.

Recent monitoring results indicate water quality in French Creek has improved. While it is still too early to anticipate what the monitoring results will be in the next several years, the WAG hopes the road servicing projects have significantly reduced the sedimentation problem.

Additionally, better communication and relations among the participants have resulted from the WAG activities.

How Participants View Effectiveness, Success:

The current chairman of the WAG observed that good leadership requires establishing the framework for the group and motivating the members. Equally important, the leader must know when to back off and let the group and the individuals within the group take action. While watershed initiatives require a certain amount of planning, their success depends on individuals who take the initiative to get something done.

Compensation for volunteer members, such as lunch and travel expenses, would allow more equal participation from all organizations. Resource Conservation Districts are useful organizations to funnel state and federal grants to small, local groups.

Contact and Sources:

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French Creek Watershed Advisory Group
U.S. Forest Service, Scott River District
Highway 3
Fort Jones, CA 96032
(916) 468-5351

Sari Sommarstrom, "Moving Mountains to Keep a Mountain from Moving: The French Creek Watershed Case Study," *in* Overcoming Obstacles 45 (U.C. Davis Water Resources Center Report No. 81).

Dennis Pendleton, "California Experiences in Cooperative Watershed Management," Watershed Resources: Balancing Environmental, Social, Political, and Economic Factors in Large Basins (Oregon State University, Corvallis 1993) 76-82.

MALIBU CREEK, CALIFORNIA

MALIBU CREEK COORDINATED RESOURCE MANAGEMENT PLAN

Background:

In 1989, the Topanga-Las Virgenes Resource Conservation District (Topanga RCD) applied for and received watershed planning assistance from the U.S. Department of Agriculture's Small Watershed Program. Consequently, the Topanga RCD became the lead agency responsible for organizing and directing the Malibu Creek Coordinated Resource Management Planning Process (Malibu CRMP).

To launch the Malibu CRMP, the Topanga RCD invited all interested parties to participate in facilitated sessions to outline goals for the watershed. During the mediation sessions, which spanned over a year, the Malibu CRMP group put together a list of goals concerning water quality, water supply, land use, interagency coordination and funding. The U.S. Natural Resources Conservation Service drafted a restoration plan for the watershed incorporating the goals outlined in the sessions.

Location and Scale of Watershed:

The Malibu Creek watershed encompasses 110 square miles and is located in the counties of Ventura and Los Angeles, near the City of Los Angeles. The upper watershed is owned by the California Department of Parks and Recreation, the National Park Service and the Santa Monica Mountain Conservancy. The coastal areas of the watershed are urban and include the cities of Thousand Oaks, Calabasas and Malibu.

Participants:

The participants in the Malibu CRMP include the California Regional Water Quality Control Board, California Coastal Conservancy, local private interests, Topanga RCD, municipal governments, various activist groups, Santa Monica Bay Restoration Project, Surfriders Foundation, U.S. Department of Agriculture, U.S. Environmental Protection Agency (EPA), and Ventura and Los Angeles Counties. Approximately 160 groups are listed on the mailing list for the Malibu CRMP.

The Santa Monica Bay Restoration Project is a separate initiative with its own members and activities. However, this group participates in the Malibu CRMP and has provided funding to the Malibu CRMP.

Problems Involved:

Accumulations of sediment, nutrients and toxins threaten water quality and wildlife habitat. Pollution sources include urban runoff in the upper watershed and the lagoon area, agricultural runoff and wastewater discharge.

Activities:

The first project involved drafting a comprehensive Natural Resources Management Plan for the Malibu Creek watershed. Other Malibu CRMP projects include Tidewater goby fish reintroduction, revegetation, streambank restoration, livestock nutrient management, trail construction, a baseline ecological survey, education and public outreach programs, and water quality projects relating to stormwater runoff.

Processes:

In organizing the CRMP, the Topanga RCD set up two councils, which together include representatives of every participating party. The Executive Council includes municipalities, water districts, state and federal agencies and other entities which have decision making processes they must follow before committing resources. The president of the Topanga RCD board chairs the Executive Council. All other participants have representatives on the Advisory Council, which is chaired by the vice president of the Topanga RCD Board. The members of the Executive Council also participate in the Advisory Council. All meetings use Robert's Rules of Parliamentary Procedure as the structure for discussion and decision making.

Working under the authority of the Advisory Council, four smaller technical committees address specific areas, such as monitoring and modeling, health, education and public information.

Goals:

The Malibu CRMP plans to implement the management plan developed by the National Resources Conservation Service. The overall goal is to improve water quality and fish and wildlife habitat within the watershed. One technical committee of the Malibu CRMP has assumed a goal of recommending water quality standards for the Malibu Lagoon.

Funding:

The U.S. National Resources Conservation Service provided funds for the Malibu CRMP to develop a Natural Resources Plan. Other funds received by the Malibu CRMP include grants from the California Water Resources Control Board, City of Calabasas, EPA (under the Clean Water Act and the Near Coastal Waters Program), California Coastal Conservancy, California Department of Parks and Recreation, National Park Service, Los Angeles County, Santa Monica Bay Restoration Project, National Audubon Society and the California Department of Conservation.

What Has Been Accomplished:

The U.S. National Resources Conservation Service has completed a Natural Resources Management Plan for the Malibu Creek watershed. The Topanga RCD has succeeded in organizing a productive and motivated group to work on watershed issues. Additionally, the Malibu CRMP has many projects under way, and its organizational structure has served as a model for other groups.

How Participants View Effectiveness, Success:

Although the Malibu CRMP is functioning effectively, some members are concerned about future funding. Possible cuts in federal programs that have aided watershed groups in the past (e.g., EPA programs) will hurt watershed groups like the Malibu CRMP.

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MATTOLE RIVER, CALIFORNIA

MATTOLE RESTORATION COUNCIL

MATTOLE WATERSHED ALLIANCE

Background:

In the late 1970s, residents of the Mattole River watershed noticed that salmon were not able to get to their spawning grounds due to an improperly placed culvert under a road. A group formed to remedy the problem and later became the Mattole Salmon Support Group (Salmon Group). The Salmon Group learned about fishery management and obtained permission from the California Department of Fish and Game to harvest eggs and milt as part of a fishery enhancement program. Through the Salmon Group's activities, several participants discovered that land management activities throughout the watershed also affected the fish, and thus work to preserve the salmon needed to focus on the entire watershed.

Because the Salmon Group wanted to stay small and focused, the Mattole Restoration Council (Council) formed in 1986 to address watershed issues that affected the salmon. While the Council addresses many issues throughout the entire watershed, the King Salmon remains the indicator species. In other words, the Council examines all issues in the watershed in the context of what is harmful or helpful to the King Salmon population.

Location and Scale of Watershed:

The Mattole River watershed encompasses approximately 300 square miles on the northern coast of California. The river is approximately sixty-two miles long, and was once surrounded by redwood and other conifer forests, which have been intensively logged. The Council addresses the entire Mattole River watershed, which is located in a rural area and has a population of a few thousand people.

Participants:

The Council has three classes of membership: individual members; organization or group members; and "Friends of the Mattole" who donate money but are not eligible to vote because they do not live or own property in the watershed. Organization members include the Mattole Valley Community Center, local land trusts, a local workers' cooperative, Petrolia High School, Honeydew Creek Watershed Group and other local organizations.

The Council is currently comprised of people and groups who are interested in preserving the environment. Some participants think the Council should broaden its membership to include other interests such as local ranchers.

Problems Involved:

The Council is primarily concerned with the decline of the salmon population in the Mattole River watershed. Excessive erosion and sedimentation caused by logging and livestock grazing activities as well as earthquakes degrade the salmon habitat. Extensive deforestation of the watershed and the large number of logging roads have contributed to the erosion problem.

Activities:

Council activities fall into three categories: public education, watershed research and restoration. Restoration projects include stream bank erosion control, tree planting and construction of instream rock and log structures.

Processes:

A Board of Directors (Board) meets monthly. Each participating organization elects a representative to serve on the Board. Additionally, the individual members collectively choose a representative for the Board. Board meetings are open to all interested members, and Board decisions require total consensus.

Three part-time staff members work on administrative tasks for the Council. However, the Council relies on volunteer work for many of its tasks, including preparation of proposals to obtain funding.

Goals:

The Council seeks to restore salmon populations, promote healthy land use practices and implement restoration projects such as reforestation. Recently, the Council has also worked to increase and diversify its membership.

Funding:

The Council is funded by grants from the California Department of Fish and Game, private foundations, membership dues and donations. In addition, regionally-based catalog mail order companies including Klutz Press, Childcraft, Hearthsong, and Smith and Hawken have donated money for tree planting projects. In 1995, these donations provided \$32,000 for tree planting and related activities.

What Has Been Accomplished:

Progress in reducing sedimentation and increasing the salmon population has been slow. Reversing the effect of over fifty years of land use practices takes a long time.

How Participants View Effectiveness, Success:

The Mattole Restoration Council is almost ten years old and is finding it difficult to maintain the group's energy. The challenge is to attract new members and ideas to maintain the group's momentum.

Other Comments:

In 1990, a schism developed between community members over a report issued by the California Department of Forestry and Fire Protection regarding sedimentation in the Mattole River. A community meeting was held over the issue. As a result, the Mattole Watershed Alliance (Alliance), consisting of all interested landowners in the region, was formed. The Mattole Restoration Council was a member of the Alliance.

The Alliance had a facilitator who conducted the meetings, and anyone who attended could vote on the issues presented. The Alliance worked first on less controversial issues, namely fishing regulations. However, the Alliance has not met for approximately a year, and it is uncertain whether the Alliance will disband.

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MOKELUMNE RIVER, CALIFORNIA

MOKELUMNE RIVER WATERSHED PROJECT

Background:

The California Department of Forestry and Fire Protection and the California Board of Forestry initiated and funded the Mokelumne River Watershed Project (Project) to encourage cooperative resource planning and problem solving among landowners in the watershed. The Project began after East Bay Municipal Utility District (East Bay M.U.D.) had charged to the Board of Forestry that various parties were polluting their water supply through timber harvesting activities. East Bay M.U.D. operates Pardee and Comanche reservoirs in the Mokelumne River watershed, which supply water to Oakland and nearby East Bay communities. The Department of Forestry and Fire Protection and the Board of Forestry started the Project hoping the parties could productively address a broad array of watershed problems. The Project was later useful in helping to resolve litigation initiated by East Bay M.U.D.

Location and Scale of Watershed:

The Mokelumne River basin is located primarily in Calaveras and Amador counties in the central Sierra Nevada range. The Project focuses on the area above Pardee Reservoir.

Participants:

Participants in the Project include East Bay M.U.D., Georgia Pacific Corporation, Calaveras County, Central Valley Regional Water Quality Control Board, California Water Resources Control Board, U.S. Forest Service, California Department of Forestry and Fire Protection, California Department of Fish and Game, Amador County Department of Water Resources, Calaveras County Water District, range livestock operators, Pacific Gas & Electric Company and the U.S. Bureau of Land Management.

Problems Involved:

The central issue driving the Project is the degradation of the domestic water supply of East Bay municipalities dependent on water from the Mokelumne River. Some participants believe timber harvesting, livestock grazing and other upstream land uses have polluted the water with nutrients and eroded the land causing excessive sedimentation.

Activities:

Since Project participants do not agree on the cause of the water quality problems, most of the Project's activities involve gathering data on water quality through water sampling and monitoring. The Project has carried out extensive monitoring and sampling both above and below timber activities in the Mokelumne River basin. Additionally, the Project has been developing a geographic information systems (GIS) data base.

Processes:

The Project consists of two major committees, the Policy Committee and the Technical Committee. The Policy Committee makes decisions concerning projects and funding and includes representatives from the active participating entities. The Technical Committee submits recommendations to the Policy Committee for projects. A GIS Subcommittee and a Monitoring Subcommittee report to the Technical Committee.

The entire group meets about twice a year, and the individual committees meet as often as necessary. All decisions are made by total consensus of the participants.

An independent facilitator/coordinator initially conducted meetings and assisted with communication and organization among the participants. The California Department of Forestry and Fire Protection funded a quarter-time independent facilitator whose contract ended in April 1995.

Goals:

The Project objectives are to improve and protect water quality in the watershed.

Funding:

The California Department of Forestry and Fire Protection provided the initial funding for the Project, which included money for a part-time facilitator position and water quality monitoring. The Project received funding from the California Water Resources Control Board for gathering GIS data. Georgia Pacific and East Bay M.U.D. have also provided funds for the data base. Getting sufficient funds to complete the GIS data base has been a problem.

What Has Been Accomplished:

Despite a lawsuit filed since the Project was initiated, the Project has helped improve communications among participants. In addition, water monitoring projects are under way, and progress has been made on the GIS data base.

How Participants View Effectiveness, Success:

The Project has faced many challenges, and perhaps the greatest challenge was functioning in the shadow of a lawsuit. Because some of the Project participants were also parties to the lawsuit, it complicated and hindered communication.

Operating without a paid coordinator may be difficult for the Project because a significant amount of individual time and effort must be invested in order to coordinate communications among participants both during and between meetings.

Other Comments:

East Bay M.U.D. hired an expert to assess the water quality situation in the Mokelumne River watershed. The expert concluded the water quality problems were the result of nutrient pollution caused by timber harvesting activities. This assessment had a divisive impact on the Project, and participants became consumed with either proving or disproving the accuracy of the expert's assessment.

The incident illustrated how a single event can disrupt months of coordinating and consensus-building efforts within the Project. All the Project's monitoring activities suddenly changed focus in order to respond to and analyze the expert's assessment.

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Dennis Pendleton, "The Mokelumne River: Cooperative Watershed Management in the Central Sierra," *in* Overcoming Obstacles 49 (U.C. Davis Water Resources Center Report No. 81).

MORRO BAY, CALIFORNIA

MORRO BAY TASK FORCE

Background:

The well-documented sedimentation problem in Morro Bay, a Pacific coastal estuary and lagoon, led agencies and concerned local organizations to form the Morro Bay Task Force (Task Force) in late 1987. Later, the membership grew when other groups such as the Friends of the Estuary joined the Task Force. Many of the agencies participating in the Task Force were instrumental in supporting the passage of Assembly Bill 640, which lists Morro Bay as a State Estuary and requires the drafting of an estuary management plan.

Location and Scale of Watershed:

Morro Bay is located approximately 150 miles north of Los Angeles in San Luis Obispo County. Two creeks, Los Osos and Chorro, discharge runoff from the watershed into Morro Bay. The surrounding watershed encompasses approximately 75 square miles and includes urban areas and prime agriculture and grazing lands. The Morro Bay estuary provides habitat for commercial and sport fish species, shellfish and several rare and endangered species.

Participants:

The Task Force, a loose association of interested parties, consists of over 100 organizations with responsibilities and/or interests in Morro Bay. The participants include the California Regional Water Quality Control Board, U.S. Natural Resources Conservation Service, U.S. Environmental Protection Agency, Coastal San Luis Resource Conservation District, California Coastal Conservancy, local interest groups and landowners.

Problems Involved:

The Task Force formed in response to the sedimentation problem in Morro Bay. The rate of sedimentation has increased tenfold during the last 100 years, and the estuary lost 25 percent of its tidal volume during this time period. At the present rates of sedimentation, open water areas could be filled within 300 years.

Activities:

Task Force activities fall under three categories: planning, erosion control projects and land management and acquisition. Participants refer to these activities as Task Force actions even though they are generally conducted by individual agencies.

Planning

Under Assembly Bill 640, a new estuary management plan must be completed by July 1997. The Administrative Council, which is responsible for developing the plan, began meeting in June 1994. A coordinator was hired to manage meetings and plan activities. A series of public hearings will be held to identify concerns and problems within the area, and the Administrative Council will then prioritize the issues in the management plan.

Erosion Control

Erosion control efforts have focused on a 1,400-acre project, the John Maino Ranch, which demonstrates time-controlled grazing practices. Small sections of the range are intensively grazed for a short time period, leaving the areas open for use by wildlife and allowing vegetation growth most of the year.

In addition, buffer strips were constructed on croplands, and fencing was installed to protect riparian areas from grazing cattle. Stream bank stabilization projects were also implemented to reduce erosion.

Land Acquisition

The Coastal San Luis Resource Conservation District purchased Chorro Flats in 1991. The property consists of 129 acres located near Morro Bay at the mouth of Chorro Creek. The Task Force aims to restore the parcel to a functioning floodplain that will trap sediment. Conceptual plans are complete, and the next steps include finalizing the engineering design and obtaining the necessary permits.

The U.S. Environmental Protection Agency is funding a ten-year monitoring program, including a "paired watershed" study, directed by California Polytechnic Institute in San Luis Obispo. Two adjacent tributaries to Chorro Creek are monitored for various water quality and biological parameters to establish baseline conditions. Changes in land use practices are then implemented on one creek while no changes are made on the other creek. Monitoring will continue to measure the effects of the changes.

Processes:

The Task Force has no official membership list, and anyone may attend the quarterly meetings. During the meetings, representatives of various organizations give updates on their activities in the watershed. The meetings provide an opportunity to exchange information and network with other people working in the watershed.

Goals:

The participants plan to improve water quality in the Morro Bay watershed. Decreasing sedimentation is the primary goal, and other water quality problems and riparian habitat restoration are secondary issues.

Funding:

The U.S. Environmental Protection Agency, California Coastal Conservancy and the U.S. Department of Agriculture have contributed funds to the Task Force.

What Has Been Accomplished:

Over the last several years, agencies contributed more than \$1.0 million towards planning efforts, studies, technical assistance to landowners and erosion control cost-sharing projects. Approximately \$1.35 million was spent on land acquisition for passive sediment retention. However, the success of these efforts remains unclear. The agencies do not know yet whether there has been an overall reduction in sedimentation.

How Participants View Effectiveness, Success:

Some participants feel that many people are working very hard for few returns to date. The problem of sedimentation has been identified in several studies, but little progress has been made toward alleviating the problem. Without the participation of more landowners, the Task Force cannot implement many on-the-ground projects. The agencies encourage and educate the ranchers about land management practices and provide funds for projects, but these actions do not seem to be widely successful.

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Office of Water, United States Environmental Protection Agency (Document # EPA 840S-93-001), The Watershed Protection Approach Annual Report 1992 (1993).

MUGU LAGOON, CALIFORNIA

MUGU LAGOON TASK FORCE

Background:

The U.S. Natural Resources Conservation Service and the Ventura County Resource Conservation District (Ventura RCD) were planning projects to address the sedimentation problem in Mugu Lagoon. To better understand the sedimentation problem and find out what other activities were occurring in Mugu Lagoon, the Ventura RCD convened a meeting and invited members from local, state and federal agencies to attend. The meeting, which focused on exchanging technical information, proved so helpful that the group agreed to continue meeting on a quarterly basis as the Mugu Lagoon Task Force (Task Force).

Location and Scale of Watershed:

The Mugu Lagoon watershed includes Calleguas Creek and its tributaries, which drain approximately 325 square miles primarily within Ventura County. The Santa Susana Mountains on the north and the Santa Monica Mountains on the south set the boundaries for the watershed. While the lower part of the watershed is primarily agricultural, the middle and upper portions of the watershed are densely developed and include the cities of Simi Valley and Thousand Oaks. The Point Mugu Naval Air Station is located on the coast at Mugu Lagoon.

Participants:

The Task Force consists of the following entities: the California Coastal Conservancy, Ventura County Flood Control District, Regional Water Quality Control Board, University of California Cooperative Extension Service, U.S. Navy, California Fish and Game Department, U.S. Fish and Wildlife Service, U.S. Army Corp of Engineers and the Ventura RCD.

Problems Involved:

Sedimentation and increased freshwater runoff from developed areas present the greatest threats to Mugu Lagoon. According to Natural Resources Conservation Service reports, at the present rate of sediment deposition, the lagoon will fill up and become upland within 100 years.

Activities:

The Task Force meets to exchange information about activities affecting Mugu Lagoon. Task Force members present and discuss the activities and interests of their agencies. During these meetings, the Task Force decided that a comprehensive plan was needed for the entire watershed. As a result, the Natural Resources Conservation Service prepared the Mugu Lagoon Watershed Local Implementation Plan of Work (Implementation Plan) with the

cooperation of the Ventura RCD and the California State Coastal Conservancy. The Task Force serves as an advisory board to give input on the technical issues in the Implementation Plan.

Processes:

Task Force meetings operate informally, and all members are encouraged to participate in the discussion. For a while, a project leader was hired to conduct meetings until funding ran out. The Task Force currently operates without a formal leader.

Goals:

The Task Force seeks to identify the sources of erosion and sedimentation affecting Mugu Lagoon. It hopes to implement measures to minimize land loss, maintain agricultural production, reduce property damage and enhance environmental values.

Funding:

The California Coastal Conservancy, the Ventura RCD and the Natural Resources Conservation Service provided funding for the Implementation Plan. Each participating agency has provided staff support. The Ventura RCD received a grant under section 319 of the Clean Water Act to develop part of the Implementation Plan.

What Has Been Accomplished:

The Task Force has provided an effective forum for agencies to exchange and discuss information about Mugu Lagoon. The participating agencies initiated development of the Implementation Plan.

How Participants View Effectiveness, Success:

Every watershed effort needs an interested person to dedicate the necessary time and energy to organize the interested parties into a group.

While the Task Force has been effective so far, the group has reached the point where the tasks in the Implementation Plan needs to be initiated.

Mr. Campbell, former Project Manager for the Task Force, believes the effort has been successful by exposing agencies to watershed problem solving. For example, Ventura County Flood Control District became involved in the Task Force when it realized that addressing upstream causes of lagoon flooding was more cost effective than finding engineering solutions for the flooding.

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SALINAS RIVER, CALIFORNIA

UPPER SALINAS RIVER COORDINATED RESOURCE MANAGEMENT PLAN

Background:

The Upper Salinas River Coordinated Resource Management Plan (Salinas CRMP) effort began in early 1992. The Board of Supervisors for Monterey and San Luis Obispo Counties held a workshop to discuss issues on the Salinas River. Afterward, a local environmental group, Friends of the Salinas, contacted the Upper Salinas-Las Tablas Resource Conservation District (Salinas RCD) to request help in initiating a coordinated resource management and planning process in the Salinas Valley.

The U. S. Natural Resources Conservation Service sponsored a workshop to acquaint interested citizens and agencies with the CRMP process. The National Park Service's Rivers, Trails and Conservation Assistance Program provided technical assistance and facilitation. Several public workshops were held in May 1992 for citizens of Salinas Valley to share concerns and ideas about managing the Salinas River.

Location and Scale of Watershed:

The Salinas CRMP effort focuses on the upper portion of the Salinas River basin, which includes a seventy-mile segment of the Salinas river and extends from Santa Margarita Reservoir to the San Luis Obispo County line.

Participants:

The Salinas CRMP participants include the San Luis Obispo County Parks, National Park Service, Natural Resources Conservation Service, Salinas RCD, Central Coast Resource Conservation and Development Council, landowners along the Salinas River and citizens in Salinas Valley.

Problems Involved:

The Salinas CRMP effort addresses trespass problems (off-road vehicle use and illegal dumping) and water quality and water supply problems associated with population growth in the area. The major water supply issue is the proposed increased diversion out of the watershed by the City of San Luis Obispo. Water quality issues include increased salinity in the river caused by discharges from water softener companies and pollution from agricultural runoff.

Activities:

The Steering Committee is producing an interim report on issues in the watershed. The report will review what has been studied in the watershed and what needs further study.

A trespass task force set up River Watch, a neighborhood watch and educational program organized to prevent crimes, particularly trespassing, in the Salinas River area.

The Salinas CRMP participants are currently fighting a proposed increased diversion out of the watershed by the City of San Luis Obispo.

Processes:

A Salinas CRMP Steering Committee, composed of landowners, private organizations and government agencies, meets monthly to discuss issues facing the Salinas River. The National Park Service and San Luis Obispo County facilitate the meetings. All meetings are open to the public and are attended by approximately twenty-five to forty people.

The Steering Committee formed two task groups to address trespass problems and water resources issues. The Trespass Task Group works on problems such as off-road vehicle use, illegal dumping and vehicles abandoned on private land adjacent to the river. The Water Resources Task Group focuses on water quality and supply issues.

In 1995, in recognition of an evolving focus toward more local involvement, participants in the Salinas CRMP changed the group's name to the Upper Salinas Watershed Resources Management Committee.

Goals:

The Steering Committee's goal is to produce an interim report on issues in the watershed. Ultimately, the group would like to undertake some erosion control and restoration projects.

Funding:

Funding for the projects has come through the National Park Service, San Luis Obispo County and the Natural Resources Conservation Service.

What Has Been Accomplished:

Landowners have been encouraged by the success of the River Watch Project, evidenced by a decline in trespass incidents. The success of the River Watch project inspired trust and enthusiasm for the entire Salinas CRMP process.

How Participants View Effectiveness, Success:

Initially, landowners participating in the Salinas CRMP were wary of the National Park Service and the county as facilitators and coordinators of the CRMP. There was a widespread misconception that these entities planned to condemn private land in the area to make trails and parks. With the passage of time and the success of the River Watch program, landowners seem comfortable with the National Park Service and the county as coordinators.

How Participants View Effectiveness, Success:

Initially, landowners participating in the Salinas CRMP were wary of the National Park Service and the county as facilitators and coordinators of the CRMP. There was a widespread misconception that these entities planned to condemn private land in the area to make trails and parks. With the passage of time and the success of the River Watch program, landowners seem comfortable with the National Park Service and the county as coordinators.

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Rivers, Trails and Conservation Assistance, National Park Service Western Region, The Salinas River Workshop Summary, Aug. 1992.

SAN LUIS REY RIVER, CALIFORNIA

SAN LUIS REY RIVER COMPREHENSIVE PLAN

Background:

Residents in the San Luis Rey River watershed became concerned about the apparent adverse impact of sand and gravel mining activities on public facilities, including bridges and water pipelines. A member of the San Diego County Board of Supervisors identified the need to initiate a comprehensive planning effort to protect the watershed from sand and gravel mining activities. As a result, San Diego County coordinated an effort to put together the San Luis Rey River Comprehensive Plan (Plan).

Location and Scale of Watershed:

The San Luis Rey River drains over 550 square miles and runs adjacent to and north of the City of San Diego. The river stretches for almost fifty miles before entering the Pacific Ocean at the City of Oceanside. The Plan focuses primarily on the San Luis Rey River corridor from Lake Henshaw Dam to the Pacific Ocean and secondarily on the rest of the watershed within San Diego County.

Participants:

Entities involved with the Plan include the California Coastal Conservancy, City of Oceanside, Yuima Municipal Water District, Rainbow Municipal Water District, San Luis Rey Municipal Water District, California Department of Transportation, California Division of Mines and Geology, Vista Irrigation District, San Diego County Rock Producers Association, San Diego Farm Bureau, San Diego Gas & Electric Company, farmers, biologists, environmental groups, Rincon Band of Mission Indians, San Diego County, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency (EPA) and the U.S. Fish and Wildlife Service.

Problems Involved:

The river and wetlands are threatened by sand and gravel mining activities. Specific concerns include excessive mining, inadequate reclamation on and off mined sites, loss of habitat and direct and indirect dangers to public facilities.

Activities:

A consultant is compiling a comprehensive resource inventory of the watershed. Currently, committees are outlining a list of objectives and working on a rough draft of the Plan.

A Work Program, which sets out a schedule of tasks and funding sources involved in developing the Plan, has been written and continues to be revised.

Processes:

In order to draft and implement the Plan, a Technical Advisory Committee and Citizen's Advisory Committee were organized and meet every three months. The Technical Advisory Committee consists of representatives appointed by the agencies and organizations involved with the Plan. The Citizen's Advisory Committee consists of landowners. At least one citizen from each planning region within the watershed attends the Citizen's Advisory Committee meetings.

Each committee has a chairperson, and all decision making is by consensus of the participants. Various subcommittees meet as needed to work on specific issues and objectives for the Plan.

San Diego County coordinates the committees and the planning process. A Project Coordinator from the county provides assistance and guidance for the committees by preparing agendas and minutes and providing organizational support. The county also prepares grant proposals, oversees the consulting work and provides any general management needed for the planning process.

Goals:

The Plan participants seek to develop a comprehensive plan, participate in studies and coordinate activities that affect the San Luis Rey River watershed. The Plan will consider the following interests: environmental preservation, sensitive species and habitat, flood control, agriculture, recreation, protection of public facilities, water, resources, mineral resources, tribal uses, and other public and private uses.

Funding:

EPA provided funds to conduct a resource inventory and pay administrative costs for the Plan. The California Water Resources Control Board supplied \$95,000 for a water quality study. San Diego County supplies coordination and management for the planning process.

What Has Been Accomplished:

A Memorandum of Understanding has been prepared and signed by over half of the participating agencies. Drafts of Plan goals and objectives have been completed.

How Participants View Effectiveness, Success:

The hardest part of the watershed effort is yet to come. No hard decisions are involved in collecting information. Making decisions on how to handle watershed problems and what projects should be implemented will be difficult.

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Office of Water, United States Environmental Protection Agency (Document # EPA 840S-93-001), The Watershed Protection Approach Annual Report 1992 (1993).

SANTA CLARA RIVER, CALIFORNIA

SANTA CLARA RIVER ENHANCEMENT AND MANAGEMENT PLAN

Background:

The U.S. Fish & Wildlife Service, the California Coastal Conservancy, and the Los Angeles and Ventura County governments all played an important role in organizing a watershed effort to put together the Santa Clara River Enhancement and Management Plan (Santa Clara River Plan). Many agencies and organizations were conducting activities along the Santa Clara River without any coordination among them. Also, permitting processes had come to a standstill because endangered species habitat along the river was threatened.

The Fish & Wildlife Service, the California Coastal Conservancy, and the counties formed a Steering Committee of approximately twenty-seven interested parties, including all levels of government, agencies and landowners along the Santa Clara River. The Steering Committee has met quarterly since January 1993.

Location and Scale of Watershed:

The Santa Clara River extends approximately 100 miles, and the Santa Clara River Plan considers the area from the town of Acton (in Los Angeles County) to the mouth of the river at Oxnard (in Ventura County). The scope of the Santa Clara River Plan extends to the 500 year floodplain boundary. This was a compromise with private landowners, who were wary of possible regulation of the watershed above this boundary. Most of the Santa Clara River is privately owned.

Much of the Santa Clara River supports natural riparian woodlands and provides habitat for several endangered species. Six percent of the river bank is lined with concrete, but most of the river channel is unmarked by development.

Participants:

Participants include: Los Angeles County Departments of Public Works and Regional Planning; Los Angeles County Sanitation District; Ventura County Flood Control District; Ventura County Farm Bureau; Ventura County Resource Management Agency; municipalities of Ventura, Oxnard, Acton, Santa Clarita, Fillmore, Santa Paula; California Department of Parks and Recreation; California Department of Fish and Game; California Regional Water Quality Control Board; Fish & Wildlife Service; U.S. Army Corps of Engineers; Caltrans; Santa Clara River Aggregate Producers; Santa Clara Valley Property Owners Association; Friends of the Santa Clara River; United Water Conservation District; Valley Advisory Committee; Newhall Land & Farming Company; the California Coastal Conservancy; Beach Erosion Authority for Control Operations and Nourishment; Castaic Lake Water Agency; Wildlife Conservation Board.

Problems Involved:

Residents along the Santa Clara River disagree as to how the river should be used and maintained. The Steering Committee faces the challenge of developing a plan that will harmonize these interests as much as possible.

Interests within the watershed include developers who want to line the riverbanks to make the banks safe for construction; sand and gravel miners who want to mine the riverbeds and banks; farmers who want to construct a pilot channel in the river to protect their orchards from flooding; and preservationists who want to maintain the natural channel of the river and preserve the habitat around the river for native wildlife.

In addition to attempting to reconcile these diverse perspectives on river development, the participants also address river restoration and management issues and the invasion of exotic species.

Activities:

The Steering Committee has hired a consultant to put together the Santa Clara River Plan. The creation of this plan has several phases: (1) Phase 1, which is completed, involved identifying a study goal, summarizing historical data and existing regulations, and developing the mission statement; (2) Phase 2, which is ongoing, involves data needs, and forming subcommittees to identify objectives and (3) Phase 3, which is for the future, involves synthesizing a plan from the Phase 2 data and receiving final approval of the plan by the Steering Committee.

Additionally, the Steering Committee is organizing a pilot project addressing flood control and habitat enhancement. Since the planning process is slow, the California Coastal Conservancy is funding an initial on-the-ground project to maintain the interest level among participants.

Processes:

The Steering Committee, the primary decision making group, is led by co-chairs from Los Angeles County and Ventura County. All decisions are made by group consensus. A Coordinating Committee, consisting of representatives from the counties and several agencies, was assembled to set up agendas and provide support and guidance for the Steering Committee.

Subcommittees address specific issues within the watershed, including: biological resources, agriculture, mining, flood control, water resources and recreation. These subcommittees assemble information and work with the Santa Clara River Plan consultant on studies within their focus area.

Goals:

The Steering Committee plans to develop and get support for the Santa Clara River Plan, which will provide for the cooperative and sustainable use of resources along the Santa Clara River. In the process of developing the plan, the Steering Committee also hopes to improve the coordination and information exchange among the participants.

The Santa Clara River Plan will identify implementable measures such as wildlife habitat enhancement projects, acquisition of endangered species habitat and flood control and bank stabilization projects. Ultimately, the individual agencies that participate in the Steering Committee plan to implement these projects and take action on the Santa Clara River Plan recommendations.

Funding:

The agencies pooled funds to hire a consultant to prepare the Santa Clara River Plan. Throughout the planning process, many agencies donated funds and many donated in kind services: the California Coastal Conservancy, Fish & Wildlife Service, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, Wildlife Conservation Board, City of Clarita, Los Angeles and Ventura Counties, California Department of Transportation, United Water Conservation District, two flood control districts and the National Park Service.

What Has Been Accomplished:

The Steering Committee agreed to develop a comprehensive watershed plan and defined the scope of the plan. Additionally, the Steering Committee obtained funding and set up processes within the organization to work on plan development.

How Participants View Effectiveness, Success:

The Steering Committee would have benefitted from having a neutral facilitator run meetings. A committee of approximately twenty-seven members can be difficult to coordinate, especially when controversial issues are being discussed. The success of the Steering Committee must be credited partly to the current coordinators who have good people skills.

The difficult, controversial decisions have yet to be made in deciding on specific projects and priorities for the watershed.

Contact and Source:

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Richard Lee Colvin & Amy Pyle, "Charting the Future of a Wild River," L.A. Times Apr. 25, 1993, A1.

SANTA MARGARITA RIVER, CALIFORNIA

SANTA MARGARITA RIVER WATERSHED MANAGEMENT PROGRAM

Background:

In 1989, Riverside County and San Diego County passed a joint resolution to cooperate on planning for the stream-related resources of the Santa Margarita River. The rapid rate of development in the counties and its affect on wetlands, river corridors and open space concerned the Board of Supervisors of both counties.

In 1992, the counties invited the Rivers, Trails and Conservation Assistance Program of the National Park Service to help develop a planning process for a riparian corridor protection program. The National Park Service assisted the counties in convening agencies, organizations and landowners to support and provide input in the planning process. The Santa Margarita River Watershed Management Program (Program) seeks to set development guidelines for the watershed.

Location and Scale of Watershed:

The Santa Margarita River watershed drains approximately 740 square miles in San Diego and Riverside counties.

Participants:

Participating entities in the Program include many federal, state and local agencies, private organizations and individuals, including the U.S. Marine Corps at Camp Pendleton, U.S. Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, California Coastal Conservancy, California Department of Fish and Game, California Regional Water Quality Control Board, private landowners, U.S. Environmental Protection Agency (EPA), The Nature Conservancy, San Diego County and Riverside County.

Problems Involved:

Development, particularly in the upper watershed, threatens to diminish the quality of the Santa Margarita River system. Specific concerns include damage to wetlands and riparian corridors and the impact of upstream land use practices on downstream resources.

Additionally, wildlife habitat along the lower river requires protection since several state and federally listed endangered or threatened species live along the lower portion of the river and in the estuary. Flooding of stream-side property, exacerbated by development in the upper watershed, is a critical problem. Water quality problems caused by agricultural runoff, septic systems and wastewater treatment facilities exist to some degree in the entire watershed.

Activities:

Participants have been working to establish goals for developing a comprehensive watershed plan. Program participants also have been seeking to increase public support for watershed protection by sponsoring weekend clean-up days and designing stream bank restoration projects for an "Adopt-a-River" program.

Processes:

A Policy Committee has been formed to provide structure and leadership for the Program. The Policy Committee includes supervisors from each county, public officials from two cities, a representative from Camp Pendleton Marine Base, two representatives from local water districts, and the watershed's representatives in the Legislature. The Policy Committee runs its own meetings.

Additionally, subcommittees composed of local residents and other interested parties address water supply, flood control, open space, wildlife habitat and land use issues.

Goals:

The overall mission of the Program is to fashion a set of common goals and management strategies to maintain and restore the ecological integrity of the Santa Margarita River resource system while providing for appropriate watershed uses and activities.

Initial specific goals identified by Program participants include: conservation and enhancement of habitat and biodiversity; protection of water supply and water quality; management of stormwater runoff; reduction of flood damage; provision of regional and community open space and recreation; reclamation of wastewater and planning for economically sustainable and resource-sensitive urban development.

Funding:

The Nature Conservancy, San Diego County and Riverside County each contributed \$20,000 for staffing the Program. Funds for hydrological modelling were contributed by the California Coastal Conservancy and EPA. The National Park Service funded a report about the roles and responsibilities of Program participants.

What Has Been Accomplished:

The Program has succeeded in developing relationships among some of the participants. A broad mission statement has been adopted; goals and objectives have been defined, but remain controversial. The Program has attracted technical assistance for developing hydrological modelling efforts, identifying wetlands, and educating the public.

How Participants View Effectiveness, Success:

According to the National Park Service report (listed below under source), watershed planning offers an opportunity for stakeholders to have more say in their future, not less. It asks the question: "What kind of environment do residents of the Santa Margarita River watershed want to live in?" and attempts to understand the natural functions of the river system while providing a framework to coordinate fragmented management relationships. These efforts will ultimately contribute to a higher chance of success in improving land use practices, protecting biodiversity, reducing flood damage, providing recreation, protecting water supply and accommodating growth in a manner which protects the quality of life in the watershed.

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Santa Margarita River Watershed Management Program, Santa Margarita River Watershed: Today's Management Framework — Participants in Profile (Rivers, Trails and Conservation Assistance Program, National Park Service), 1995.

SANTA MONICA BAY, CALIFORNIA

SANTA MONICA BAY RESTORATION PROJECT

Background:

In the late 1980s, the public became concerned about the environmental degradation of Santa Monica Bay (Bay). The Regional Water Quality Control Board and the City of Los Angeles joined with other agencies to perform an assessment of the Bay. Soon afterwards, the Bay was included in the National Estuary Program; the Program required the development of a Santa Monica Bay Restoration Plan (Bay Restoration Plan). The State of California is now coordinating the Santa Monica Bay Restoration Project (Project). Thus, the local planning effort was transformed into a state and federal planning effort.

Location and Scale of Watershed:

The Bay watershed encompasses 414 square miles and supports a population of approximately five million. Boundaries for the Project extend from the Ventura County line to Point Fermin on the Palos Verdes Peninsula.

Participants:

Elected officials at local, state and federal levels;

Federal agencies: National Marine Fisheries Service and Environmental Protection Agency (EPA);

State agencies: Department of Fish and Game, State Water Resources Control Board, California Coastal Conservancy, Department of Health Services, Los Angeles Regional Water Quality Control Board, State Lands Commission and the Bays and Estuaries Unit of the State Water Resources Control Board;

Local agencies: Los Angeles City Engineer, Los Angeles County Department of Health Services, Los Angeles County Department of Beaches and Harbors and Los Angeles County Department of Public Works;

Dischargers: Los Angeles Bureau of Sanitation, Los Angeles County Sanitation Districts, Las Virgenes Municipal Water District, Southern California Edison, Los Angeles Department of Water and Power and Chevron;

Environmental organizations: Heal the Bay, Sierra Club, League of Conservation Voters, League for Coastal Protection, Natural Resources Defense Council, American Oceans Campaign and Ballona Lagoon Marine Preserve; and

User groups: Public Advisory Committee of the Los Angeles Chamber of Commerce and Los Angeles Rod and Reel Club.

Problems Involved:

Discharges of wastewater and stormwater runoff into the Bay led to degradation of water quality and fish and wildlife habitat. Project concerns include the general health of the watershed and public health issues associated with swimming in the Bay and consuming Bay seafood.

Activities:

A series of actions were undertaken by Project participants beginning in the late 1980s to lay the foundation for the comprehensive Bay Restoration Plan, including studies to link scientific and technical information with management decisions, public outreach and on-the-ground habitat and resource restoration projects. The development of one of the first stormwater runoff permits in the country is credited to the Project and, as measures are triggered under the permits, reductions in surfzone bacterial counts and other water quality improvements are anticipated. The Project was also instrumental in bringing about stricter requirements including secondary treatment at major wastewater treatment plants in the Los Angeles area.

Processes:

The Project includes a fifty-member Management Committee and smaller Technical Advisory and Public Advisory Committees. The Bay watershed is divided into two drainage areas with committees to direct implementation of the activities in those areas. Also, ten staff members including a director, planning manager, engineer and scientists manage the day-to-day affairs of the Project.

Goals:

The Project's goals are to:

- establish a formal mechanism for coordination of environmental management of the Bay watershed;
- determine links between land use practices, pollutant loads, beneficial uses and permitting and monitoring programs;
- coordinate components of the Clean Water Act's National Pollutant Discharge Elimination System permitting program, including urban runoff and municipal, industrial and cooling water discharges, with other permitting and regulatory activities in the watershed;
- develop management plans for priority areas of the Bay watershed;
- provide effective enforcement of pollutant reduction programs and monitor their effectiveness;
- enhance public education and participation in the process and

- monitor the effectiveness of the Project, including regional, cumulative and long-term impacts.

Funding:

The Project created the Santa Monica Bay Restoration Foundation, a nonprofit foundation. The Foundation raises money to support the current federal and state planning processes and ultimately fund part of the Bay Restoration Plan implementation. The Project is also funded by the EPA and the State Water Resources Control Board.

What Has Been Accomplished:

Areas of progress include: (1) improvements at area wastewater treatment plants; (2) recovering marine life around outfalls, as seen by reduced contaminants and increased biological diversity and (3) creation of a stormwater runoff permitting process. The Santa Monica Bay Restoration Plan was completed by project participants in 1994.

How Participants View Effectiveness, Success:

The Project has been very successful in many ways. Project participants are gaining a better understanding of the complexity and interrelatedness of issues within the watershed. Outreach efforts have succeeded in informing the public that storm drains empty untreated runoff into the Bay, and therefore runoff from lawns and roads is a source of pollutants. The Project provides a means for different groups to coordinate their public education efforts so they are not all spending money to distribute the same message.

The Project has helped cities and other entities in the Watershed recognize they are part of a larger scheme and need to work in coordination on water quality issues.

Contact and Source:

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Santa Monica Bay Restoration Project, Progress Update for the Santa Monica Bay Restoration Project (1991-1992).

TRINITY RIVER, CALIFORNIA

TRINITY RIVER RESTORATION PROGRAM

Background:

Since the construction of Trinity Dam in 1963, the native fish populations in the Trinity River have severely declined. Spurred by local public and agency interest, Congress formed the Trinity River Basin Restoration Task Force (Task Force) in 1984 to restore the fisheries to pre-dam levels. One year later, the Task Force established the Trinity River Restoration Program (TRRP) comprised of fourteen federal, state and local agencies. The TRRP contracted with the Trinity County Resource Conservation District (Trinity RCD) to work with landowners along Grass Valley Creek, a tributary to the Trinity River. Since the late 1980s, the Trinity RCD has implemented erosion and sediment control projects in the Grass Valley Creek watershed in cooperation with the TRRP.

Additionally, a Coordinated Resource Management Planning Group, consisting of agencies and landowners, has recently formed to address the South Fork of the Trinity River (South Fork CRMP). The TRRP has helped the South Fork CRMP fund studies of sediment sources and implement erosion control projects.

Location and Scale of Watershed:

Both Grass Valley Creek and the South Fork flow into the Trinity River in Northern California. The TRRP watershed work in Grass Valley Creek encompasses the entire 23,000 acre Grass Valley Creek basin in Trinity County. The South Fork CRMP addresses the entire South Fork basin of the Trinity River.

Participants:

TRRP participants include U.S. Bureau of Indian Affairs, National Marine Fisheries Service, U.S. Natural Resources Conservation Service, U.S. Bureau of Reclamation, U.S. Forest Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Forestry and Fire Protection, California Department of Water Resources, California Water Resources Control Board, Humboldt County, Trinity County and the Hoopa Valley Tribe.

South Fork CRMP participants include state and federal agencies, the Six Rivers and Trinity National Forests and representatives of approximately 2,000 private landowners in the watershed.

Problems Involved:

Through the operation of the Trinity and Lewiston Dams, around 75 to 80 percent of the Trinity River flows have been exported to the Central Valley Project. As a result, the reduced flows in the Trinity River are insufficient to flush out sediment from soil erosion in the river basin, and salmon spawning beds have been buried. Reduced flow has also allowed vegetation to encroach on the flood plain, causing a reduction of rearing and holding habitat for the fisheries. Some estimates suggest the salmon population has dropped from 800,000 in 1960 to about 7,000 in 1994.

Trinity County is currently involved in litigation with the U.S. Bureau of Reclamation, which operates the Trinity and Lewiston Dams, to increase the flows in the Trinity River.

Activities:

In the Grass Valley Creek watershed, the Trinity RCD is implementing erosion and sediment control projects.

The South Fork CRMP is conducting a study of upland sediment sources, working with a local tribe to map cultural resources in the Madden Creek area, converting drainage ditches to pipes and installing exclusionary fencing to keep cattle out of riparian areas.

Processes:

The TRRP uses the Trinity RCD to organize and implement on-the-ground projects within the Grass Valley Creek watershed. Individual agencies are carrying out projects in the watershed under the coordination of the Trinity RCD. For example, the U.S. Bureau of Reclamation has built a sediment dam, and the California Department of Water Resources has constructed several sediment dredging ponds at the mouth of Grass Valley Creek. Also, conservation groups are building sediment traps, and the Natural Resources Conservation Service is undertaking stream bed reconstruction.

The South Fork CRMP requires total consensus of the participants for all decision making. All meetings are open to the public and participation is entirely voluntary. A Memorandum of Understanding, outlining the issues and problems the group is discussing, was drafted and signed by the participants.

Goals:

The Task Force has established five goals for the TRRP:

- upgrade Trinity River Hatchery to compensate for lost fish production above the dam;
- restore natural fish production below the dam;
- collect fish harvest management data;

- compensate for wildlife habitat lost due to dams and
- recommend land management practices for maintaining a healthy watershed.

Currently, the Task Force is seeking new authorizing legislation and wants to expand the role of non-governmental groups in the TRRP; however, congressional support needs to be obtained.

Funding:

In the 1985 Trinity River Basin Fish and Wildlife Act, Congress authorized spending \$57 million in the Trinity River basin to increase fish populations. Additionally, many agencies have contributed assistance for various activities in the Grass Valley Creek watershed. Funds for the South Fork CRMP come from the California Department of Fish and Game, the Natural Resources Conservation Service and the TRRP.

What Has Been Accomplished:

In 1993, the TRRP purchased 17,000 acres of degraded logging lands within the Grass Valley Creek watershed and turned them over to the U.S. Bureau of Land Management (BLM) to manage. Also, the Trinity RCD has been successful in coordinating the efforts of many agencies for the purpose of improving the Grass Valley Creek watershed.

How Participants View Effectiveness, Success:

Federal funding has played an important role in this watershed effort. The high monetary value of the water in the Trinity River and the hydroelectric power it generates created the necessary leverage to get Congressional action. Also, the purchase of private land in the Grass Valley Creek watershed illustrates the powerful level of local support behind the TRRP.

Contact and Sources:

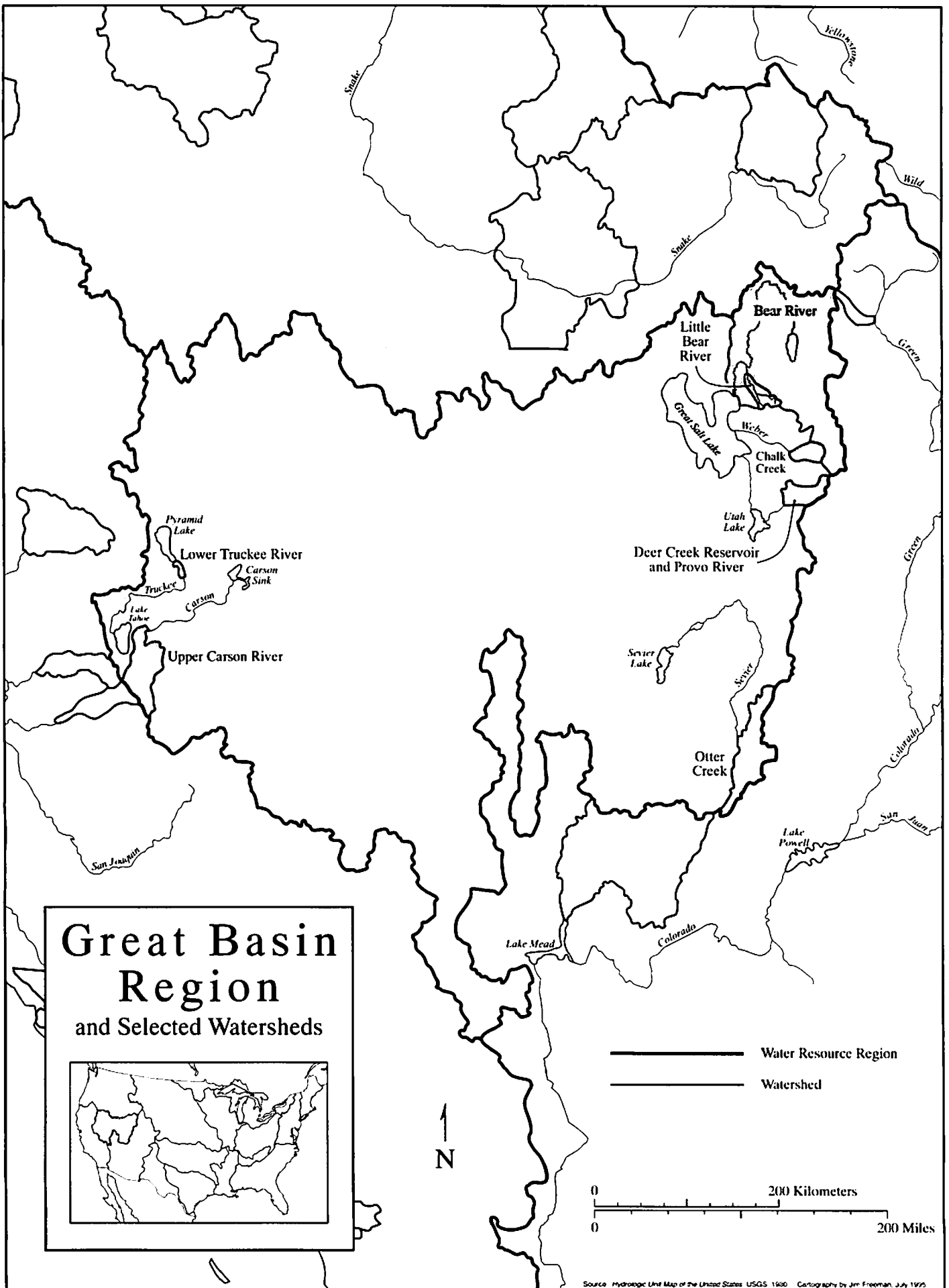
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"Who We Are and How We Got Here," Trinity County Resource Conservation District Newsletter (Trinity Conservation District, Weaverville, Cal.), Fall 1993, at 2.

Kathy Simpson, Soil Conservation Service, "Purchase of 17,000 Acres Furthers Restoration of Trinity River," Environmental Protection Agency Watershed Events, Fall 1993, at 6.

GREAT BASIN

LOWER TRUCKEE RIVER, NV
UPPER CARSON RIVER: NV, CA
BEAR RIVER: UT, WY, ID
CHALK CREEK, UT
DEER CREEK RESERVOIR, PROVO RIVER, UT
LITTLE BEAR RIVER, UT
OTTER CREEK, UT



LOWER TRUCKEE RIVER, NEVADA

LOWER TRUCKEE RIVER RESTORATION STEERING COMMITTEE

Background:

After years of water rights litigation in the Truckee River basin, Congress passed the 1990 Truckee-Carson-Pyramid Lake Water Rights Settlement Act, which required the U.S. Army Corps of Engineers (Corps) to investigate restoration options on the lower Truckee River. Congress appropriated \$400,000 for this restoration. In July 1993, the Lower Truckee River Restoration Steering Committee (Steering Committee) formed to develop recommendations for the Corps' restoration expenditures.

Earlier agency efforts to address the degradation of riparian habitat and the cui-ui and Lahontan cutthroat trout fisheries had resulted in many studies, but little action. In an attempt to reverse this trend, the Steering Committee hired a restoration coordinator to organize the cooperative effort and oversee restoration projects.

Location and Scale of Watershed:

The Steering Committee addresses the lower Truckee River between the City of Wadsworth, Nevada and the river's mouth at Pyramid Lake. The restoration effort covers a twenty-six mile segment of the river and does not extend beyond tribal lands on either side of the river.

Participants:

Steering Committee participants include the Pyramid Lake Fisheries Office, Pyramid Lake Tribe, U.S. Fish and Wildlife Service, U.S. Natural Resources Conservation Service, U.S. Bureau of Reclamation, U.S. Environmental Protection Agency (EPA), U.S. Bureau of Indian Affairs, Nevada Division of Environmental Protection, the local resource conservation district and The Nature Conservancy.

Additionally, other organizations that attend and participate in Steering Committee meetings but are not official members include Washoe County, the U.S. Geological Survey and environmental groups.

Problems Involved:

Water quality problems, riparian habitat degradation and channel instability plague the lower Truckee River. In addition to being the most degraded section of the river, the lower Truckee is also the most critical segment for the endangered cui-ui and the threatened Lahontan cutthroat trout. In order to accommodate water development needs, dams were constructed and water users diverted water from the river. The diversions reduced the river's natural flows, resulting in significant changes in the river's structure and character and declines in fish populations.

Sewage discharge, agricultural run-off, fish hatcheries, cattle grazing and timber harvesting also contribute to the water quality degradation and changed character of the river.

Activities:

Projects include constructing wetlands to capture and treat polluted waters fostering the growth and reproduction of cottonwood trees along the river corridor, constructing fencing and off-stream water areas for cattle and monitoring water quality and flows.

The Steering Committee also works on educating and involving the public. For example, the Steering Committee has constructed an interpretive boardwalk on wetland areas and sponsors public conferences and presentations. Volunteers work on restoration projects, such as tree planting.

Processes:

The Steering Committee meets approximately every two months. Meetings are facilitated by the restoration coordinator. Committee meetings are well attended and serve as an idea-sharing forum.

In addition to conducting meetings, the restoration coordinator works with the participating agencies between meetings on projects and activities. The Steering Committee uses sub-groups to address particular issues and tasks such as developing a river corridor plan.

Goals:

The Steering Committee's overall goal is to restore the aquatic and riparian ecosystems of the lower Truckee River. Specific objectives include:

- restoring aquatic and riparian habitat and improving water quality;
- restoring the physical characteristics of the river and addressing the problems of the delta between the river and Pyramid Lake and
- developing public consensus and support within the tribal community for the restoration activities.

Funding:

The U.S. Fish and Wildlife Service, Pyramid Lake Fisheries Office, The Nature Conservancy, EPA and the U.S. Natural Resources Conservation Service have provided funds for the Steering Committee and for the coordinator position. Additionally, the Fish and Wildlife Foundation and other foundations have also given funds to the Steering Committee.

What Has Been Accomplished:

Agencies have approached the Steering Committee asking to participate and offering resources, which is an indication the Steering Committee's efforts are effective. It is too early in the process to evaluate the effectiveness of the restoration efforts.

How Participants View Effectiveness, Success:

Having a coordinator who follows through and oversees the projects between meetings has improved the productivity of the effort. The commitment of particular individuals is also critical to the effort.

Quick solutions directed at symptoms, rather than root causes, do not lead to the overall success of a watershed effort. Many of the degradation problems have evolved over 100 or more years, and solutions will not come quickly. It is important to concentrate on understanding the causes of the degradation, even if the causes raise issues that are difficult to resolve. Many watershed efforts spend an enormous amount of energy and resources just treating the symptoms, which only leads to temporary solutions.

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UPPER CARSON RIVER: NEVADA AND CALIFORNIA

UPPER CARSON RIVER WATERSHED MANAGEMENT PLAN

Background:

The Nevada Division of Environmental Protection, U.S. Environmental Protection Agency (EPA) and the U.S. Natural Resources Conservation Service initiated the Upper Carson River Watershed Management Plan (UCRWMP) process. In an experimental effort to manage groundwater and surface water within a watershed region, these agencies hired a coordinator to organize the various interests in the watershed and write a watershed management plan. The first meeting, launching the effort, occurred in June 1994.

Location and Scale of Watershed:

The UCRWMP addresses the upper portion of the watershed from Carson City, Nevada upstream to the crest of the Sierras. This area encompasses approximately 800,000 acres and involves three counties: Alpine County in California and Douglas and Carson City counties in Nevada.

Participants:

Participants in the UCRWMP include the Nevada Division of Environmental Protection, Natural Resources Conservation Service, EPA, U.S. Farm Service Agency, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Indian Affairs, U.S. Army Corps of Engineers, California Regional Water Quality Control Board - Lahonton Region, Nevada Division of Wildlife, Nevada Division of Forestry, Nevada Division of Water Planning, Douglas County Commissioners, Alpine County Commissioners, Alpine County Public Planning, Alpine County Health Department, Carson City Supervisors, local homeowners associations, Alpine County Chamber of Commerce, University of Nevada Extension Service, resource conservation districts, dairymen, golf courses, ranchers, local schools, conservation groups, state legislators, and the Washoe Tribe of Nevada and California.

Problems Involved:

The upper Carson River does not meet water quality standards for suspended solids, nutrients and temperature. Groundwater contamination is also a concern. Activities in the upper watershed, including timber harvesting, mining, grazing and farming, have contributed to stream bank erosion and other water quality concerns. In addition, many areas within the watershed are facing rapid growth, and communities are concerned about how to manage growth and maintain the resources and character of the area. In particular, development of a county-wide flood control system for Douglas County that does not conflict with existing irrigation systems is a major concern.

Activities:

UCRWMP participants are developing a comprehensive watershed plan for the upper Carson River watershed. Participants meet regularly to address plan development issues. Subcommittees are responsible for gathering data and working with the coordinator to put the plan together.

In addition to working on the comprehensive plan, at each meeting UCRWMP participants discuss the planning and implementation of demonstration projects. These projects include riparian planting, erosion control, fence building, gravel bar removal, water quality enhancement and flood prevention and control. A Permit Committee identified all major permits required for river and wetland restoration efforts and began developing a process to expedite the permitting processes. Often demonstration projects require federal and state agency permits before construction may begin. UCRWMP participants hope to write a manual that will provide a checklist of procedural requirements for specific projects and list possible funding sources.

UCRWMP participants also undertake educational and public outreach activities. Public tours of the watershed are sponsored, and each UCRWMP meeting includes an educational presentation on watershed issues.

Processes:

UCRWMP participants began by developing goal and vision statements for the effort. Meetings, which are open to the public, are held either monthly or bi-monthly and are conducted by a professional facilitator. Three general topics are covered at each meeting: watershed plan progress, demonstration projects and education.

The UCRWMP coordinator works with participants to set meeting agendas. The coordinator also follows through on tasks and projects and works with subcommittees which address particular tasks or issues. For example, subcommittees research and assemble different sections of the watershed plan, work on expediting the permitting processes for restoration projects and identify funding sources for the UCRWMP. The coordinator will compile the work done by the subcommittees along with the coordinator's own research and write the actual plan document.

Goals:

Goal Statement: "To develop an openly accessible network of technical, financial and political support from private and public sectors, that will assist interested private landowners, tribal government and agencies in VOLUNTARILY planning and implementing ways to enhance the natural resource values of the Upper Carson River Watershed Area."

Vision Statement: "In thirty years we would like the Upper Carson River watershed area to be: a productive, healthy, diverse, agricultural, urban, pasture, forest, range and river system."

The system will provide clean water, healthy living conditions, abundant agricultural products, wildlife, recreation and planned urbanization that encourages the safe capture, storage, release and use of the water in the watershed."

Funding:

The coordinator's salary for the first two years is provided by the EPA through a Clean Water Act Section 319 grant to Nevada's Nonpoint Source Program. UCRWMP funding sources for implementation projects also include section 319, as well as private corporations, foundations, Douglas County Commission, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, Alpine County Commission and private landowners.

What Has Been Accomplished:

The goal and vision statements are complete, and the watershed plan is progressing on schedule.

Many demonstration projects are finished or under way and include riparian planting, erosion control, flood reduction and fence building. Additionally, permits have been obtained for other planned projects.

The Plan document is currently in rough draft form. The final version should be ready for publication by June 1996.

How Participants View Effectiveness, Success:

Coordinating a watershed effort is a complex and difficult task. With so many interests, organizations and agencies involved, all the participants tend to be independent and unlikely to go in the same direction. The process must start by defining common objectives.

A paid coordinator can greatly improve the productivity of an effort because volunteers have a limited amount of time to donate to the effort.

The effort must include many elements in order for it to satisfy all the members' concerns. Agencies are often interested in developing plans and studies, and the private sector usually wants to see on-the-ground projects. Managing the effort requires the juggling of many interests. The better the coordinator can understand the interests of each of the participants, the more effective the coordinator will be.

Total consensus decision making, in its truest sense, is impossible in a watershed effort. Agencies and organizations who are represented by volunteers seldom, if ever, give the volunteer representatives complete authority to make decisions regarding the organization's positions on complex issues. Additionally, if total consensus is relied on, the effort may be subject to "holdouts" when a particular group refuses to give consensus on one issue until it gets what it wants on another issue.

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BEAR RIVER: IDAHO, UTAH AND WYOMING

TRI-STATE BEAR RIVER WATERSHED PROJECT

Background:

In the 1970s citizens in the Bear River watershed became concerned about the effects of development along Bear Lake. Public meetings were held, and the governors of Utah and Idaho established the Bear Lake Regional Commission (Commission) to address development impacts along Bear Lake. Representatives from counties and municipalities, the states of Idaho, Utah and Wyoming and a local citizens group, Friends of Bear Lake, participate on the Commission. The Commission initially focused on improving sewage treatment facilities in the area and later expanded its area of concern to broader water quality issues. The Commission's activities encompass the geographical area affecting Bear Lake, which includes parts of Idaho and Utah.

The Bear River Research Conservation and Development Council (Bear River RC&D), another important organization in the Bear River watershed, encompasses seven counties located in southeastern Idaho and northern Utah. Because the Bear River flows through three states, many projects undertaken by the Bear River RC&D involve three state governments and two or more regional offices of federal agencies such as the U.S. Environmental Protection Agency (EPA) and the U.S. Bureau of Land Management (BLM). In view of the many government entities involved in the watershed and the desire of private landowners and other interested citizens to participate, it made sense to bring all the players together to work on water quality issues.

In 1993, the Commission and the Bear River RC&D organized a Bear River Water Quality Symposium to bring together all the interested government agencies and citizens in the Bear River watershed. The Symposium participants, including the Commission and the Bear River RC&D, formed the Tri-State Bear River Watershed Project (Tri-State Project) to address water quality issues in the watershed.

Location and Scale of Watershed:

The Bear River originates in the Uinta mountains of north central Utah and flows north into southwestern Wyoming, back into Utah, again into Wyoming and then into Idaho. In Idaho, some water from the river is diverted into Bear Lake, and then the water flows or is pumped back into the natural channel north of Bear Lake. After passing Bear Lake, the river turns south and again flows into Utah where it finally empties into the Great Salt Lake. The Bear River watershed encompasses approximately 7,600 square miles.

Participants:

The Tri-State Project consists primarily of federal and state agencies. Participants include the state water quality agencies from Idaho, Utah and Wyoming, EPA, BLM, U.S. Forest Service, U.S. Army Corps of Engineers, Bear Lake Regional Commission, Western Wyoming RC&D and Bear River RC&D. The Bear River RC&D is currently identifying private landowners and other interested citizens in the Bear River watershed to form a Steering Committee for the Tri-State Project.

Problems Involved:

The Tri-State Project focuses on water quality issues. Agricultural practices in Utah contaminate the water with high levels of nutrients and cause excessive soil erosion. In Wyoming, riparian vegetation removal, stream channelization, stream bank modification and petroleum activities contribute to the water quality problems. Other land use practices in the watershed that affect the river system include logging, urbanization and recreation.

Activities:

The current activities include developing a data base for the Bear River watershed and forming a Steering Committee composed of private landowners and interested citizens. Participants in the Tri-State Project meet regularly to establish goals and future projects.

Processes:

The Bear River RC&D coordinates the meetings and activities of the Tri-State Project. The agency participants plan to form a Steering Committee including private citizens.

Goals:

The goals of the Project include: (1) to improve measurably the overall water quality/quantity and stream integrity of the Bear River, including its tributaries, lakes and reservoirs and support multiple beneficial uses and development; and (2) to develop and implement a coordinated tri-state basin-wide water quality planning approach with strong local involvement and leadership.

Funding:

The U.S. Bureau of Reclamation supplied the initial funding for the Tri-State Project.

What Has Been Accomplished:

The Water Quality Symposium in 1993 inspired the participants to organize the Tri-State Project. Since the symposium, many of the agencies involved in the watershed have met regularly to coordinate efforts and share information.

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CHALK CREEK, UTAH

CHALK CREEK COORDINATED RESOURCE PLANNING PROCESS

Background:

The Utah Division of Water Quality (DWQ), through its water quality network, identified Chalk Creek as a watershed where human activities have caused significant water quality problems.

In order to address the water quality problems, the DWQ teamed up with the Utah Department of Agriculture to organize a local watershed group. Using the Summit County Soil Conservation District as the coordinator, the DWQ and the Department of Agriculture organized the Chalk Creek Coordinated Resource Planning (CRMP) Process in the early 1990s.

Location and Scale of Watershed:

The Chalk Creek watershed, which encompasses approximately 173,000 acres, is located about 45 miles east of Salt Lake City, Utah. The watershed includes Echo Reservoir and provides water for several northern Utah municipalities. Approximately 99 percent of the watershed is privately owned.

Participants:

The CRMP Steering Committee is coordinated by the Summit County Soil Conservation District and consists of private landowners in the Chalk Creek.

The CRMP Technical Committee includes representatives from the Utah Division of Water Quality; Utah Department of Agriculture; Utah Division of State Lands and Forestry; Utah Division of Wildlife Resources; Utah Division of Oil, Gas, and Mining; Utah Association of Soil Conservation Districts; Summit County; City of Coalville; Mountainland Association of Governments; U.S. Environmental Protection Agency; U.S. Natural Resources Conservation Service; U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service.

Problems Involved:

The CRMP Process focuses on water quality problems, including excessive sedimentation and nutrient levels in the creek. Other problems involve stream channel degradation, livestock grazing issues, oil and gas development, road construction, loss of riparian vegetation and the degradation of Echo Reservoir.

Activities:

The Steering Committee is implementing a demonstration project that involves planting vegetation along stream banks in order to reduce erosion and stabilize the channel.

The Technical Committee developed a Coordinated Resource Management Plan for Chalk Creek, which outlines the basic objectives and problems in the watershed. Currently, the Technical Committee meets regularly to coordinate studies on Chalk Creek and provide technical advice to the Steering Committee.

Both the Steering Committee and the Technical Committee participate in public education projects, including public meetings and tours explaining watershed management concepts.

Processes:

The CRMP process is nonregulatory and completely voluntary. The Steering Committee was established early in the CRMP process so local landowners would be the leaders and primary participants of the effort. The Technical Committee was formed to coordinate agency work within the watershed and advise the Steering Committee on technical matters.

A facilitator from the U.S. Natural Resources Conservation Service coordinates and conducts Steering Committee and Technical Committee meetings. Decisions are made by consensus.

During the drafting of the Chalk Creek Coordinated Resource Management Plan, public scoping meetings were held to obtain public input on the plan. The general public is encouraged to participate in any of the CRMP meetings.

Goals:

The Chalk Creek CRMP sets forth many objectives including: reducing sediment; stabilizing stream banks and implementing best management practices to reduce pollution from agricultural practices, road construction, off-road vehicle use and oil and gas development activities. Other goals involve the restoration and protection of fish and wildlife.

Funding:

Funding for activities comes from the U.S. Environmental Protection Agency under section of 319 of the Clean Water Act. Also, private landowners and participating agencies contribute in kind services and other resources.

What Has Been Accomplished:

A Coordinated Resource Management Plan was completed in the spring of 1994. This plan incorporated inventories of rangeland, forests, irrigated cropland, fisheries, stream and riparian areas and wildlife. Additionally, alternative treatment plans were developed for rangeland, irrigated cropland and forests.

How Participants View Effectiveness, Success:

The CRMP approach to improving water quality appears to be working largely because of local control and support. Local landowners make the decisions on what land use practices need to change and which projects will be implemented.

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DEER CREEK RESERVOIR AND PROVO RIVER, UTAH

DEER CREEK WATERSHED IMPROVEMENT PROJECT

Background:

In 1980, environmental concerns prompted Utah's governor to organize the Jordanelle Policy Advisory Committee and the Jordanelle Technical Committee to prepare a water quality management plan for the Provo River watershed. These committees are active in implementing the Deer Creek Watershed Improvement Project (Project), which involves working with local residents to implement land use and restoration projects for dairies located in the watershed.

Location and Scale of Watershed:

Deer Creek Reservoir, on the Provo River system, is located in the Heber Valley approximately twenty-five miles southwest of Salt Lake City.

Participants:

The Jordanelle Policy Advisory Committee consists of elected officials, and the Jordanelle Technical Committee consists of technical staff.

Project participants include the Central Utah Conservancy District, Salt Lake Metropolitan Water District, Wasatch Soil Conservation District, Utah Division of Water Quality, Wasatch County, Summit County, Mountainland Association of Governments, U.S. Bureau of Reclamation, U.S. Natural Resources Conservation Service, U.S. Farm Service Agency, U.S. Forest Service, U.S. Environmental Protection Agency and local dairies.

Problems Involved:

Nutrient accumulations from municipal waste treatment plants, fish hatcheries and animal waste constitute a large portion of the water pollution problems in Deer Creek Reservoir. Also, sedimentation caused by stream bank erosion remains a problem.

Activities:

Out of sixteen dairies, all but two or three have completed major projects to keep animal waste out of the water courses. A regional water quality plan is updated annually, and the Technical Advisory Committee continues to meet quarterly to monitor water quality.

Processes:

The Policy and Technical committees, established by the Governor, convened the interested parties in the watershed, particularly dairy farmers. A pollution control plan was developed, which set targets for reduction of phosphorous in Deer Creek. The committees also set targets for reducing pollution from dairies, U.S. Forest Service lands and the fish hatchery.

Goals:

The Project seeks to reduce phosphorous and other pollutants in the Deer Creek Reservoir watershed.

Funding:

The Rural Clean Water Project provided initial funding in the early 1980s to reduce the impact of local agriculture on water quality. Under the Clean Lakes Program, the U.S. Environmental Protection Agency provided cost-sharing funds for dairy farmers to clean up pollution problems.

Currently, the Central Utah Water Conservancy District and the Salt Lake Metropolitan Water District are providing a total of approximately \$70,000 annually to the county to fund water quality improvement projects.

What Has Been Accomplished:

The Midway/Heber Treatment Plant has been converted to a land application system. The new plant replaces two smaller plants, both of which washed treated sewage into the river. The new regional treatment center uses evaporation lagoons to convert the treated sewage into fertilizer, which is used in nearby alfalfa fields.

Additionally, substantial improvements in water quality have been documented in Deer Creek Reservoir, particularly in terms of algal growth. Less treatment is required before using the water for domestic purposes, and the aesthetics of the reservoir have been improved.

How Participants View Effectiveness, Success:

Local involvement is essential to the success of watershed protection. Local individuals and entities must take responsibility for improving and maintaining the watershed, and funding assistance is necessary.

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LITTLE BEAR RIVER, UTAH

LITTLE BEAR RIVER STEERING COMMITTEE

Background:

In 1989, the Blacksmith Fork Soil Conservation District and the Bear River Resource Conservation and Development Council (Bear River RC&D Council) convened local landowners and organizations to form the Little Bear River Steering Committee (Steering Committee). The Steering Committee focuses primarily on the significant water quality problems in the Little Bear River watershed.

Location and Scale of Watershed:

The Little Bear River watershed is located in northern Utah and includes Hyrum Reservoir and Porcupine Reservoir. The watershed encompasses 196,432 acres in Cache County. This area includes irrigated cropland and pasture, meadow pasture, non-irrigated cropland and pasture, as well as rangeland.

Participants:

The Steering Committee consists of representatives from the cities of Mendon, Wellsville, Paradise and Hyrum; Cache County; Bear River RC&D Council; Little Bear River Water Users Association; Utah State University Extension Office; Utah Association of Soil Conservation Districts; Blacksmith Fork Soil and Water Conservation District; Cache Wildlife Federation; U.S. Farm Service Agency and White's Trout Farm.

The Technical Committee includes representatives from state agencies, U.S. Natural Resources Conservation Service, Bear River Health Department, Bear River RC&D Council, Cache County Extension Service, U.S. Farm Service Agency and Utah State University.

Problems Involved:

The State of Utah identified the Little Bear River watershed as a high priority area with significant water pollution problems. The most obvious pollutant is sediment from stream bank erosion. Road damage and cropland erosion also contribute sediment and nutrients to the river system. Additionally, an excessive amount of nutrients and animal waste bacteria enter the system after being flushed from animal feed operations adjacent to the river.

Activities:

The Steering Committee began by educating the public and recruiting landowner participation through public meetings, going door-to-door to meet landowners and soliciting input from landowners. At the same time, the Technical Advisory Committee (Technical Committee) conducted studies and developed a Hydraulic Unit Area Plan (HUA Plan) for the Little Bear River watershed.

Landowners prioritized problem areas and project areas within the watershed. The Steering Committee and Technical Committee, working with landowners, design and implement restoration projects that address stream bank and cropland erosion. Other projects involve altering land use practices to minimize the amount of animal waste being flushed into the river and building structures to accommodate these new practices.

Processes:

The Steering Committee established the Technical Committee to inventory, evaluate and develop treatment options for water quality problems. The Steering Committee makes the decisions for the effort, and the Technical Committee serves as the advisory group. The chair of each committee conducts the meetings.

The Technical Committee coordinated five work groups in order to develop the HUA Plan. The HUA Plan was prepared as part of Utah's effort to comply with the Clean Water Act. The five work groups address the following issues: Hydrology/Sediment/Range, Cropland, Wildlife and Recreation, Monitoring and Evaluation, and Information and Education.

Goals:

The Steering Committee seeks to improve water quality to meet state standards for the Little Bear River watershed.

Funding:

Funding sources include the U.S. Department of Agriculture's Hydrologic Unit Area planning funds and EPA funds under section 319 of the Clean Water Act and under the Clean Lakes Program. In addition, the U.S. Bureau of Reclamation, Coors Clean Water Project 2000 and landowner contributions help fund projects.

What Has Been Accomplished:

Many restoration projects and improved land use practices are fully or partially implemented. The Utah Division of Water Quality has cooperated in not issuing citations for water quality violations until the Steering Committee works with the landowner.

How Participants View Effectiveness, Success:

Some participants believe the Steering Committee should have completed some of its studies and planning before starting public education and landowner recruitment. The initial watershed planning process took several years, and the public has little patience or interest in planning and studies. The public should be brought in when the group is ready to design and implement on-the-ground projects.

Contacts and Sources:

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OTTER CREEK, UTAH

OTTER CREEK STEERING COMMITTEE AND TECHNICAL COMMITTEE

Background:

In 1990, the U.S. Department of Agriculture funded a Hydrological Unit Area Plan in the Otter Creek watershed. Subsequently, the Utah Division of Water Quality and the Utah Department of Agriculture set up a Steering Committee consisting of local landowners in the Otter Creek basin. The Steering Committee was established to implement best management practices to reduce erosion and pollution in Otter Creek.

Location and Scale of Watershed:

Encompassing approximately 240,000 acres, the Otter Creek watershed is located 200 miles south of Salt Lake City, Utah. The watershed has both private and public lands, including land owned by the U.S. Bureau of Land Management and the U.S. Forest Service.

Participants:

The Steering Committee consists of private landowners in the Otter Creek watershed and is coordinated by the local soil conservation district.

The Technical Committee includes representatives from the Utah Department of Environmental Quality (including the Division of Water Quality), Utah Department of Natural Resources, Utah Association of Conservation Districts, U.S. Natural Resources Conservation Service, U.S. Environmental Protection Agency (EPA), U.S. Bureau of Land Management (BLM) and the U.S. Forest Service.

Problems Involved:

The Steering Committee addresses excessive sedimentation and nutrient levels in the creek and degraded riparian areas and stream channels. Other problems addressed by the Steering Committee include stream bank and rangeland erosion, animal waste pollution and the degradation of Otter Creek Reservoir.

Activities:

The Steering Committee has been working on demonstration projects involving stream bank stabilization and improved irrigation practices. Other projects include rangeland improvements, such as native grass planting and sagebrush management.

Processes:

The Steering Committee was established to allow local landowners to be the leaders and primary participants in the effort. The Technical Committee was formed to coordinate agency planning and research work within the watershed and advise the Steering Committee on technical matters.

A facilitator from the U.S. Natural Resources Conservation Service coordinates and conducts Steering Committee and Technical Committee meetings. Decisions are made by consensus, and the general public is encouraged to participate in all committee meetings.

Goals:

The Steering Committee and Technical Committee seek to improve water quality, stabilize stream banks, improve rangelands and implement improved irrigation practices.

Funding:

The U.S. Natural Resources Conservation Service, EPA, BLM and local landowners have provided funding for Steering Committee projects in Otter Creek. Specifically, funding sources include grants under section 319 of the Clean Water Act and the Agricultural Conservation Program.

What Has Been Accomplished:

Several demonstration projects involving stream bank stabilization and rangeland improvement are complete. The Steering Committee was able to apply EPA Clean Water Act funds to both private lands and BLM lands by making specific agreements with the ranchers who were leasing the BLM lands.

Because EPA was funding water quality improvements directly affecting public lands, BLM began funding additional improvement projects on its land to enhance the ongoing water quality projects. As a result of this collaboration, a great deal of water quality and rangeland improvement has occurred.

How Participants View Effectiveness, Success:

Private landowners have participated enthusiastically on the Steering Committee partly because the Steering Committee and Technical Committee took the time to demonstrate how improving and maintaining the watershed would produce a direct benefit to landowners.

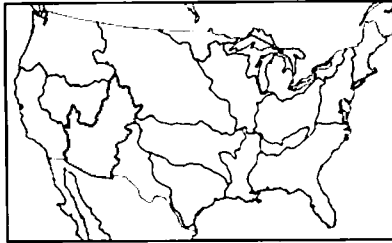
Contact:




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COLORADO RIVER BASIN

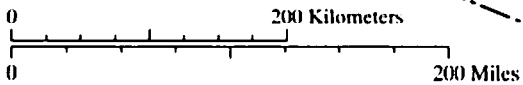
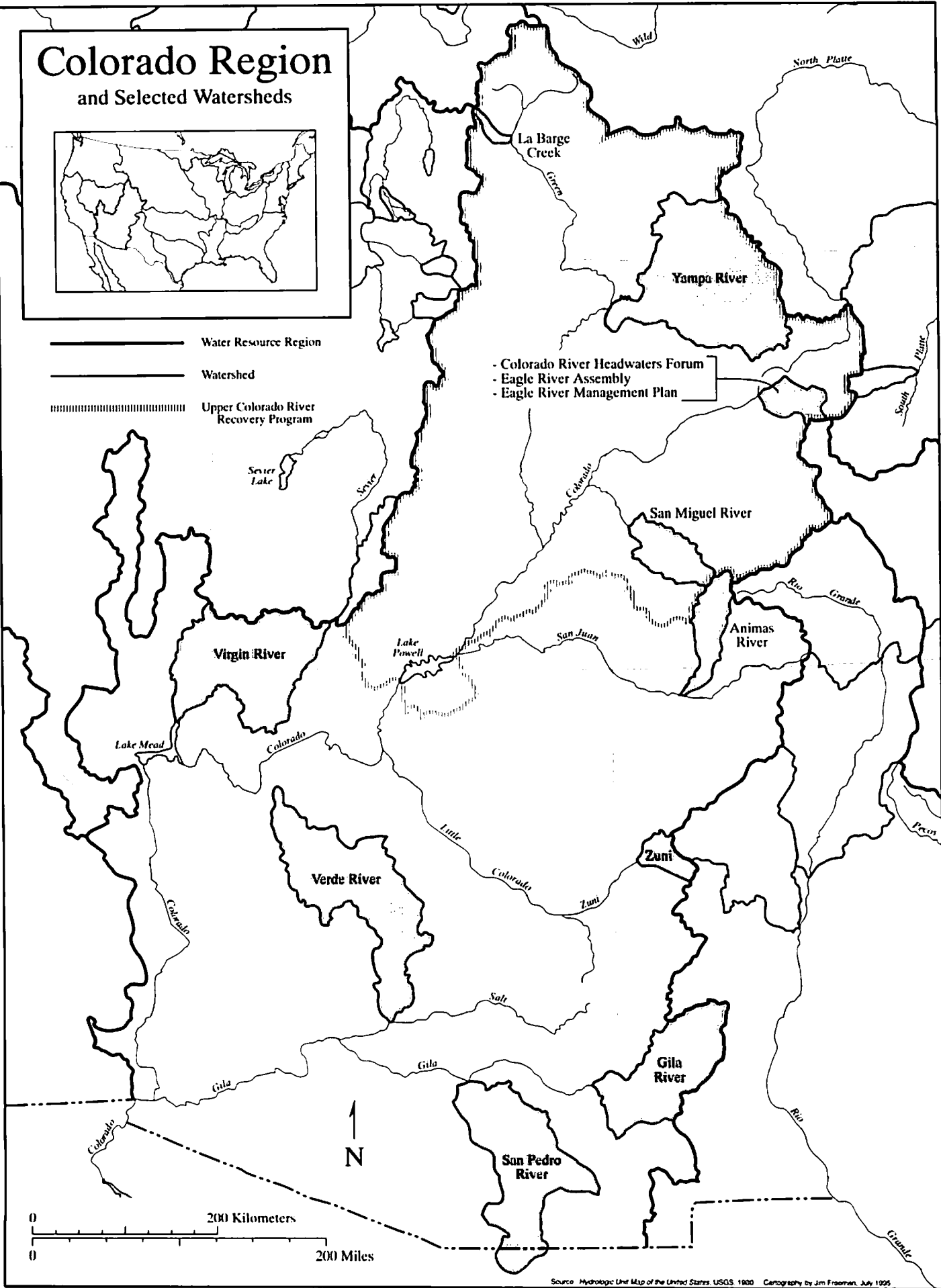
San Pedro River, AZ
Verde River, AZ
Animas River, CO
Colorado River Headwaters, CO
Eagle River (Assembly), CO
Eagle River (Management Plan), CO
San Miguel River, CO
Upper Colorado River Basin: CO, UT, WY
Yampa River, CO
Gila River: NM, AZ
Zuni River, NM
Virgin River, UT
La Barge Creek, WY

Colorado Region and Selected Watersheds



-  Water Resource Region
-  Watershed
-  Upper Colorado River Recovery Program

- Colorado River Headwaters Forum
- Eagle River Assembly
- Eagle River Management Plan



Source: Hydrologic Unit Map of the United States, USGS 1980. Cartography by Jim Freeman, July 1995.

SAN PEDRO RIVER, ARIZONA
SAN PEDRO COORDINATED RESOURCE MANAGEMENT GROUP
SAN PEDRO WATERSHED ALLIANCE

Background:

In June 1992, the San Pedro Coordinated Resource Management Group (San Pedro CRM Group) was formed in response to land acquisitions made by the Bureau of Land Management (BLM) in the San Pedro River basin. Local landowners were concerned the BLM was acquiring land without proper public notice or public comment periods. The San Pedro CRM Group successfully restructured the BLM land acquisition process and opened up communications between concerned parties. Due to a disagreement over what decision making structure should be used, the San Pedro CRM Group decided not to move beyond BLM land acquisition issues to address other watershed concerns. The San Pedro CRM Group disbanded and a new organization, the San Pedro Watershed Alliance (Alliance), was formed in 1994 with roughly the same membership. However, very few people attended the first meetings of the Alliance, and no meetings have been held since November 1994.

This summary does not discuss the Water Issues Group initiated in early 1994 to address river depletions related to groundwater withdrawals in the Sierra Vista subwatershed. The Water Issues Group has not met since January 1995.¹

Location and Scale of Watershed:

The San Pedro River originates in Mexico, crosses into southeastern Arizona, flows past Sierra Vista and joins the Gila River near Winkelman, Arizona. The San Pedro River watershed drains an area of approximately 3,000 square miles and crosses three counties in Arizona: Cochise, Graham and Pinal.

Participants:

The San Pedro CRM process was open to participation by any person and thus never had a stable membership. Consistently represented were the BLM; The Nature Conservancy; Audubon Society; the San Pedro, Redington, Winkelman and Hereford Natural Resources Conservation Districts; Arizona Game and Fish Department and landowners. Also represented at some meetings were the U.S. Environmental Protection Agency, Arizona Department of Agriculture, the U.S. Natural Resources Conservation Service and the U.S. Forest Service.

¹ For additional information on the Water Issues Group, contact Judy Jignac, Bella Vista Water Company, 4055 Campus Drive, Sierra Vista, AZ 85635.

Problems Involved:

In April 1986, the BLM acquired approximately 45,000 acres of land along the San Pedro River between Hereford and St. David, Arizona. Additionally, the BLM purchased many upstream areas and retired local irrigation rights. Many local landowners were opposed to the acquisitions and complained the BLM did not give adequate public notice. As a result, the BLM issued a moratorium on land acquisitions and suggested a coordinated resource management approach to the problem.

After the San Pedro CRM Group resolved the land acquisition problem, many San Pedro CRM participants saw an opportunity for further work in the San Pedro River basin. Catalysts for further work include water quantity problems caused by urban growth near Sierra Vista and water withdrawals from aquifers that feed the San Pedro River.

Activities:

With the land acquisition issue resolved to the satisfaction of most participants, the San Pedro CRM Group met to discuss the possibility of addressing other concerns in the watershed. However, consensus could not be reached, and the San Pedro CRM Group agreed to disband.

Processes:

The San Pedro CRM process faltered somewhat when trying to arrive at a workable process. The original plan was to follow the coordinated resource management process set up by the U.S. Natural Resources Conservation Service. However, the group decided it did not want to be as structured as called for under that process.

The San Pedro CRM Group adopted a consensus approach to decision making, allowing a single participant to veto a proposal. However it initially rejected other means of structuring the effort. Later, the San Pedro CRM Group formed a subcommittee to suggest a structure. The subcommittee consisted of ranchers, BLM staff, academics and others. The subcommittee suggested a structure that was acceptable to nearly everyone except one or two participants. Because the meetings were open to anyone wanting to participate, new people could show up after weeks of discussion and destroy consensus with a single veto. As a result, no specific structure was ever adopted.

Goals:

The goal of the San Pedro CRM process was to address the issue of land acquisitions. The group wanted to adopt a procedure that included all interested parties and provided better notice to those parties. The Alliance, in contrast, sought to provide an ongoing forum for the exchange of information to keep concerned parties in touch with each other once the CRM process was completed.

Funding:

There was no formal funding arrangement for the San Pedro CRM Group, partly because no formal structure ever existed. The BLM paid for most of the expenses associated with the San Pedro CRM process. The lack of resources to facilitate meetings and to generate and distribute meeting minutes may also have contributed to the failure of the Alliance.

What Has Been Accomplished:

The San Pedro CRM group implemented an improved land acquisition process. A procedure was created that would notify landowners of anticipated BLM land acquisitions, explain what options existed and provide an opportunity for local landowners to comment.

Furthermore, the San Pedro CRM Group brought together previously feuding parties, which resulted in improved relationships. The San Pedro CRM process opened communications between concerned parties, and led to the formation of the Alliance.

How Participants View Effectiveness, Success:

Many participants agreed that some form of decision making structure was needed for the San Pedro CRM process. The completely unstructured meetings created a problem by allowing newcomers to veto any decisions. Some participants grew frustrated at the inability to decide on a structure for the group and dropped out.

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VERDE RIVER, ARIZONA

VERDE WATERSHED ASSOCIATION

Background:

The Verde River is one of the most extensively studied rivers in the West. Matt Crew, who works with the Arizona State Parks, summed up the importance of the Verde River, "It's a river, it's in Arizona, it flows." Being one of Arizona's few perennial rivers, interested parties have met at various times regarding Verde River basin issues. The Verde Watershed Association (VWA) developed from these ongoing meetings.

In the late 1980s, the Arizona State Parks Board and the Arizona Department of Commerce organized a five-year corridor study on a sixty-mile stretch of the upper Verde River from Tapco to Beasley Flat to examine all uses and values of the river corridor. Local governments appointed a twenty-six-member steering committee comprised of a cross-section of the population to direct the project. The Verde River Corridor Project Final Report and Plan of Action recommended forming an ongoing group to address river issues.

In the early 1990s, responding to concerns in the lower basin over groundwater pumping in the upper basin, the Cocopai Resource Conservation and Development District sponsored a conference to see if there was interest in forming a Verde River watershed group. About 160 people attended that conference and formed a "bridging committee" which recommended the Verde Watershed Association (VWA). In January 1993, the second Verde River Watershed Conference was held to formally organize the VWA.

Location and Scale of Watershed:

The VWA addresses the entire Verde River watershed, which encompasses 6,646 square miles. Originating at the confluence of the Big Chino Wash and the Williamson Valley Wash north of Prescott, the Verde flows through steep canyons and across the broad Verde Valley before terminating at its confluence with the Salt River, east of Phoenix.

Two national monuments and six state parks are located within the watershed. A 39.5-mile stretch of the Lower Verde is designated as a National Wild and Scenic River. The Verde River watershed includes portions of four counties: Yavapai, Coconino, Maricopa and Gila. There are eight major perennial tributaries to the Verde River: Sycamore Canyon, Oak Creek, Beaver Creek, West Clear Creek, East Verde River, Fossil Creek, Wet Bottom Creek and Tangle Creek.

Participants:

A thirty-member board of directors governs the VWA. Twelve of the directors represent local communities (Flagstaff, Williams, Chino Valley, Prescott, Prescott Valley, Jerome, Clarkdale, Sedona, Cottonwood, Camp Verde, Payson and Phoenix); four represent counties (Maricopa, Yavapai, Gila and Coconino); four represent Indian communities (Yavapai/Prescott, Yavapai/Apache, Tonto Apache and Ft. McDowell); and ten represent specific constituencies (natural resource conservation districts, the Salt River Project, Yavapai cattle growers, irrigation organizations, private property owners, industry, recreation, environmental organizations, and one to-be-decided constituency).

The VWA has seventy to eighty paying members, including municipalities, counties, environmental groups, industries, state and federal agencies, businesses and private individuals. The organizations involved include the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Natural Resources Conservation Service, Arizona State Parks, Arizona Department of Water Resources, municipalities and irrigation districts.

Problems Involved:

The Verde River has water quality problems caused by sand and gravel operations and impacts from agricultural and urban areas. Some specific issues include sedimentation, impacts from sewage disposal systems and heavy recreational uses. The VWA also examines water quantity issues such as proposed diversions.

Activities:

The VWA has undertaken public outreach, educational and planning activities. As a very diverse group, the VWA seeks to educate people by presenting all sides of watershed issues and does not take a position on the issues. A monthly newsletter is published and distributed to educate people on watershed issues. In addition, the VWA has begun a cooperative river basin study with U.S. Natural Resources Conservation Service to inventory the resources within the Verde River basin. Seminars are also sponsored by the group, including a 1994 seminar on grazing issues in the watershed.

Processes:

The VWA meets monthly at various locations throughout the watershed.

There are seven education subcommittees responsible for providing accurate, up-to-date information on each of the following topics: (1) social, demographic and quality of life issues; (2) economics, land-use and carrying capacity issues; (3) legal and political issues; (4) water supply, water quality and water use issues; (5) ecology and natural resource issues; (6) recreation and aesthetic issues and (7) public participation, VWA politics and procedural issues.

Goals:

The purpose guiding the VWA is to "ensure sufficient flows in the Verde River to maintain a healthy river ecosystem and ensure sufficient water supplies to provide for and accommodate realistic levels of growth and uses within the Verde River Basin for the future."

The VWA's proposed articles state: "The VWA's challenge is not to decide who wins or loses, but to be as diligent as possible in hearing and understanding all sides of an issue, then in determining what compromises and accommodations may provide the most beneficial mix of benefits over the longest term to the most people, all in consonance with the highest possible level of protection for the Verde's water resources."

Funding:

The VWA charges membership dues; annual dues are \$100 for governmental agencies and businesses, \$50 for civic groups and private nonprofit groups and \$25 for individuals.

The VWA received a grant from the U.S. Bureau of Reclamation that will fund ongoing organizational efforts, administration, the newsletter, scientific studies and the development of a watershed plan.

What Has Been Accomplished:

Formation of the group has resulted in agricultural and industry groups listening to the concerns of local citizens. Other VWA accomplishments include completion of an inventory of recreational uses, an assessment of the watershed and the receipt of a Bureau of Reclamation grant. The VWA has also sponsored several well-attended seminars on various watershed issues.

How Participants View Effectiveness, Success:

Keeping people active is difficult when there is not a set agenda. The VWA Chairman observed, "People just don't hang in there for long-range planning efforts — it's not exciting enough."

Some concern exists that not all of the interested parties are staying active in the VWA. Many groups came to VWA to promote their own agenda and became frustrated by VWA's neutrality. Some of these groups are becoming less involved.

Contact and Sources:

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Verde Natural Resource Conservation District, Verde Watershed Association Confluence Feb. 1994 - Apr. 1995.

D.C. Wilkin, Verde Watershed Association Proposed Articles of Incorporation (Mar. 15, 1993) (unpublished memorandum on file with the Verde Watershed Association, Camp Verde, Ariz.).

ANIMAS RIVER, COLORADO

ANIMAS RIVER STAKEHOLDER GROUP

Background:

Due to the known absence of fish in the upper Animas River basin, the Colorado Department of Health monitored that area from 1991 through 1993 to establish the extent and sources of the toxic contamination and its relationship to the historical mining operations. With that information and a recognition of the complex technical, institutional and legal issues in developing a cleanup strategy, the Department of Health asked the Colorado Center for Environmental Management (Center) to organize interested parties in the Animas River basin for the purpose of addressing the metal contamination problem. The Center, a nonprofit organization, was created by the Governor to find workable approaches to environmental management. Operating with a grant from the U.S. Department of Energy, the Center agreed to work with interested parties in the Animas River basin. In January 1994, the Animas River Stakeholder Group (Stakeholder Group) was formed.

The Colorado Water Quality Control Commission held hearings in September 1994 regarding its triennial review of water quality classifications and standards for the Animas River. The Stakeholder Group asked the Commission not to impose more restrictive changes in the water quality regulations on the river. Instead, the Stakeholder Group wanted the opportunity to analyze the water quality problems and propose solutions. In response to the request, the Commission gave the Stakeholder Group leeway to find and implement solutions to the metal contamination problem.

Location and Scale of Watershed:

The Animas River originates in the San Juan Mountains located in the southwest portion of Colorado. The river runs south past the Town of Silverton, through the Town of Durango and into the State of New Mexico. The Stakeholder Group implements water quality improvement projects in the portion of the basin above Silverton, where most of the mines are located. The group is also examining the main channel of the Animas River from Silverton to Durango in order to study the possibility of reestablishing a healthy trout fishery in that section of the river.

Participants:

The Stakeholder Group has approximately thirty-five active members including representatives from the towns of Silverton and Durango, local landowners and mining companies, Southwest Water Conservancy District, San Juan County, Colorado Department of Health, Colorado Division of Minerals and Geology, Colorado Division of Wildlife, U.S. Forest Service, U.S. Bureau of Reclamation, U.S. Bureau of Mines, U.S. Geological Survey, U.S. Bureau of Land Management (BLM), U.S. Environmental Protection Agency (EPA), environmental organizations and the general public. The Southern Ute Tribe has also participated.

Problems Involved:

The Stakeholder Group is working on improving water quality problems, specifically metal contamination from past mining activities. The heavy metals in the water have almost completely eliminated the trout population in the upper Animas River and have reduced the trout population downstream to Durango.

Activities:

The Stakeholder Group has divided its approach to the Animas River metal contamination problems into three phases: (1) general investigation phase; (2) feasibility study and remedial design phase and (3) remedial activities phase. The goals for the planning process were established by the Stakeholder Group and State Water Control Commission. Completion of the plan and several pilot projects are scheduled for 1998. The group is currently working on the first phase, which involves water monitoring and sampling to identify which specific land sites are polluting the water. After identifying the pollution sources and the cleanup costs, a priority list of sites to be cleaned up will be created. The second and third phases involve designing the cleanup of specific sites and carrying out the actual cleanup projects. An on-the-ground pilot project will be undertaken, which will involve restoring a former mining site along the river.

A delegation of Stakeholder Group members met with EPA Regional Administrator Bill William Yellowtail to review the progress on the plan. As a result, the planning process may be used by EPA as a model for other watershed groups. The process is seen as a good example of how to effectively combine national regulatory requirements with grassroots watershed goals.

Processes:

The Stakeholder Group meets about once a month. The actual structure of the group is still evolving. A half-time local coordinator was hired to coordinate activities among the participating agencies and broaden support in the local communities. The Colorado Center for Environmental Management originally facilitated the group and now provides administrative and organizational support.

Several subcommittees address specific issues, such as funding, monitoring and feasibility analysis. Other subcommittees will likely be created to address regulations, liability and other issues. So far the structure of the Stakeholder Group is informal, and all decision making is done by consensus.

Goals:

The Stakeholder Group seeks to reduce the metal loading in the upper Animas River, and thereby restore a viable trout fishery on the main stem of the river upstream to Silverton.

Funding:

The Stakeholder Group is funded by a grant under section 319 of the Clean Water Act. Additionally, federal agencies such as the Bureau of Reclamation, Forest Service and the BLM, are contributing services and technical support for monitoring and water quality investigation. A local landowner is contributing funds to implement the first pilot project. Funding for the Colorado Center for Environmental Management comes from a U.S. Department of Energy grant for the purpose of establishing collaborative approaches to environmental cleanup.

While the Stakeholder Group has sufficient funds to start on the first phase of their project, the group continues to look for funds needed to complete the project, particularly for site-specific cleanup activities.

What Has Been Accomplished:

The Stakeholder Group has defined the goals to be accomplished and outlined the different phases of the project.

Several government groups including the EPA, the U.S. Department of Interior, and the U.S. Department of Agriculture are monitoring the Stakeholder Group as a model of a "bottom up" collaborative approach to solving natural resource problems. In other words, local participants are controlling the group's decision making while funding and resources are provided by state and federal agencies.

How Participants View Effectiveness, Success:

While still a young organization, the Stakeholder Group has matured and changed since its formation. For example, the group has evolved from a reactive phase when it was responding to the Colorado Water Quality Control Commission's hearings on water quality classifications to a proactive phase where it is now pursuing its own goals and activities.

Also, the local participants of the group have developed trust and appreciation for the Colorado Center for Environmental Management and the Colorado Department of Health. It took some time for local participants to realize that these entities wanted to work with local participants rather than control the decision making of the group.

Local participants are beginning to discover they have some real decision making powers and responsibilities. Residents of the watershed have much to lose or gain because the problems are in their own backyard and the solutions can be imposing.

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COLORADO RIVER HEADWATERS, COLORADO

COLORADO RIVER HEADWATERS FORUM

Background:

In 1991, the State of Colorado appointed the Northwest Colorado Council of Governments' Water Quantity/Quality Committee (NWCCOG-QQ) to prepare water quality plans under the Clean Water Act for Grand, Summit, Eagle, Jackson, Pitkin and Routt counties. When previously working on a water quality plan for the region, the NWCCOG-QQ ran into opposition from Front Range entities over the extent transbasin diversions impact water quality in the Colorado River headwaters.

In an attempt to avoid some of these conflicts in updating the water quality plan, NWCCOG-QQ formed a group of parties interested in the Colorado River headwaters. The group attended a two-day conference and discussed NWCCOG-QQ's findings and possible solutions to the water quality problems. After the initial conference, the group continued to meet and became the Colorado River Headwaters Forum (Forum).

Location and Scale of Watershed:

The headwaters of the Colorado River are located west of the Continental Divide in Grand, Summit, Eagle, Jackson, Pitkin and Routt counties.

Participants:

The Forum includes representatives from Grand, Summit, Eagle, Jackson, Pitkin and Routt counties and the municipalities within those counties. Also, Front Range communities that have water rights in the Colorado River watershed are participating in the Forum.

Other Forum participants include the NWCCOG-QQ, Colorado Department of Health, Colorado Division of Water Resources, sanitation districts, water districts, U.S. Bureau of Land Management, U.S. Geological Survey, Public Service Company, Colorado River Water Conservation District, U.S. Bureau of Reclamation, Cyprus Amax, Climax Mine, recreation groups, environmental groups and agricultural interests.

Problems Involved:

The Forum participants address problems concerning water quality, transbasin diversions and general water resource management. Any topic relevant to water resources in the Colorado River headwaters region can be discussed and presented at Forum meetings.

Activities:

The Forum holds quarterly meetings, which are largely informational and involve updates on current water court cases, legislation and regulations. The meetings give participants an opportunity to update their information and communicate with other participants.

Various organizations both within and outside the upper Colorado River watershed report on their current activities. For example, representatives report on activities from the Eagle River Assembly, Roaring Fork Forum, Front Range Forum, Summit Water Quality Committee, East Grand Water Quality Board and the Colorado Water Quality Forum.

Processes:

The Forum meets quarterly and uses facilitators to run meetings. Goal Groups were organized to work on specific activities such as compiling a Colorado River data base. These Goal Groups become active as the need arises.

Goals:

The Forum adopted the following mission statement: "Region 12 [area encompassing the Colorado River headwaters] water interests and those who impact them desire water management through a collaborative process and a structure based on shared data." The Forum encourages participants to discuss common issues and collaborate on water resource problems.

Funding:

Membership fees and quarterly meeting fees provide funding for the Forum.

What Has Been Accomplished:

By producing an atmosphere of cooperation and collaboration, the Forum has succeeded in encouraging and giving members a chance to share information and network.

How Participants View Effectiveness, Success:

The Forum has benefitted members outside water management matters. For example, an industrial company and a county were able to avoid costly tax litigation, partly because of the positive relationship developed through the Forum.

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Colorado River Headwater Forum Minutes, Summer 1994 and Winter 1994.

EAGLE RIVER, COLORADO

EAGLE RIVER ASSEMBLY

Background:

In January 1993, several local water districts came to a Colorado River Water Conservation District Board meeting to discuss their frustration with ongoing litigation regarding the Homestake II proposed water project. With the permission of the Eagle County Commissioner's Office, the Colorado River Water Conservation District Board sent out invitations to all major water rights holders in the Eagle River to meet and discuss water allocation issues. Among those invited were municipalities on the Colorado Front Range who transfer water over the Continental Divide from the Eagle River. The group became known as the Eagle River Assembly (Assembly).

Location and Scale of Watershed:

The Eagle River basin is located in north central Colorado adjacent to and west of the Continental Divide. The Eagle River flows from the Continental Divide northwest to the Town of Wolcott and then west to the Town of Dotsero, where it joins the Colorado River. The entire river basin is located within Eagle County.

Participants:

The Assembly includes public and private entities with water rights in the Eagle River basin. Participants include Vail Associates, Eagle County, the Colorado River Water Conservation District, Climax Mine, municipalities within Eagle County, and Colorado Front Range municipalities such as Denver, Aurora, Colorado Springs and Pueblo.

Problems Involved:

The Assembly is seeking solutions to water supply problems in the Eagle River basin that will avoid litigation.

Activities:

The Assembly hired consultants to conduct a study of the water allocation issues in the basin. The study resulted in two conclusions: (1) the transbasin diversions do not affect the critical low flow periods of the river because all transbasin diversions occur during high flow seasons in the spring and early summer and (2) during the low flow periods of the river, there is insufficient water to satisfy the current water rights in western Colorado. The water supply problem is especially severe in light of the projected growth in Eagle County and other western Colorado counties. A draft of the study was submitted to the public in an effort to obtain public input on possible water supply solutions. Currently, the Assembly is evaluating what the next steps should be in addressing the water supply problem.

In addition, the Assembly has worked with the Vail Consortium and the City of Aurora to establish a water trade program to improve instream flows in the Eagle River. The Vail Consortium includes Vail Associates, the Upper Eagle Regional Water Authority and the Vail Valley Consolidated Water District. Water is traded from Homestake Reservoir for water in Green Mountain Reservoir to augment flows in the Eagle River.

Processes:

The Assembly has meetings approximately every three months at different locations in the Eagle River basin. The Assembly has set ground rules for its meetings: no press, no lawyers and no legal brief material. Ground rules were established to encourage participants to be candid and relaxed. The Eagle County Commissioner facilitates the meetings.

Goals:

The Assembly's Goal Statement reads: "To develop a common technical understanding of the water supply and demand needs in the Eagle Basin, and to explore alternatives to existing water supply proposals."

Funding:

Expenses include meeting costs and consultant costs, which have been divided among the members.

What Has Been Accomplished:

The Assembly succeeded in getting the different parties to meet and discuss alternatives for resolving disputes.

How Participants View Effectiveness, Success:

Although a process based on consideration of all interests in a watershed is necessarily complicated, the process forces group members to consider other interests besides their own.

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EAGLE RIVER, COLORADO

EAGLE RIVER MANAGEMENT PLAN

Background:

In January 1994, Eagle County organized the Eagle River Management Plan Group (Eagle Group) to address concerns regarding the Eagle River watershed. The county began conducting a survey of watershed resources and then petitioned the National Park Service for a grant to prepare an Eagle River Management Plan (Plan).

Location and Scale of Watershed:

The Plan addresses the entire Eagle River basin, which is located entirely within Eagle County from the Climax Mine to the Town of Dotsero, where the Eagle River flows into the Colorado River.

Participants:

The Eagle Group participants include Eagle County, municipalities within Eagle County, rafters, fishermen, private land owners, Colorado Division of Wildlife, Northwest Colorado Council of Governments Water Quality Program, Colorado Water Conservation Board, Upper Eagle Valley Sanitation District, Colorado River Water Conservation District, U.S. Natural Resources Conservation Service, U.S. Bureau of Reclamation, National Park Service, U.S. Forest Service, Eagle River Environmental Business Alliance and citizens.

Problems Involved:

The Plan addresses water quality, water supply, land use, recreation and wildlife issues in the Eagle River basin.

Activities:

The Eagle Group has worked primarily on a comprehensive management plan for the Eagle River basin. The Plan will be integrated into the work programs of the participating governments and agencies where appropriate.

Processes:

The Eagle Group met regularly from January to May 1994. From June through October 1994, five subcommittees met to discuss their assigned topics: wildlife, water supply, water quality, land use and recreation. Questionnaires were mailed out and public meetings were held in order to get public input.

Using public input and the draft chapters compiled by the subcommittees, a Planning Committee met to review the Plan in November and December of 1994. The first official draft of the Plan was released for public review in January 1995. Participating local government entities began adopting the Plan in the fall of 1995. Once all counties and towns have adopted the plan, a memorandum of understanding is expected to be signed by participating federal agencies.

Goals:

The Plan outlines three goals: (1) ensure optimum flows in the watershed to maintain a healthy and naturally self-sustaining trout population, as an indicator species of a healthy aquatic ecosystem; (2) improve the community's comprehensive understanding of water quantity issues and (3) develop a comprehensive planning strategy to meet long-range water demands while protecting and enhancing the ecosystem, recreation and aesthetics.

Funding:

The Plan is funded in part through a grant from the National Park Service.

What Has Been Accomplished:

The Plan has been completed and has been adopted by several local entities.

Contact and Source:

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Eagle River Management Plan Group, Eagle River Watershed Plan, Final Draft for Review and Comment, Aug. 11, 1995.

SAN MIGUEL RIVER, COLORADO

SAN MIGUEL RIVER COALITION

Background:

The San Miguel River originates in the San Juan Mountains just above the Town of Telluride, which sits at an elevation of approximately 8,800 feet. The rapid growth and development in San Miguel County not only impacts the San Miguel River around Telluride, but also impacts the river downstream from Telluride around the towns of Placerville and Norwood.

In 1991, the Telluride Institute, a nonprofit organization, brought together government agencies and private interests who were engaged in management decisions affecting the health of the San Miguel River basin. The purpose of the meeting was to explore the possibility of organizing a San Miguel River basin study. As a result of this initial meeting, the San Miguel River Coalition (Coalition) formed and continues to meet regularly.

The U.S. Bureau of Land Management (BLM) owns most of the land along the San Miguel River. The U.S. Forest Service and The Nature Conservancy also own a significant amount of land along the river.

Location and Scale of Watershed:

The San Miguel River's headwaters are above the Town of Telluride. From Telluride, the river runs west for eighty miles to its confluence with the Dolores River. The Coalition addresses issues affecting the entire river basin, but it focuses its efforts on the upper portion of the basin where the growth and development is occurring.

Participants:

Members of the Coalition include the BLM, U.S. Forest Service, San Miguel County, Town of Telluride, Telluride Mountain Village Metro District, The Nature Conservancy, Colorado Division of Wildlife and individuals and organizations from the private sector.

Problems Involved:

The rapid development in Telluride has resulted in problems, including inappropriate recreational uses, that are causing erosion, sanitation problems and wildlife habitat destruction. Additionally, the severe housing shortage in San Miguel County has led many service sector employees to live for extended periods of time along the river, which adds to the destructive impact.

Activities:

The Coalition organized a River Ranger Program, as one of its first projects. The River Ranger, hired through the U.S. Forest Service, educates the public, monitors the river, documents problems and notifies the appropriate agency when enforcement is necessary. Specific activities of the River Ranger include working with campers, teaching school children, producing an informational video and discussing problems with private landowners.

Other Coalition activities include a Leave No Trace Campaign, which seeks to educate the public on minimum impact recreation, and an Adopt A River Program, which enlists active citizen stewardship for the river. The Green Bucks Program pays volunteers who give their time to river cleanups with a green buck which allows the volunteer to attend a local summer concert for free. Several water quality projects are also under way.

In addition, the Coalition is preparing the San Miguel Multi-Objective Watershed Plan with the help of several state and federal agencies. The project is using a basin planning focus and is the Coalition's primary effort for 1995.

Processes:

The Coalition meets quarterly. The Telluride Institute facilitates the meetings and provides some staff support. Coalition members have agreed that in order to promote candid discussion and collaborative problem solving their meetings will not be open to the public.

Goals:

According to the Coalition mission statement, the group seeks to coordinate efforts and information for the long-term health of the river and its ecosystems.

Funding:

All Coalition members contribute financial resources for meetings and projects. Additionally, the group has received some small grants. The River Ranger is employed through the U.S. Forest Service, but all the other members donate funds as well. According to the Telluride Institute, funding has been a challenge for the Coalition.

What Has Been Accomplished:

The Coalition has succeeded in getting together individuals, organizations and decision makers who affect the San Miguel River. The Coalition fosters communication and information sharing among its members, which otherwise might not occur.

How Participants View Effectiveness, Success:

Members participate in the Coalition to receive information not available elsewhere, to protect their interests when controversial issues are discussed and to improve or maintain their public relations by showing concern for the San Miguel River basin.

The River Ranger program has proved popular among Coalition members and the community in general. As a result, the program has been a rallying point for Coalition members.

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UPPER COLORADO RIVER BASIN: COLORADO, UTAH AND WYOMING

RECOVERY IMPLEMENTATION PROGRAM FOR ENDANGERED FISH SPECIES IN THE UPPER COLORADO

Background:

Four fish species, the Colorado squawfish, razorback sucker, humpback chub and bonytail chub, have been listed as endangered under the Endangered Species Act. The U.S. Fish and Wildlife Service issued a number of biological opinions and concluded that the impacts of water projects along the Colorado River and their associated flow depletions would jeopardize the endangered fish. As a result, protecting the endangered species threatened to embroil all interested parties in a confrontation between resource protection and resource development.

In order to resolve the controversy over the endangered species, water and power users, environmentalists, the U.S. Department of the Interior and three states, Colorado, Utah and Wyoming, entered into discussions. They sought to both protect and increase the populations of the endangered fish and allow additional water development projects in the upper Colorado River basin. After three years of collecting and reviewing data concerning fish and water development needs, the three state governors and the Secretary of the Interior signed a Cooperative Agreement creating the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program).

Location and Scale of Watershed:

The Recovery Program addresses the upper portion of the Colorado River Basin upstream from Lake Powell excluding the San Juan River basin. The upper portion of the Colorado River Basin includes parts of Colorado, Utah and Wyoming.

Participants:

Recovery Program participants include the states of Colorado, Utah and Wyoming; the U.S. Fish and Wildlife Service; U.S. Bureau of Reclamation; Western Area Power Administration; upper Colorado River basin water users and conservation organizations.

Problems Involved:

Four fish species in the Colorado River system are listed as endangered under the Endangered Species Act. The Recovery Program attempts to resolve the conflict between restoring and maintaining river flows for fish habitat and diverting the water for human uses.

Activities:

Two major plans outline the Recovery Program activities. First, a Recovery Action Plan (Action Plan) sets forth the long-range goals and projects for the next five to eight years. The Action Plan summarizes schedules, plans and major tasks for each basin within the watershed. Second, an Annual Work Plan is drafted each year specifying which projects will be implemented that year and the method of implementation.

The Recovery Program involves several categories of activities: habitat management (modifying dam operations to accommodate fish needs), habitat development and maintenance (developing backwaters for spawning and nursery habitat), native fish stocking, nonnative species and sport fishing (educating the public regarding the need to conserve endangered fish species) and research and monitoring (tracking the progress of the recovery).

Processes:

The Cooperative Agreement established an Implementation Committee consisting of representatives from the Fish and Wildlife Service, Bureau of Reclamation, Colorado, Wyoming, Utah, Western Area Power Administration, a conservation organization representative and a water development interests representative. Additionally, the Colorado River Energy Distributors Association and the Program Director from the Fish and Wildlife Service sit on the Implementation Committee as non-voting members. All voting members of the Implementation Committee have veto power since total consensus is required for all decisions. The Implementation Committee meets several times per year to review work plans and make policy decisions.

The Managing Committee operates under the authority of the Implementation Committee and manages day-to-day operations of the Recovery Plan including the development of work plans. The Managing Committee has formed several technical advisory committees including a Biology Committee, a Water Acquisition Committee and an Information and Education Committee.

A Program Director working for the Fish and Wildlife Service provides administrative support and coordinates the implementation of the projects for the Recovery Program.

Goals:

The Recovery Program seeks to restore endangered fish species while allowing water development to proceed.

Funding:

The Recovery Program operates on an annual budget of approximately ten million dollars obtained from federal, state and private contributions. The Bureau of Reclamation, Fish and Wildlife Service, and the states of Colorado, Utah and Wyoming also provide funding.

What Has Been Accomplished:

Numerous projects and studies are under way throughout the tri-state area. While it is too early to see improvement in fish populations, many projects have been completed. A few of the accomplishments listed for 1994 include obtaining instream flow protection in Colorado, getting legal summer/fall flow protection in Utah, restoring Old Charlie Wash wetland on the Ouray National Wildlife Refuge, stocking razorbacks in the Gunnison River and studying the distribution of Colorado squawfish in the White River.

How Participants View Effectiveness, Success:

The Recovery Plan has strong support from the state governors, who are pleased with the compromise between continuing growth and development and protecting endangered fish species. However, the process is slowed by institutional obstacles on all levels. In addition, there is significant local opposition to specific projects, such as protecting instream flows under state law and controlling nonnative fish populations.

The Recovery Plan also presents challenges in that many technical uncertainties exist regarding how to solve the biological problems.

Contact and Sources:

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Denver, CO
(303) 236-2985, ext. 233

United States Department of the Interior Fish and Wildlife Service, Recovery Action Plan for the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, Sept. 8, 1994.

United States Department of the Interior Fish and Wildlife Service, Recovery Program Organization, Mission and Staffing Plan, Sept. 8, 1994.

United States Department of the Interior Fish and Wildlife Service, Recovery Program Fiscal Year 1994 Summary Report, 1994.

YAMPA RIVER, COLORADO

YAMPA RIVER BASIN PARTNERSHIP

Background:

Responding to constituent requests, a group of local government officials and staff members who comprise the Yampa Valley Economic Development Council started promoting basin-wide efforts to address growth issues facing the Yampa Valley. Although several government and nonprofit groups were struggling with various ways to handle growth issues, the lack of communication and coordination led to some duplication of efforts. Also, citizens perceived that local government was planning and studying the problems extensively, but attaining few tangible results.

In October 1994, the Council initiated the Yampa River Basin Partnership (Partnership) to coordinate the interests in the Yampa River basin. The Partnership received funding from the Great Outdoors Colorado Trust Fund to hold a basin-wide conference entitled "Shaping the Future of the Yampa River Basin: A Working Leadership Conference" in December 1994.

Location and Scale of Watershed:

The Yampa River originates in and flows through northwest Colorado before it joins the Green River within Dinosaur National Monument. While the Partnership is still defining the geographical area it plans to address, participants anticipate that Partnership activities will include the entire river basin within Colorado, including Moffat, Routt and Rio Blanco counties.

Participants:

Over 260 people attended the December 1994 conference, including a broad cross section from business, non-profit and government organizations. Government participants included government officials and employees on the local, state and federal level. Local landowners, conservation groups and community groups also took part in the conference.

Problems Involved:

The Yampa Valley faces many growth and development issues. Steamboat Springs, a resort town in Routt County, is confronting problems such as heavy traffic, high housing prices, crowded schools and escalating social services costs.

According to Wendy DuBord, Co-Coordinator of the Partnership, many community members want to act before serious problems arise so the quality of the watershed can be preserved.

Activities:

Since the Partnership is young, participants are still addressing structure and funding issues and identifying activities for the group. Currently, the Task Force, a sub-group within the Partnership, has drafted a Memorandum of Understanding (MOU) to be signed by all parties who wish to participate in the Partnership. In September, the Partnership hosted an organizational meeting at which the MOU received approval by all participants. The MOU designated representatives from different interest groups including: agriculture; environmental and conservation; business; recreation and local, state and federal government. These representatives are working on a proposal to fund a Partnership Director.

Processes:

At the December 1994 conference, participants initially attended two sessions of their choice to hear from local experts about different watershed issues. Next, the participants were broken down into fourteen small, facilitated discussion groups whose task was to discuss and brainstorm basin problems and possible solutions. From the small group sessions, eight basin-wide goals were identified.

During the second day of the conference, the small groups met again to determine ways in which the basin communities could implement the eight goals. The groups issued a mandate authorizing the creation of a Task Force that would organize and carry out specific activities to accomplish the eight goals. Approximately forty-two individuals, representing a cross section of the conference participants, volunteered to serve on the Task Force.

The Task Force uses four of its members to facilitate meetings as needed. Specific projects such as drafting the Memorandum of Understanding are assigned to smaller subgroups of eight to ten people.

Goals:

Eight goals were identified during the facilitated small group discussions at the conference:

- manage growth, development and change;
- maintain and build a healthy, diverse economy based upon responsible use of natural resources;
- protect and enhance agricultural interests;
- protect and enhance water quality and water rights;
- generate interagency and intergroup collaboration;
- protect and enhance our quality of life;
- protect and enhance our natural resources and
- review existing regulations and determine ways to accomplish desired goals through incentives.

Funding:

The Partnership received a grant from Great Outdoors Colorado Trust Fund to pay approximately one third of the conference costs. Additionally, many conference participants contributed money and other resources to cover conference expenses. The Task Force is currently working to secure additional funding to pay for the future activities of the Partnership.

What Has Been Accomplished:

When planning the conference, the Partnership leaders hoped to get 100 to 150 participants and were delighted when over 260 people attended.

How Participants View Effectiveness, Success:

The Partnership is off to a strong and fast-paced start because of the extraordinary interest and support from local, state and federal levels. The local political climate appears very receptive to the idea of using a basin-wide approach to solve problems.

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Deborah Frazier, Conferees Grope Toward Shared Vision, Rocky Mtn. News, Dec. 6, 1994.

Heather A. Resz, Yampa Conference Identifies First Step, Northwest Colo. Daily Press, Dec. 7, 1994.

GILA RIVER: NEW MEXICO AND ARIZONA

GILA MONSTER INTERSTATE WATERSHED MANAGEMENT (MULTI-MULTI) PROGRAM

Background:

The Arizona Department of Environmental Quality, the New Mexico Department of Environment, the U.S. Environmental Protection Agency (EPA), and various other federal, state, tribal and local entities interested in the Gila River watershed organized a multi-state, multi-regional effort to implement a nonpoint source water quality watershed program. These entities formed the Gila Monster Interstate Watershed Management Program (Multi-Multi Program) because the different agencies and government entities were not working together on water quality issues.

Additionally, state agencies and local organizations involved in the Gila River watershed expected the Clean Water Act Reauthorization to replace voluntary nonpoint source water quality programs with regulatory requirements. Consequently, the groups wanted to coordinate planning efforts and address water quality issues before any anticipated federal laws and regulations were created dictating water quality solutions.

Location and Scale of Watershed:

The Multi-Multi Program addresses the Gila River basin from the headwaters in the southwest portion of New Mexico to approximately fifty miles inside the Arizona border. The river segment below this point was considered too degraded to be included in the project area; the project area encompasses about 3,200 square miles.

Participants:

Participants in the Multi-Multi Program include the U.S. Forest Service, The Nature Conservancy, Friends of Cold Creek, U.S. Natural Resources Conservation Service, Catron County, Graham County, Eden Water Company, Arizona State Lands Department, Arizona Department of Environmental Quality, Phelps Dodge-Chino, Chino Mines Company, New Mexico Department of Agriculture, U.S. Bureau of Land Management, EPA, New Mexico Department of Environment, University of Arizona Extension Office and AZCO Mining Company.

Problems Involved:

The Multi-Multi Program primarily addresses water quality issues. Specific water quality problems include toxins leaching from abandoned mines, algae accumulation, erosion from road construction, domestic trash from recreation uses, urban run-off and other contamination from mining operations.

Degradation of riparian areas, overgrazing and unstable stream banks were also identified as watershed problems.

Activities:

The Multi-Multi Program participants meet several times a year. Meetings include informational presentations and discussions on specific watershed issues. In addition, advisory groups addressing specific areas within the Gila River watershed meet regularly. Advisory group activities include evaluating and monitoring water quality problems, identifying abandoned mines, writing proposals to fund projects, organizing field trips to various watershed sites and discussing watershed problems and possible solutions.

Processes:

The Multi-Multi Program has formed several advisory groups that address specific areas within the Gila River watershed. These areas include the San Francisco Basin, the Upper Gila Basin and the Lower Gila Basin. Additionally, a Gila Watershed Coordinating Group organizes and coordinates resources, advisory groups and data collection and implementation. Public participation is encouraged at all Multi-Multi Program meetings and advisory group meetings.

Goals:

The mission of the Multi-Multi Program is "to develop a coordinated interstate *inter-regional* effort to implement partnering based Water Quality Programs for Holistic Watershed Management of the Gila Watershed."

Funding:

The Multi-Multi Program relies heavily on volunteer efforts. Advisory groups are writing proposals for funding of specific projects.

What Has Been Accomplished:

The Multi-Multi Program is still in the planning stages, but the goals and infrastructure of the effort are established.

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Gila Monster Interstate Watershed Management Program, Meeting Minutes, Nov. 1993 - Jan. 1995.

ZUNI RIVER, NEW MEXICO

ZUNI CONSERVATION PROJECT

ZUNI RIVER WATERSHED PROJECT

Background:

In 1981, the Pueblo of Zuni brought an action against the federal government for damages related to logging and agricultural practices. After ten years of litigation, the suit was settled through the Zuni Land Conservation Act of 1990 (Conservation Act). The Conservation Act established a \$17 million trust fund and required the Zuni Tribe to prepare a plan for rehabilitating Zuni lands, which was completed by November of 1993.

Recognizing that implementation of a watershed management plan within the Zuni Indian Reservation would be ineffective without a corresponding upstream plan, Congress passed the Zuni River Watershed Act of 1992 (Watershed Act). The Watershed Act calls for federal agencies and tribal representatives, in cooperation with the state and private landowners, to prepare a plan to protect and rehabilitate cultural and natural resources on both public and private lands in the watershed.

Location and Scale of Watershed:

The Zuni Conservation Project under the Conservation Act applies only to the Zuni Indian Reservation located in western New Mexico south of Gallup. The Watershed Act addresses a 400,000 acre area from the eastern boundary of the Zuni Reservation to the Continental Divide in western New Mexico. The southern boundary of the watershed is located just north of Candy Kitchen to just north of Cerro Alto on the Ramah Navajo Reservation. The northern boundary runs just south of Vanderwagon and just north of McGaffey.

Participants:

The Watershed Act requires cooperation among the following agencies and groups: the Pueblo of Zuni, private landowners, U.S. Forest Service, U.S. Natural Resources Conservation Service, U.S. Bureau of Indian Affairs, State of New Mexico, Ramah Band of the Navajo Tribe and the Navajo Nation.

Problems Involved:

Both the Conservation Act and the Watershed Act were passed in response to litigation brought by the Pueblo of Zuni against the federal government regarding logging and agricultural practices that had resulted in land damages on the Zuni Reservation.

The Watershed Act identified the following potential problems in the watershed: severe erosion of agricultural and grazing lands, reduced productivity of renewable resources, loss of nonrenewable resources and loss of surface water. The Watershed Act also requires the protection and management of cultural resources in the watershed.

Activities:

The Zuni Conservation Project is currently implementing the Zuni Resource Development Plan. Specific activities of the Zuni Conservation Project include establishing a seed bank to preserve varieties of plants used in traditional practices, implementing environmental projects, addressing religious and sport hunting needs and studying photovoltaic energy for use in remote areas.

The Watershed Act requires only the preparation of a watershed plan. Implementation will follow if the plan is acceptable to the participants, but implementation is not required by the Watershed Act. Activities include a survey of natural and cultural resources in the watershed, as required by the Watershed Act.

Technical Teams are conducting inventories of range land, forestry land, wildlife, agriculture/cropland and hydrology/erosion effects. The Social and Economic Values Technical Team plans to meet with individual landowners to determine their needs and values with respect to the watershed. In addition, the Cultural Values Technical Team is collecting information on the issues of concern to the six identified cultural groups in the area. The Archaeology Technical Team is researching archaeological sites in the state data base and will use the natural resource inventory data to help identify sites in need of protection or rehabilitation.

Finally, a Zuni River Watershed Project newsletter is sent to approximately 850 private landowners in the watershed on a regular basis.

Processes:

In late 1992, federal, state and local agencies, tribes and legislators attended an organizational meeting and adopted the following organizational structure for implementing the Watershed Act.

An Advisory Committee, consisting of agency leaders, landowner organization representatives and tribal leaders, provides guidance and recommendations on projects. The Work Group, consisting of one representative from each of the eight groups named in the Watershed Act, makes management decisions in order to keep the project moving forward. The Technical Teams, consisting of experts from participating groups, determine how to satisfy the scientific and technical requirements of the Watershed Act and also make recommendations to the Work Group on work items and methods. A coordinator serves as a link between the Technical Teams and between the Technical Teams and the Work Group. All decision making is by consensus.

The Watershed Act requires the development of management guidelines and recommendations for watershed protection and rehabilitation on private and public lands. In addition, proposals for voluntary, cooperative programs that implement the recommendations and a monitoring plan to evaluate the results are also required. The watershed plan must be submitted to Congress by September 30, 1997.

Goals:

The Watershed Act requires a Work Group to formulate a plan "for the management of natural and cultural resources . . . within the Zuni River watershed and upstream from the Zuni Indian Reservation." The plan must include the following components: (1) a watershed survey describing current natural and cultural resource conditions; (2) recommendations for watershed protection and rehabilitation on both public and private lands; (3) management guidelines for maintaining and improving the natural and cultural resource base; (4) a system for monitoring natural and cultural resource conditions and (5) proposals for voluntary cooperative programs to implement the plan when developed.

Funding:

The Conservation Act established a \$17 million trust fund from which the interest will be used to perpetually fund The Zuni Conservation Project.

Congress appropriated \$300,000 in 1994 and another \$300,00 in 1995 to enable the Work Group to accomplish the requirements under the Watershed Act. The Work Group submitted its 1996 budget to Congress requesting \$537,000.

What Has Been Accomplished:

Pursuant to the Conservation Act, the Zuni prepared a plan entitled "The Zuni Resource Development Plan: A Program of Action for Sustainable Resource Development." The goal of this plan is to restore traditional Pueblo agricultural practices. The Zuni Conservation Project has grown from two members to over seventy staff people, who are now implementing the plan.

The Work Group and Technical Teams established under the Watershed Act are meeting regularly and are making progress on resource sampling for the Zuni River Watershed Project.

How Participants View Effectiveness, Success:

According to the coordinator of the Zuni River Watershed Project, the participating agencies and organizations are beginning to think in terms of cooperative management. Also, consensus decision making is working well. Although the Work Group and Technical Team participants have diverse backgrounds and interests, all the participants eventually agree on a course of action.

Contact and Source:

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Zuni Watershed Project Office, "Zuni River Watershed Act," Update, Sept. 1994.

VIRGIN RIVER, UTAH

SOUTHWEST UTAH PLANNING AUTHORITIES COUNCIL

Background:

In early 1994, the Utah Governor's Office convened the Southwest Utah Planning Authorities Council (SUPAC) to coordinate activities along the Virgin River within the State of Utah.

Location and Scale of Watershed:

The Virgin River originates in southern Utah's high plateaus, flows through Zion National Park, passes through the scenic Strip region of extreme northwest Arizona and eventually empties into Lake Mead. SUPAC addresses the Virgin River basin within Utah, which includes all of Washington County and parts of Iron and Kane counties.

Participants:

Federal and Indian participants include: Forest Service, Bureau of Land Management, National Park Service, Natural Resources Conservation Service, Fish and Wildlife Service, Army Corps of Engineers, Bureau of Indian Affairs and the Paiute Tribe.

State participants include: Department of Agriculture, Department of Natural Resources, Department of Transportation, Department of Community and Economic Development, Department of Environmental Quality and the Governor's Office.

Local participants include: Washington County, Washington County Mayors Association, Five County Association of Governments, Iron County, Kane County and Washington County Water Conservancy District.

Problems Involved:

Many areas of the Virgin River watershed are experiencing rapid population growth, which is creating more demands on municipal and industrial water supplies. As a result, conflicts are emerging between environmental interests and water development interests, and Utah's current water applications exceed existing supplies. Additionally, water quality suffers from various pollutants, including animal wastes, pesticides, fertilizers and heavy metals.

SUPAC addresses the following issues: water development, wild and scenic rivers, wilderness, the special status of the desert tortoise species, the Andalex Coal project, economic development, resource development, residential development, transportation improvements, tourism and land tenure adjustments.

Activities:

SUPAC is investigating the eligibility and suitability of Utah rivers for the national Wild and Scenic Rivers System. In addition, SUPAC is drafting a Spinedace Habitat Conservation Agreement and assembling a data catalog on watershed information.

Processes:

The Utah Governor, who also serves as SUPAC's chair, appointed a vice chair to coordinate SUPAC's activities and conduct meetings in the Governor's absence. SUPAC meets quarterly or more frequently as needed. The vice chair employs staff members and maintains an office in order to carry out SUPAC activities. Topical Advisory Groups advise and assist SUPAC on specific issues, topics and problems.

Participants signed a Memorandum of Cooperation and a data sharing agreement in February 1994.

Goals:

SUPAC's goals are to:

- minimize duplication of efforts, expenditures and proceedings with respect to the planning processes of the participants;
- facilitate the establishment of shared goals and strategies for resource management and development;
- promote awareness and understanding of the legal requirements and objectives that motivate the planning processes of the various participants;
- enhance intergovernmental cooperation and public participation in addressing issues that relate or affect the stewardships of more than one participant;
- serve as a non-binding forum for the discussion and consensual resolution of issues, grievances, misunderstandings and disputes among the participants and
- serve as a clearinghouse for the exchange of information relevant to the planning processes of the participants.

Funding:

SUPAC charges a fee to be on its mailing list. Various participants, including the Utah Governor's Office, contribute in-kind services and resources.

What Has Been Accomplished:

Several SUPAC participants entered into an interagency agreement to cooperate in assessing the eligibility and suitability of Utah rivers for the national Wild and Scenic Rivers System. SUPAC participants put together an electronic bulletin board to facilitate data exchange between participants.

How Participants View Effectiveness, Success:

According to observers and participants, SUPAC participants are able to discuss difficult subjects candidly and productively at SUPAC meetings.

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LA BARGE CREEK, WYOMING

LA BARGE WATERSHED COOPERATIVE MANAGEMENT PROJECT

Background:

The La Barge Watershed Cooperative Management Project (Project) began in 1992 with the Bring Back the Natives program, which focuses on restoring native cutthroat trout subspecies in the West. The Project is spearheaded by several chapters of Trout Unlimited, particularly the Wyoming Council and the Oakbrook, Illinois Chapter.

Location and Scale of Watershed:

La Barge Creek originates in the Wyoming Range in western Wyoming and flows approximately fifty miles before emptying into the Green River just above Fontenelle Reservoir. The project area includes the entire La Barge drainage area encompassing public and private lands and including both Lincoln and Sublette counties.

Participants:

Project participants include the Uinta (Wyoming) Chapter of Trout Unlimited, Oakbrook (Illinois) Chapter of Trout Unlimited, Wyoming Council of Trout Unlimited, U.S. Bureau of Land Management, Wyoming Game and Fish Department, U.S. Forest Service and individuals with grazing permits.

Problems Involved:

Habitat degradation and introduction of exotic species, such as rainbow trout, brown trout and brook trout, have severely diminished the Colorado River cutthroat populations. The Project addresses the restoration of the native Colorado River cutthroat trout and overall watershed health.

Activities:

A cooperative management agreement plan was developed under the leadership of the National Forest Service. Activities during 1995 included: (1) analyzing the effects of camping on National Forest Service lands; (2) identifying sites for experimental enhancement of spawning gravel; (3) developing an Allotment Management Plan for La Barge grazing allotment; (4) conducting fish surveys and (5) installing fencing to protect riparian areas.

Processes:

Project participants meet formally twice a year and use telephone conferences to keep in touch between meetings. Meetings are run informally, and decisions are made by consensus of all the participants.

Goals:

The main objective of the Project is to restore the Colorado River cutthroat populations in La Barge Creek. Other objectives include:

- achieve ninety percent natural bank stability of all streams;
- manage/maintain vegetative communities to enhance watershed function and reduce erosion;
- control/manage beaver population and
- maintain existing uses.

Funding:

Cost estimates to implement a ten year plan to enhance trout habitat exceed one million dollars. The National Fish and Wildlife Foundation has agreed to match nonfederal contributions on a fifty percent basis. Additionally, each participating agency and Trout Unlimited have provided funds.

What Has Been Accomplished:

The Project has introduced the concept of watershed management to the local public and educated a number of citizens about the importance of restoring the native Colorado River cutthroat. Four fish migration barriers have been installed to protect the genetic purity of the cutthroat. Additionally, nonnative trout have been removed from tributaries, and erosion control work has started on La Barge Creek.

How Participants View Effectiveness, Success:

Both the U.S. Forest Service and Trout Unlimited are pleased with the Project's progress and accomplishments.

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MISSOURI RIVER BASIN

Clear Creek, CO
South Platte River, CO
Big Spring Creek, MT
Greater Yellowstone: MT, ID, WY^{*}
Muddy Creek, MT
Musselshell River, MT

^{*} The Greater Yellowstone Coalition covers an area that is located primarily in the Missouri Basin and also includes portions of the Columbia Basin, the Colorado Basin and the Great Basin.

CLEAR CREEK, COLORADO

CLEAR CREEK WATERSHED FORUM

Background:

The U.S. Environmental Protection Agency (EPA) began examining Clear Creek's problems from a watershed perspective when it chose Clear Creek for a watershed pilot program. The EPA organized a group called the Clear Creek Coordinating Council (Council) and invited businesses, environmental groups and other government agencies to form a steering committee for the Council.

However, according to Holly Flinau, the EPA Clear Creek Watershed contact, the Council failed because residents of the Clear Creek watershed did not want the EPA involved in the management of the basin. In response, the Council changed its name to the Clear Creek Watershed Forum (Forum) and focused solely on organizing public conferences on Clear Creek watershed issues.

Location and Scale of Watershed:

The watershed includes Clear Creek and all of its tributaries from the headwaters near Loveland Pass to its confluence with the South Platte River. The area spanned by the watershed covers approximately 600 square miles and includes 13 communities.

Participants:

The Forum Planning Committee includes approximately twenty-five members representing industry, municipalities, counties, professional organizations, environmental groups, government agencies and landowners. The major players are Coors, the Colorado Department of Health, a Clear Creek County Commissioner and EPA. The public conferences are open to anyone interested in attending.

Problems Involved:

The Clear Creek watershed faces water quality problems resulting from previous mining activities, recent development activities and wastewater discharges. Also, Forum participants are concerned about wildlife habitat degradation and the general health of the watershed.

Activities:

The Forum organizes and sponsors public conferences on Clear Creek issues. The first conference was held in May 1993 and included speakers such as Governor Romer and actor Dennis Weaver. The purpose of the first forum was to discuss the values of Clear Creek and the need for a watershed management approach. The theme of the second forum held in October 1993 was "Plans, Projects and Possibilities." Recently, the Forum hosted a reception for all elected officials in the Clear Creek basin. This was the first time the officials had met together.

The public conferences provide an opportunity for people to network and collaborate on projects. Some of the projects initiated through the Clear Creek Conferences include an emergency dial-down system to inform downstream users of spills, stream and wildlife habitat restoration activities, a tailings capping project at the McClelland Mine site and trail construction projects.

The National Forum on Nonpoint Pollution (NFNP) designated the Forum's "Adopting Orphan Sites for Credit Program" as an official NFNP project. Formed at the request of the Conservation Fund and the National Geographic Society, the NFNP lends its name and project endorsement to a select group of projects. The "Adopting Orphan Sites for Credit Program" will try to find market incentives that will encourage private sector companies to adopt a site for cleanup. The Clear Creek basin will be the test area for the project. The project endorsement has resulted in contributions from Coors and the EPA.

Processes:

A coordinator from the Colorado Department of Health leads the Forum Planning Committee, which meets approximately every other month. Brainstorming sessions were conducted at the public conferences to identify possible projects the Forum, with EPA funding, could sponsor.

Conference participants often organize informal meetings when they decide to collaborate on projects. For example, a McClelland group formed to discuss EPA's proposed site remediation plan at the old mine site. As a result of the group's recommendations, the EPA changed its remedial design from excavation and landfilling to capping in place. The group also arranged for Coors to install a boat launch and the Colorado Division of Minerals and Geology to restore wetlands at the McClelland site.

Goals:

The initial goals of the group were to improve water quality and habitat, to raise awareness of watershed and ecosystem issues and to create common data bases. The group scaled back its mission when it turned toward organizing public conferences. The Forum avoids the hot topics that continue to divide upstream and downstream users, such as nutrient loading problems in Standley Lake and minimum stream flow requirements. Instead, the purpose of the Forum is to interest people in thinking about and discussing watershed issues.

Funding:

EPA provides funding for the public conferences. Additionally, Coors funds a quarterly newspaper describing projects and proposals in the watershed.

What Has Been Accomplished:

The first conferences were well attended and considered successful. The influence of the conferences can also be measured by the projects and cooperative agreements that resulted. The EPA has identified twenty-five projects that were directly or indirectly initiated through the conferences.

How Participants View Effectiveness, Success:

The Forum Planning Committee often discusses whether it should expand its role in managing the watershed or limit its role to planning public conferences. The EPA has learned not to extend its reach to the point of infringing on local governments and interest groups, and the Forum Planning Committee must be careful not to compromise the trust it has established.

Actual projects, rather than additional meetings and discussions, may be required to maintain the momentum and hold the group together. However, coalitions and cooperative agreements have formed as a result of the Forum's role in bringing together the various interests in the watershed.

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SOUTH PLATTE RIVER, COLORADO

SOUTH PLATTE FORUM

Background:

In 1990, seven organizations began sponsoring an annual South Platte River Forum (Forum) open to anyone interested in South Platte River basin issues. The Forum seeks to improve communications and information-sharing among parties with interests in the South Platte River basin.

Location and Scale of Watershed:

The Forum addresses the entire South Platte River basin including the Cache La Poudre River and Clear Creek.

Participants:

The co-sponsoring organizations of the Forum are: the Colorado Water Resources Research Institute, Colorado Division of Wildlife, Denver Water Department, Northern Colorado Water Conservancy District, U.S. Environmental Protection Agency, U.S. Geological Survey and U.S. Fish and Wildlife Service.

The Forum participants include private landowners, municipalities, academic interests, attorneys, and federal and state agencies. To date, environmental and recreation groups have not participated in the Forum.

Problems Involved:

Problems frequently discussed in the Forum include endangered species issues, water quality issues and federal activities, such as U.S. Forest Service special use permits.

Activities:

Every two months, the sponsoring organizations hold an organizational meeting. An annual public forum is the sole activity of the group, and the purpose of the Forum is to exchange information among those interested in the South Platte River watershed. Invited speakers submit papers to the sponsoring organizations and present them at the Forum.

Processes:

The sponsoring agencies hire one staff coordinator who works ten months out of the year to organize the Forum. According to Kathleen Klein, a former staff coordinator, a new format may be implemented in the future that would create a more interactive Forum. Panel talks or roundtable discussions are among the suggestions under consideration.

Goals:

The Forum seeks to encourage information-sharing and better communication among interested parties along the South Platte River.

Funding:

Funding comes from Forum registration fees and the sponsoring organizations, who contribute either cash donations or in kind services.

What Has Been Accomplished:

The Forum has succeeded in providing information and attracting a diverse audience.

How Participants View Effectiveness, Success:

Some participants believe the Forum must switch to a problem solving role and become more active in addressing specific issues in the watershed. The sponsoring organizations generally believe the current role of the Forum is appropriate and should not be modified.

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BIG SPRING CREEK, MONTANA

BIG SPRING CREEK WATERSHED WATER QUALITY PROJECT

Background:

The Fergus County Conservation District (District) initiated the Big Spring Creek Watershed Water Quality Project (Project) with the cooperation of local landowners. In 1988, the District sponsored a demonstration project restoring vegetation along the stream bank, which was stripped due to livestock grazing. Through this demonstration project, along with public tours and landowner workshops, the District worked to educate the public about stream conditions and livestock grazing practices.

In 1990, the District conducted a physical inventory of natural resources along Big Spring Creek, which gave the District accurate information on what problems existed in the basin. Soon afterwards, the District held a public meeting to inform citizens of the inventory results and began organizing the Project.

Location and Scale of Watershed:

Approximately 250,000 acres in Fergus County drain into Big Spring Creek. The thirty-mile long creek originates in the Snowy Mountains and flows into rolling foothills and then shale soil in lower land before emptying into the Judith River. Until recently, the Project has focused on a small section of the basin located around the City of Lewiston. However, the District is expanding its efforts to include the entire 250,000 acre watershed.

Participants:

Project participants include the District; private landowners living along the Big Spring Creek; Montana Department of Fish, Wildlife, and Parks; U.S. Fish and Wildlife Service; U.S. Natural Resources Conservation Service; Montana Department of Health and Environmental Sciences, Division of Water Quality; Montana State Extension Service; U.S. Environmental Protection Agency (EPA) and Trout Unlimited.

Problems Involved:

The Project primarily addresses water quality problems, particularly sedimentation caused by stream bank erosion, channel alteration, deterioration of riparian vegetation and agricultural activities. Herbicides and nutrients from agricultural runoff also contribute to water quality problems.

Activities:

The District organizes the planning and implementation of Project restoration activities designed to reduce stream bank erosion. For example, fencing is installed to protect riparian areas and provide for suitable livestock grazing. Severely eroded stream banks are restored through willow cutting, sod transplanting and willow clump transplanting. The Project has also undertaken some wetland development activities near the City of Lewiston.

Additionally, the Project sponsors public workshops designed to educate landowners about riparian area management practices.

Processes:

A Steering Committee consisting of landowners and citizens from Lewiston meets three times a year to discuss Project activities, set priorities and review landowner applications for restoration projects along the creek.

Currently, the District is expanding the Project to cover the entire Big Spring Creek watershed. The District notified key landowners and community leaders within the watershed and started holding public meetings to discuss organizing a comprehensive watershed management effort. Because of the rapid growth in Fergus County, citizens have initiated more intensive community and land use planning efforts. The District hopes to integrate the Project with the community planning efforts.

Goals:

The goal of the Project is to improve and maintain water quality in the watershed for all users. Specific goals include completing the stream restoration, channel stabilization and riparian vegetation in the Big Spring Creek basin.

Funding:

EPA has provided most of the funds for the Project under section 319 of the Clean Water Act. The U.S. Fish and Wildlife Service provided funds for wetlands development, and private landowners contributed funds and resources for specific projects.

What Has Been Accomplished:

The Project has secured strong support and participation from landowners along the creek. The restoration activities, including the installation of physical structures, appear to be effective in reducing the erosion and sediment problems.

How Participants View Effectiveness, Success:

The District's firm position in protecting the private property rights of landowners has helped secure landowner support for the Project.

Contact and Source:

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Fergus County Conservation District, Project Summary Sheet for the Big Spring Creek Watershed Water Quality Project (Lewiston, Mont.).

GREATER YELLOWSTONE: MONTANA, IDAHO AND WYOMING

GREATER YELLOWSTONE COALITION

Background:

In 1983, several grassroots and national organizations formed the Greater Yellowstone Coalition (GYC) to address the Greater Yellowstone area. Although many organizations and government agencies address specific areas or issues in Greater Yellowstone, many organizations agreed that a single entity should oversee activities occurring in the entire area.

Location and Scale of Watershed:

The Greater Yellowstone region encompasses approximately 28,000 square miles in parts of Montana, Idaho and Wyoming. The area includes seven National Forests, Yellowstone National Park, Grand Teton National Park, three wildlife refuges and significant amounts of private property. GYC defined the boundaries of Greater Yellowstone by using information on plant and animal distribution, climate, geology, hydrology, topography and geothermal features.

Participants:

The GYC began as a group of organizations but has expanded its membership to include individual members in all parts of the country. Currently, the GYC consists of approximately 100 member organizations and over 6,500 individual members.

Problems Involved:

The GYC examines many issues affecting private and public lands, as well as human and natural resources in Greater Yellowstone. Public land issues include the adverse effects of past and current mining, timber harvesting and grazing activities. The GYC also works on community growth and development issues arising from activities on private lands. Finally, wildlife population and habitat issues, which affect both public and private lands, remain important to GYC members.

Activities:

The GYC has undertaken a campaign to halt a gold mine near Cooke City, Montana proposed by Noranda Minerals of Canada. Other activities include efforts to stop drilling activities that threaten the geothermal sites in Yellowstone National Park and to protect the grizzly bear, elk, bison, bald eagles and other wildlife species. The GYC has also participated in wolf reintroduction projects.

MUDDY CREEK, MONTANA

MUDDY CREEK PROJECT

Background:

For several years, landowners met and conducted numerous studies concerning Muddy Creek's water quality problems. However, discussions over water quality issues usually led to discouragement and disagreement over who was to blame. The frustration over water quality problems escalated to the point where the only available option appeared to be litigation.

The turning point came when a news story, reporting on two people retracing Lewis and Clark's expedition, showed the poor condition of the Sun River, a tributary within the Muddy Creek watershed, which used to be crystal clear. The news coverage served as an impetus for state action, and in 1992 the Montana Department of Natural Resources and Conservation organized a public meeting to discuss possible solutions. Out of this initial gathering, the Muddy Creek Task Force was formed.

Location and Scale of Watershed:

Muddy Creek originates north of Fairfield and flows southeast for forty miles to its confluence with the Sun River approximately ten miles northwest of Great Falls. Muddy Creek drains approximately 314 square miles of agricultural land.

Participants:

The Task Force membership includes the Montana Wildlife Federation, Medicine River Canoe Club, Greenfields Irrigation District, local soil conservation districts, other irrigation districts, Cascade County, City of Great Falls, Montana Power Company, Trout Unlimited, National Audubon Society, recreational interests, property owners in the Muddy Creek basin and state legislators.

Since the Task Force is intended to be a local citizens group, representatives from federal and state agencies are not voting members. Instead, they serve as consultants. Agency participants include the Montana Department of Health and Environmental Sciences; U.S. Bureau of Reclamation, U.S. Natural Resources Conservation Service; Department of Natural Resources and Conservation; Montana Department of Fish, Wildlife and Parks and the Agricultural Extension Service.

Problems Involved:

Muddy Creek contains a large amount of sedimentation caused by soil erosion and run-off from irrigated lands. The excessive amount of sedimentation in Muddy Creek adversely affects the water quality downstream in the Sun River and the Missouri River. Sediment concentrations exceed water quality standards for cold and warm water fish in the Sun River.

Additionally, the sedimentation harms municipal drinking water supplies and hydropower production on the Missouri River. If the problem persists, wild and scenic river reaches below Great Falls will eventually be threatened.

Activities:

The Task Force organized the construction of instream structures to slow down flows and prevent erosion. Other activities include revegetation, solicitation of public and congressional support, surveys of the creek channel and distribution of an informational pamphlet on the Muddy Creek Project.

Processes:

In structuring the Muddy Creek Project, participants recognized that everyone in the area had an interest in improving water quality and consequently invited all local residents to participate in the Task Force. The Task Force meets monthly or as often as needed, and makes decisions using consensus. Every six months, the Task Force prints a progress report, which is sent to all local citizens on the mailing list.

Meetings operate informally, and differences of opinion are discussed until consensus is reached. While the Task Force relies solely on volunteer work, government agencies have provided a large amount of information and technical assistance.

Goals:

The Task Force focuses its efforts on implementing solutions to water quality problems in Muddy Creek. The Task Force plans to:

- reduce sedimentation in the river while working to maintain a healthy agricultural economy;
- increase the health of fisheries and
- prevent future problems from arising in Muddy Creek.

Funding:

The Department of Natural Resources and Conservation, Bureau of Reclamation, Greenfields Irrigation District and recreational interests contributed funds to the Muddy Creek Project. The Cascade County Soil Conservation District manages the funds for the Task Force. The services of many volunteers allow the Task Force to function without large amounts of cash.

What Has Been Accomplished:

The Task Force drafted a plan for the basin and started implementing on-the-ground projects. Fifteen entities provided letters of support, which are used to apply for funding.

How Participants View Effectiveness, Success:

The Department of Natural Resources and Conservation provided the needed impetus to form the Muddy Creek Project. Although much remains to be done, the Muddy Creek Project has established increased trust among the parties. In order to accomplish long-term results, watershed-based groups must focus on the small victories that occur along the way.

Contact and Source:

Allan Rollo, Project Coordinator
808 52nd Street South
Great Falls, MT 59405
(406) 727-4437

Allan Rollo, Muddy Creek Project in Montana, Memorandum, June 27, 1994.

MUSSELSHELL RIVER, MONTANA

MUSSELSHELL BASIN WATER MANAGEMENT STEERING COMMITTEE

Background:

The present method of water distribution in the Musselshell Basin fails to meet all the water needs in the basin and often leaves lower basin water users with no water at all. The State of Montana constructed two reservoirs in order to address the water shortage problem. However, until recently no enforcement of water allocation agreements existed in the basin. Consequently, water users in the upper basin near the reservoirs often diverted more water than authorized under their entitlement, because the water was in the river and they saw no need to purchase additional water. As a result, water users in the lower basin often suffered severe water shortages, and significant tension arose between the upper basin and lower basin water users.

State and federal agencies threatened to intervene if the water users could not resolve the water allocation disputes. Because of their strong objection to governmental involvement in local water allocation issues, the local water users collaborated in 1993 to develop a water resource management plan.

Location and Scale of Watershed:

The Musselshell River flows approximately 360 miles from its headwaters in the Crazy, Castle and Little Belt Mountain Ranges until it empties into Fort Peck Lake and the Missouri River. The watershed encompasses approximately 12,000 square miles in central Montana.

Participants:

Participants in the Musselshell Water Management Steering Committee (Committee) include approximately thirty individuals who represent irrigation, livestock, municipal, industrial, recreation, and fish and wildlife interests.

Several state and federal agencies are also involved in an advisory capacity: the Montana Department of Natural Resources and Conservation; U.S. Bureau of Reclamation; Montana State University; Montana Department of Fish, Wildlife and Parks; Montana Department of Health and Environmental Sciences and the U.S. Natural Resources Conservation Service.

Problems Involved:

Water allocation problems dominate the Committee's concerns. Water shortages and disputes over water entitlements created severe tensions between upper basin and lower basin water users. The water rights in the basin were not enforced because water commissioners were unavailable.

Additionally, water quality concerns exist because large amounts of salt and other pollutants enter the river in return flows from irrigation channels. Under certain low flow conditions, the water becomes unsuitable for irrigation or livestock uses.

Activities:

The Committee is working on a water use management plan (Plan) for the basin. In order to gather information for the Plan, the Committee is measuring and monitoring water quality and quantity. The Committee is also developing a computerized water ordering system, which will coordinate water releases from the storage facilities.

Montana State University and the Montana Department of Natural Resources and Conservation are directing an educational program called Montana Water Courses. The University sponsors meetings throughout the basin in an effort to educate local residents and other water users on water issues and the health of the watershed.

Committee participants are restoring stream banks, which were damaged from years of artificially high water flows.

Processes:

The Montana Department of Natural Resources and Conservation initially contacted all the water rights holders in the basin and organized an informational meeting. The Committee was established to oversee watershed studies and develop a Plan, and co-chairs were elected to represent the upper and lower basins. A local rancher facilitates the Committee, and the Committee chair and the Department set agendas and prioritize issues for the Committee meetings. The Committee initially prepared a work list, which sets out tasks and delineates responsibilities for the various tasks.

Public meetings are planned to inform local residents about the Plan and to solicit public input.

Goals:

Plan objectives include:

- assess present and future water needs in the entire basin;
- address problems identified by the Committee;
- describe and discuss alternative water management or development scenarios, focusing on reservoir operation and river management plans, irrigation scheduling/water ordering, distribution system repair to reduce seepage, and enhanced communications and coordination between local water users and
- provide water scheduling tools to the state or local entities involved.

Funding:

The Montana Department of Natural Resources and Conservation and the Bureau of Reclamation contributed approximately \$300,000 for a comprehensive study of the Musselshell River basin. Additionally, the U.S. Natural Resources Conservation Service spent money conducting water quality studies in the basin. The Lower Musselshell Conservation District acquired funding through section 319 of the Clean Water Act, and individual irrigators also contributed funds.

What Has Been Accomplished:

Participants report an improvement in the method of water allocation. Lower basin water users have responded enthusiastically to the Committee's efforts. The upper basin water users are beginning to respond to requests from the lower basin users.

The Committee has completed a priority list of work to be accomplished, and water monitoring projects are making progress in gathering data.

How Participants View Effectiveness, Success:

Upper basin water users appear more responsive to pressure from lower basin water users than from state authorities.

The Montana Department of Natural Resources and Conservation functions best as a resource tool rather than as a leader in the effort. Local residents must direct the effort in order to get the participation and trust of local water users.

Contact and Sources:

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Lewiston, MT 59457
(406) 538-7459

Lower Musselshell Conservation District, River Management Tools for the Musselshell River Basin (Lower Musselshell Conservation District, Roundup, Mont.), May 1990.

Musselshell Basin Water Management Steering Committee, Musselshell River Basin Water Management Plan - Plan of Study, Mar. 1993.

ARKANSAS/RIO GRANDE RIVER BASINS

Upper Arkansas River, CO
Pecos River, NM
Upper Rio Grande, NM
Rio Puerco, NM

UPPER ARKANSAS RIVER, COLORADO

UPPER ARKANSAS RIVER WATERSHED INITIATIVE

Background:

In 1989, the U.S. Environmental Protection Agency (EPA), the Colorado School of Mines and the Colorado Department of Health held a meeting for those agencies doing water quality monitoring in the Upper Arkansas River basin. A year later, several federal and state agencies signed a Memorandum of Understanding to coordinate water quality improvement efforts in the basin.

The agencies met and organized work groups to determine how to coordinate their efforts in the watershed. When the agency group became frustrated at its inability to make progress, the group hired a local watershed coordinator through the Sangre de Cristo Resource Conservation and Development Council (Sangre de Cristo RC&D).

After four months of meetings with the Coordinator, a new Memorandum of Understanding (MOU) was written and signed by the same agencies. The MOU created a Leadership Group, which met regularly and used the Coordinator to facilitate its meetings. The Leadership Group decided to sponsor a conference to discuss issues facing the Upper Arkansas River basin. The Coordinator invited all interested groups to a planning meeting from which twelve people agreed to serve on a steering committee, to organize annual watershed conferences.

Location and Scale of Watershed:

The Upper Arkansas River basin is located on the eastern slope of the Rocky Mountains between Leadville and Pueblo. The area covered by the Upper Arkansas River Watershed Initiative (Initiative) includes the main stem of the Arkansas River and all of its tributaries from the headwaters near Leadville to the Pueblo Reservoir.

Participants:

Agency participants who signed the MOU include the EPA, Bureau of Reclamation, Colorado Department of Health, Colorado Division of Wildlife, Colorado Division of Minerals and Geology. Other interested parties who later became involved with the Initiative include local municipalities, counties, Trout Unlimited, the U.S. Natural Resources Conservation Service and rafting groups.

The Sangre de Cristo RC&D employs the Coordinator for the Initiative.

Problems Involved:

Water quality problems, such as heavy metal contamination from mining operations and excessive sedimentation from erosion, are the primary concern on the Upper Arkansas River basin. These water quality problems threaten the brown trout population in the river. Also, water supply and land use issues are involved.

Activities:

Initiative participants organize watershed conferences, which are open to anyone interested in Upper Arkansas River basin issues. Information about Arkansas River watershed projects and programs occurring at the local, state and federal level is shared. The Forum is structured so citizens within the watershed can meet and collaborate on projects and activities.

The parties that signed the MOU have established a shared Geographic Information System (GIS) data base that is housed and maintained at the Colorado Department of Health.

In May of 1995, the Upper Arkansas Watershed Forum was convened. Over 160 participants attended the two day conference. The meeting focused on water, public lands and growth issues within four counties. Attendees worked with a facilitator to prioritize and develop action plans for five major issues. Volunteer action teams were created to refine and implement the action plans.

Water quality improvement projects are being developed for the main stem of the Arkansas in Lake County and Four Mile Creek in Fremont County.

Processes:

Three informal citizen planning meetings held in the municipalities of Leadville, Salida and Canon City identified issues of local concern. The groups then met to determine the "best possible outcomes" of a watershed conference and set guidelines for an agenda. The groups decided the conference should emphasize information-sharing in a non-confrontational atmosphere. The conferences focus on communication within the watershed.

Goals:

When first formed, the goal of the Initiative was to coordinate studies and activities and to improve the health of the brown trout fisheries in the watershed. A broader goal, improving and maintaining the aquatic ecosystem of the watershed, has been adopted in the revised MOU signed in 1993. Later, the focus of the Initiative shifted to organizing an annual watershed conference.

Funding:

Funding for the watershed conferences has been provided by a grant from the Colorado Division of Minerals and Geology. The EPA has also provided funding for the Initiative and for the Coordinator's position. In order to avoid the federal label associated with EPA's funding, the Initiative agreed to use the Sangre de Cristo RC&D to disperse the funding and oversee progress.

What Has Been Accomplished:

The first watershed conference was successful. A survey of conference participants indicated their expectations were met, and the conference succeeded in encouraging information exchange. Also, a shared GIS data base was developed, which was one of the goals set forth in the MOU.

How Participants View Effectiveness, Success:

The future direction of the Initiative is yet to be determined. There was a division among conference participants on whether the conference should begin to organize and implement projects within the watershed.

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PECOS RIVER, NEW MEXICO

PECOS RIVER NATIVE RIPARIAN RESTORATION ORGANIZATION

Background:

In 1989, concerned citizens organized a public meeting to address the salt cedar problem along the Pecos River. The meeting was moderated by a representative from the U.S. Natural Resources Conservation Service. Salt cedar, a nonnative tree, has dominated the Pecos River using a large amount of water and crowding out the native vegetation. Over 120 people attended the meeting including local soil and water conservation districts (SCDs), U.S. Fish and Wildlife Service, New Mexico Department of Fish and Game and the Audubon Society.

From that initial meeting, the Pecos River Native Riparian Restoration Organization (Restoration Organization), a nonprofit group primarily consisting of SCDs, formed in 1990 to address the salt cedar problem in the lower Pecos River.

Location and Scale of Watershed:

The Restoration Organization addresses riparian areas along the lower Pecos River in southeastern New Mexico.

Participants:

The Organization consists of the Carlsbad SCD, Central Valley SCD, Penasco SCD, Dexter/Hagerman SCD, Pecos Valley Artesian Conservation District and Carlsbad Irrigation District.

Problems Involved:

Since the 1940s, the salt cedar, a nonnative tree species, has spread along the Pecos River corridor displacing native vegetation and using a large amount of water. Each acre of salt cedar is estimated to use as much as one acre foot of water. The wildlife is disappearing as the native habitat is overrun, and the salt cedar also appears to contribute salt to the already saline Pecos River water. Issues concerning the scarce water supply along the Pecos River are particularly sensitive because of a 1987 U.S. Supreme Court decision modifying the 1947 Pecos River Compact to require more specific flow deliveries from New Mexico to Texas.

Activities:

The Restoration Organization created a ten-year plan to eradicate the salt cedar and replant native vegetation on the lower Pecos River. A study project was developed encompassing five thousand acres of private land in the McMillan Delta. Groundwater monitoring, vegetation mapping, wildlife studies and an environmental analysis of the demonstration area were completed. As a result of this work, the Restoration Organization chose two herbicides to eradicate the salt cedar and hired a private contractor to spray the area.

Processes:

A representative from each participating district serves on the Restoration Organization's board of directors. The Restoration Organization formed as a nonprofit group to enhance credibility and encourage tax deductible donations from private interests. The Restoration Organization solicited participation from all concerned parties, not just those affected by the herbicide spraying, and encouraged all parties to attend meetings and express their views.

Goals:

The Restoration Organization plans to restore native riparian vegetation to the Pecos River basin and thus restore higher water flows and better wildlife habitat.

Funding:

Initially, the Restoration Organization had no funding. It later received small grants from the SCDs, Eddy and Chaves Counties, the New Mexico Department of Fish and Game and the New Mexico Environment Department. Additionally, the Organization received \$500,000 from the New Mexico Legislature to begin aerial spraying of the salt cedar stands.

What Has Been Accomplished:

The Organization has completed mechanical clearing, vegetation mapping and an environmental analysis of the demonstration area. Additionally, some initial spraying has been done on 120 acres of test plots.

How Participants View Effectiveness, Success:

The Organization encountered opposition from groups objecting to herbicide use. The efforts to obtain state funding were hampered by opposition from these groups. However, the SCDs have developed the trust of many landowners in the Pecos River basin.

Contact and Source:

Tom Davis
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201 South Canal Street
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Tom Davis, "Joining Forces: The Pecos River Native Riparian Organization," Addressing Water Issues Through Conflict Resolution (New Mexico Water Resources Research Institute), Sept. 1993.

UPPER RIO GRANDE, NEW MEXICO

RIO GRANDE JOINT INITIATIVES

Background:

The Rio Grande Joint Initiatives (Joint Initiatives) began in 1990 as an interagency effort co-sponsored by the U.S. Bureau of Reclamation, U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service. The Joint Initiatives group formed in order to evaluate three possible modifications to reservoir operations in the Upper Rio Grande basin.

Over forty individuals attended an initial meeting to discuss the possible modifications to the reservoir operations in the Upper Rio Grande basin. Subsequently, three committees were formed to explore the implications of each modification and make recommendations.

Location and Scale of Watershed:

The Joint Initiatives group addresses the upper Rio Grande watershed beginning with the Rio Chama in northern New Mexico and extending downstream to the Isleta Diversion Dam within the Isleta Pueblo, south of Albuquerque.

Participants:

Participants in the Joint Initiatives include the U.S. Bureau of Land Management, U.S. Army Corp of Engineers, U.S. Fish and Wildlife Service, U.S. National Park Service, U.S. Forest Service, Interstate Stream Commission, City of Albuquerque, Texas and Colorado Compact Commissions, Elephant Butte Irrigation District, Middle Rio Grande Conservancy District (MRGCD) and any other interested party.

Problems Involved:

The Joint Initiatives group focuses primarily on specific water conservation proposals and improvement of interagency cooperation.

Activities:

The proposals, collectively referred to as the Rio Grande Joint Initiatives, are: (1) pre-evacuation of water belonging to the City of Albuquerque from Abiquiu Reservoir before the spring snow melt run-off; (2) creation of a small irrigation reregulation pool in Cochiti Lake; (3) establishment of a minimum flow in the Rio Grande from the Cochiti Dam to Isleta Diversion Dam; and (4) implementation of the Bosque Biological Management Plan.

The first project considers planned releases, or pre-evacuation, of Albuquerque's water stored in Abiquiu Reservoir before spring run-off during years when snow pack is heavy and Elephant Butte Reservoir is drawn down. Beneficiaries of this project would include whitewater rafters and recreational interests at the head of Abiquiu Reservoir. The committee studying this project is examining how this proposal may affect water users, fish and wildlife.

The second project involved the construction of a 5,000 acre-foot irrigation pool at Cochiti Lake, which was designed to improve efficiency in the storage and release of irrigation water for the middle Rio Grande Valley. The committee studying this project recommended rejection of the Cochiti reregulation proposal because of significant negative impacts on vegetation and wildlife. Committee work on this project is now complete.

The third project was an effort to provide minimum flows in the Cochiti-to-Isleta reach of the river. The MRGCD and the City of Albuquerque made an agreement to leave some irrigation water in the Rio Grande instead of diverting it and running it in riverside canals to its destination at the Isleta Diversion dam. Committee work on this project is now complete.

The fourth project, undertaken by the Joint Initiatives group in January 1995, involves implementing the Rio Grande Bosque Biological Management Plan (Bosque Plan). The Middle Rio Grande Biological Interagency Team developed the Bosque Plan. The plan sets forth what conditions will sustain and enhance the bosque's biological quality and ecosystem integrity and recommends actions to achieve those conditions.

Processes:

Committees study the effects of the proposed modifications and make recommendations concerning the proposals. The entire Joint Initiatives group meets annually to review the progress of the committees.

Goals:

The Joint Initiatives group's goal is to study and make recommendations regarding each of the proposals under consideration. Additionally, the group hopes to develop a consensus concerning the proposed modifications at the local and regional level.

Funding:

Agencies, interest groups and individuals have all donated their time and resources to address the proposals.

What Has Been Accomplished:

The Joint Initiatives group has made significant progress on each of the three initial proposals.

How Participants View Effectiveness, Success:

The level of interest in the Rio Grande Joint Initiatives and the progress made to date in evaluating the plans underscores the value of providing a forum for interested parties to express their concerns. Additionally, the involvement of different groups in a dialogue sets the stage for future discussions about the water in the Rio Grande.

Contact and Sources:

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(505) 248-5372

Ellie Trotter, Dick Kreiner, and Rob Leutheuser, "The Rio Grande Joint Initiatives: A Demonstration of Interagency Collaboration in Water Management," proceedings of the 36th Annual New Mexico Water Conference (New Mexico Water Resources Research Institute), 1991.

"Rio Grande Joint Initiatives," Dialogue 7 (Western Network, Santa Fe), Feb. 1994.

RIO PUERCO, NEW MEXICO

RIO PUERCO WATERSHED INTERAGENCY GROUP CUBA WATERSHED COMMITTEE

Background:

Concerns over high levels of sedimentation led to the formation of both the Rio Puerco Watershed Interagency Group (Interagency Group) and the Cuba Watershed Committee (Cuba Committee). The Interagency Group focuses primarily on gathering and exchanging information, and the Cuba Committee implements projects. The two groups informally share information and suggestions through mutual members.

In 1991, the U.S. Bureau of Land Management (BLM) signed a Memorandum of Understanding with the State of New Mexico agreeing to implement best management practices to improve nonpoint source pollution problems on BLM land. In early 1993, BLM decided to include other agencies involved with the river in order to address the water quality problems more effectively. As a result, the Interagency Group was established.

Around the same time, the Cuba Committee was organized. New Mexico State University sponsored a seminar to identify economically beneficial projects in the Village of Cuba. After attending the seminar, a group of interested landowners formed the Cuba Committee to implement on-the-ground projects in the Rio Puerco basin around Cuba.

Location and Scale of Watershed:

The Interagency Group addresses the entire Rio Puerco watershed, which encompasses approximately 2.2 million acres. The Rio Puerco originates in northern New Mexico and flows through the Village of Cuba, west of Albuquerque and empties into the Rio Grande at the City of Bernardo.

The Cuba Committee focuses on the upper Rio Puerco basin around the Village of Cuba.

Participants:

The Interagency Group includes representatives from various local, state and federal agencies including the BLM, U.S. Forest Service, U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Natural Resources Conservation Service, U.S. Bureau of Indian Affairs, State of New Mexico and local governmental entities.

The Cuba Watershed Group consists primarily of local landowners within the Cuba River watershed including farmers, ranchers, U.S. Forest Service, BLM and the Natural Resources Conservation Service.

Problems Involved:

The water in the Rio Puerco contains high levels of sedimentation. The sedimentation has degraded the water quality, reduced water storage capacity in Elephant Butte Reservoir, caused problems with irrigation system channel maintenance and increased the risk of flooding.

Activities:

The Interagency Group meets about three or four times a year to exchange scientific and technical information on the watershed and coordinate efforts when possible. BLM and the other participating agencies have supported the Rio Puerco Watershed Act, which was proposed for the second time to the U.S. Congress in 1995. The Rio Puerco Watershed Act is modeled after the Zuni River Watershed Act of 1992.

The Interagency Group is also collecting historic photographs of the watershed and retaking the photographs to create a pictorial comparison of the watershed over the years.

The Cuba Committee implements on-the-ground projects such as riparian planting, sagebrush control and construction of erosion control structures. Additionally, the Cuba Committee has sponsored acequia system repairs. ("Acequia" is a Spanish word for irrigation ditch or canal.)

Processes:

The Interagency Group focuses on establishing cooperative relationships and facilitating information exchange among agencies working in the watershed. The Interagency Group works primarily with technical and scientific information and generally does not work with on-the-ground projects.

The Cuba Committee, on the other hand, focuses almost exclusively on implementing on-the-ground projects. Meetings, which occur monthly, operate informally. Because of some membership overlap between the Interagency Group and the Cuba Committee, the Cuba Committee benefits from the technical information gathered by the Interagency Group.

Goals:

The Interagency Group is seeking Congressional enactment of the Rio Puerco Watershed Act.

The Cuba Committee seeks to implement projects that will aid economic development in the community. Participants in the Cuba Committee believe the economic health of the community depends on the health of the watershed. As a result, the projects usually focus on improving various sites in the watershed.

Funding:

Each agency funds its own activities and pays its own way within the Interagency Group. The Cuba Committee received approximately \$30,000 from the U.S. Forest Service. Additionally, the Cuba Committee receives matching funds for specific projects from the BLM, the Natural Resources Conservation Service and individual landowners.

What Has Been Accomplished:

The Interagency Group has developed an effective information network among agencies. The Cuba Committee has completed on-the-ground projects and sponsored acequia improvement projects.

How Participants View Effectiveness, Success:

The Cuba Committee is run by a very dedicated core group of participants. Some participants feel the activities of the group should be more focused. Rather than doing different projects at various locations in the upper watershed, the Cuba Committee would be more productive if it could coordinate its projects so they focus on one or two areas or problems.

Contact:

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